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Editorial Note

JADS is a re-instituted journal after some seven years of interruption. Having been re-instituted in February 2019, the new JADS Editorial Board embarked on a series of institutional and framework setting and building for the journal. Since then, three issues (Volume 6, Nos 1 & Volume 6 No 2 for the year 2019 year; and Vol 7 No 1 for June 2020 issue) have been published. The present issue (Vol 7, No 2, December 2020) is composed of five articles that have passed a rigorous review process.

The first article by Mr. Fikru argues the case for the proper balance between democracy and autocracy suitable for developing countries that are struggling to achieve development in the middle of fierce domestic and global challenges. It concludes that at the early stage of development it is inevitable for developing countries to adopt a "democratic authoritarian regime."

Dr Kassa in the second evaluates the economic sustainability impacts by Addis Ababa light rail transit (AA-LRT) using performance indicators such as travel time, travel cost and employment generation. The article investigates whether AA-LRT is more economically sustainable or not, compared to other road-based public transits such as City-buses and Midi-buses and compared to the situation before the start of AA- LRT operation. Samples for onboard surveys were selected from transit users and experts through proportional quota sampling. Empirical quasi experiment, multi-criteria analysis and comparative impact analysis approaches were used together with Paired-samples t-test, One way ANOVA, Ordinal and Logistic Regression. Findings indicate AA-LRT is really producing economic benefits such as travel time savings and affordable travel costs since 2015. Benefits are found to be more economically sustainable in AA-LRT than other road-based public transits. The paper concludes AA-LRT makes a more significant contribution to economic sustainability. However, it has little weaknesses like inadequate crossing facilities, overcrowded and delayed trips, troubled transfer, fare, and ticket system.

Dr Desalegn and Mr. Meshesha in the third article investigates determinants of graduate unemployment and its duration based on data collected from 600 graduates in selected towns of Oromia National Regional State, using logistic regression and Weibull regression models. The result from the logistic regression model identified that level of education, specialization, place of residence (town), and year of graduation significantly affect the employability of graduates. The findings from the Weibull regression for survival analysis also showed that level of education, specialization, year of graduation, and place of residence were important in determining the duration of graduate unemployment. They present a strong case the need for considering employability when opening a program and inclusion of entrepreneurship in the curriculum to make graduates innovative and forward looking.

The fourth article by Mr. TIbebu and Mr. Hassen deal with the effect of leadership style in accelerating service delivery in municipalities in selected cities of Ethiopia, using structured questionnaire in the form of the Multifactor Leadership Questionnaire (MLQ) analyzing responses from 769 sampled employees of four city administrations (Hawassa, Bahir Dar, Adama, Dire Dawa) and the collected data was analyzed using descriptive statistics, correlation, and multiple regression analysis. The finding of this study shows there is a significant (p-value<0.01) but weak relationship between perceived service delivery, leader transformational, transactional, and laissez-faire leadership style. They conclude these three-leadership styles have a significant effect on the service delivery ($P<0.05$).

The last article by Mr. Kidanemariam aims to investigate the main determinants of total factor productivity (TFP) of large and medium scale manufacturing industries in Ethiopia for the period 1993-2018, using econometric model (system GMM). The results show the intensity of imported raw materials, the loan provided to the manufacturing industries, foreign direct investment, human capital, and infrastructure growth (road coverage) had a significant positive effect on the TFP of Large and Medium Scale manufacturing industries. However, export intensity and macroeconomic instability(inflation) adversely affected TFP. Regardless of the continuous rise in number, employment, and value-added per worker, there has been no similar progress in manufactured exports. Further, it is proved that the current operation of Large and Medium Scale Manufacturing Industries in Ethiopia is highly constrained by a shortage of supply of raw materials, absence of demand for products, and lack of working capital. The paper recommends government should focus on policies aimed at human capital formation, loan access, infrastructure development, attracting foreign direct investment, and creating a stable macroeconomic environment to intensify TFP of Large and Medium Scale manufacturing industries.

Editor-in-Chief

The Achilles' Heel of Democracy and the Strength of Autocracy

*Fikru Feleke Shewarega**

Abstract

The Western world has passed a difficult time to reach today's level of socio-economic and political development. However, their experience does not tell that at the early stages of their development they started from democracy. For developing countries, it may be from devotion to "generously help" developing countries or deliberately impede development, they advocate democracy although everything must be context sensitive. One political system cannot be fit for all countries at all times. What is important is to set a universal goal than universal means. All countries at some point in time converge on values of democracy and hu man rights. But given differences in resources, institutions, history, and external influence, the way they develop, and exercise democracy cannot be the same. The conditions in which developing countries are determine what political regime to be applied. Both Democracy and Autocracy have their merits and demerits. We should take what is best for developing countries from these regimes. They are not oil and water that we can mix to produce the best political system. The major objective of this article is to indicate the proper balance between democracy and autocracy suitable for developing countries that are struggling to achieve development in the middle of fierce domestic and global challenges. To this end, qualitative method is employed to collect and analyze secondary data. Accordingly, the study has come up with a finding that at the early stage of development it is inevitable for developing countries to adopt a "democratic authoritarian regime."

Keywords: Autocracy: democracy, development, state and nation-building, army

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Introduction

.What dictates the choice of a given regime type is the conditions a country is in which is discussed in this section. This is an era when more is expected from the state than ever before. But state strength is a complex, multifaceted concept that involves political motivation as well as institutional capacity and willingness (Torres and Anderson, 2004).

State strength is a relative concept. It can be measured by the state's ability and willingness to provide fundamental political goods associated with statehood, notably: physical security, legitimate political institutions, economic management, and social welfare. Around the world, many states have critical capacity gaps in one or more of these four areas of governance, broadly conceived. In effect, they possess legal but not empirical sovereignty. In the security realm, they struggle to maintain a monopoly on the use of force, provide security from external and internal threats, control borders and territory, ensure public order and provide safety from crime. In the political realm, they lack legitimate governing institutions that provide checks on political power, protect basic rights and freedoms, hold leaders accountable, deliver impartial justice and efficient administration, and permit broad citizen participation. In the economic realm, they strain to carry out basic macroeconomic and fiscal policies and lack a legal and regulatory climate conducive to entrepreneurship, private enterprise, open trade, natural resource management, foreign investment, and economic growth. Finally, they are unable or unwilling to meet the basic needs of their populations by making even minimal investments in health, education, and other social services (Patrick, 2006).

States that fail to meet these minimal standards have been characterized as 'weak', 'fragile', or 'poorly performing'. More extreme cases have been labelled 'failed' or 'collapsed' (Torres and Anderson, 2004). Weak states are defined as countries lacking the capacity and/or will to foster an environment conducive to sustainable and equitable economic growth; to establish and maintain legitimate, transparent, and accountable political institutions; to secure their populations from violent conflict, and to control their territory; and to meet the basic human needs of their population (Rice and Patrick, 2008). Also, the state is unable to play its full role in international systems and has a negative spill over effects on near neighbors (Torres and Anderson, 2004).

Why are some countries fragile? An extensive theoretical and empirical literature has highlighted several factors that contribute to (or are, more generally, associated with) fragility (Gelbard, et al., 2015).

Fragility can be the outcome of a multitude of interrelated internal and external causes, which analysts classify into four broad classes: structural and economic factors, political and institutional factors, social factors, and international factors. Structural and economic factors such as poverty, low income (sustainability of regimes is highly correlated with per capita income), and economic decline can be drivers of fragility since poor economic performance can undermine the popularity of governments. Other structural factors which can incite and perpetuate fragility include violent conflict, presence of armed insurgents, lack of natural resource wealth, demographic stress, and adjacency to fragile countries. Similarly, political, and institutional factors such as bad economic and political governance, political repression, weak institutional capacity, institutional multiplicity, and succession politics can precipitate fragility due to the uncertainty these situations create. The prevalence of tension within society caused by social factors such as horizontal inequalities, societal fragmentation, social exclusion, gender inequality, and weak civil society structures to provide checks and balances can also instigate disturbances and lead to the fragility in any state (Economic Commission for Africa, 2012).

Fragility can also emanate from and be sustained by international factors such as a legacy of colonialism, developments in the international political economy, climate change, and global economic shocks. Rising food and energy prices can result in instability and cause fragility as large sections of the population are unable to access the basic needs (Economic Commission for Africa, 2012).

As state structures collapse and borders become more porous, countries often export violence -- as well as refugees, political instability, and economic dislocation to states in their vicinity. This risk is compounded because weak, vulnerable, or collapsed states are often adjacent to countries with similar characteristics that possess few defences against spill overs (Patrick, 2006).

The majority of contemporary theories on democratization and democratic transitions have built on the empirical experience of democratization in Europe or the Americas. These theories, as well as policy writings influenced by these writings, often assume the prior existence of a Weberian state. Max Weber's definition of the state has remained a benchmark for most contemporary social science analysis. According to the Weberian definition, the defining properties of the state include the following: "unchallenged control of the territory within the defined boundaries under its control, monopolization of the legitimate use of force within the borders of the state, and the reliance upon impersonal rules in the governance of its citizens and subjects". The great majority of post-colonial states that gained independence in the post-1945 era do not fulfil these criteria (Soderberg and Ohlson, 2003).

Given these multiple problems developing countries are facing, which regime type is suitable is the major concern of this paper. Accordingly, the paper raises four major questions: (1) what are the main weakness and strengths of democracy? (2) What challenges and opportunities can develop countries experience from autocracy? (3) What lessons can developing countries take from the early nation and state-building experiences of Europe? (4) What role can Army play at the early stage of state and nation-building?

Research Method

Methodologically this research is a qualitative one that depended on secondary sources. The data are collected and chosen through thorough examination comparison and evaluations of their relevance for the article.

Result and Discussion

Dictatorship and Economic Growth

Which political regime is better to achieve economic development democracy or dictatorship? One cannot deny the fact that development encompasses a broad spectrum of economic, ecological, political, technological, and social issues (Šlaus and Jacobs, 2011). But among the two alternative regime types which one creates a more conducive condition for development is a debatable issue without a conclusive answer. According to the neoclassical view about the theory of growth, key factors for economic growth are labor, physical and human capital. Empirical studies, however, suggest that these factors are inadequate to understand growth and provide many instances where countries with similar per capita levels of physical and human capital realize very different rates of economic growth. Thus, other factors need to be accounted for (B. Djezou, 2014).

Perhaps the most common generalization linking political systems to other aspects of society has been that democracy is related to the state of economic development. The more well-to-do a nation, the greater the chances that it will sustain democracy. From Aristotle down to the present, men have argued that only in a wealthy society in which relatively few citizens lived at the level of real poverty could there be a situation in which the mass of the population intelligently participate in politics and develop the self-restraint necessary to avoid succumbing to the appeals of irresponsible demagogues. A society divided between a large, impoverished mass and a small favored elite results either in oligarchy (dictatorial rule of the small upper stratum) or tyranny (popular-based dictatorship) (Lipset, 1960).

The proposition that wealthy societies are usually more democratic has a long lineage. Political philosophers have suggested this proposition; for example, John Stuart Mill, reflecting upon the British colonies, theorized that democracy was not suitable for all nation-states (Norris, 2008).

If some authors felt that democracy was unlikely to survive without a prior process of economic development, others believed that democracy itself impeded that development (Kelsall, 2014). The main mechanism by which democracy is thought to hinder growth pressures for immediate consumption, which reduce investment. Only states that are institutionally insulated from such pressures can resist them, and democratic states are not (Przeworski and Limongi, 1993).

Although underdevelopment *per se* should not constitute a fundamental obstacle to

democratization, the establishment of stable and sustainable democracy requires substantial changes in the forms of accumulation, the promotion of an acceptable level of welfare that will allow the majority of the people to have confidence in the capacity of democratic institutions to manage economic, social, and political conflicts; and the resolution of the contradictions between authoritarian relations that are dominant at the political sphere and nascent liberal pressures that are to be found in civil society (Bangura, 1991).

Political order and governmental authority are needed during the early, difficult stages of economic development. Only at a later stage do participation and distribution become relevant (Sorensen, 2008:101). Historical cases of states that have been democratic since the moment they were founded are exceptional. The US and India may offer the most prominent examples but, even then, fully functioning administrative apparatuses were in place before the end of colonial rule and the establishment of independent democratic states. In general, functioning state is in place before democracy is established. State-building calls for a considerable concentration of power, authority, autonomy, and competence in state political and bureaucratic institutions. Democratization, on the other hand, has an inherent tendency to disperse power and slow down decision-making processes through the creation of multiple veto players and checks and balances. In short, while state-building focuses on creating (more) effective and capable states, democratic structures are intended to keep the state under check (Verena and Alina, 2007).

The "conflict perspective" argues that at least some ability to resist populist pressure is necessary for growth. Lower-income individuals, it is supposed, have a higher demand for immediate consumption and will use their political power to raise wages, tax capital, and engage in other redistributive policies that inhibit profits and therefore investment. Democracy enables societal groups to make greater demands on the state for particularistic benefits that are detrimental to growth. Autocrats are both better able to resist such demands and, indeed, to suppress labor unions, wages, and consumer demands (Baum & Lake 2003).

Moreover, if liberal democracy leads to a minimal role for the state, that too may be harmful to development. In the past, in many developing countries the state may have been over-involved in the economy. Thus, some disengagement may be justified. However, the state must play a key role to create an adequate regulatory environment and fill the gaps created by market failure. Some note that an authoritarian government will be better prepared to take hard decisions in economic stabilization and structural adjustment programs (Samarasinghe, 1994).

One quite common argument among political scientists is that democracy is suitable for development in already rich countries with high state capacity, but that more authoritarian government may be needed in poorer countries with weak state institutions. In such countries, authoritarianism is argued to stabilize polities, strengthen state institutions, enhance the accumulation of capital investment, and thereby ultimately generate economic development (Knutsen, 2009).

If a democracy-first thesis is true, how can it explain some cases exceptional to its argument? Like the cases of Taiwan and South Korea, both two countries experienced dramatic economic development without democratic institutions during the 1980s and 1990s. Moreover, the case of China from the 1990s also demonstrates that non-democracy still can achieve economic development. Thus, democracy is not the necessary precondition for developing countries to reach development (Chen 2007).

This does not mean developing countries remain undemocratic forever. As Stephen Haggard (1990) notes, in the long run, there is a definite positive association between economic prosperity and democracy. In general, the rich industrialized countries enjoy democratic institutions and freedoms. Conversely, it is rare to see democracy thrive under conditions of economic deprivation (Cited in A. Samarasinghe, 1994). A clear indication of this is that after a long period of economic development under authoritarian rule, which engendered a large and increasingly restive middle class, the ruling regimes in Korea and Taiwan undertook a process of political liberalization which transformed both countries into democracies (Choue, Lee, and Sané, 2006).

In the context of East Asian economic development, it is commonly suggested that citizens (and political elites) view democracy as an impediment to growth and stability – even if they endorse democracy in principle. This supposed tension between democracy and economic development was also prominent in Lee Kuan Yew's criticism of democracy. Singapore is widely cited as the archetypical case of where citizens accept a restriction of their political rights and liberties in exchange for the economic progress of the non-democratic regime (Dalton & Ong, 2005).

So, what explains why some autocracies succeed so spectacularly when others fail? Further, why is there a greater range of performance among the autocracies? One of the more popular explanations hinges on the character of individual leaders. The explanation goes like this. Because autocracy puts fewer restraints on the leader, it simplifies the transmission mechanism between his or her own characteristics and economic performance, so that benevolent leaders produce exceptionally good outcomes, and bad leaders exceptionally poor ones (Kelsall, 2014).

As argued above, the primary reason why democracy is considered to hinder economic development is the pressure for immediate consumption under its institution, and this leads to investment reduction. As compared with democracies, only dictatorships can resist the pressure for immediate consumption with its institution and promote economic development (Chen, 2007).

Furthermore, those who believe that democracy does not help development point out the following: Firstly, democracy encourages ethnic and other cleavages and creates instability that jeopardizes development. Secondly, political elites respond to pressure groups that cause distortions in resource allocation. Third, democracy puts pressure on the rulers to redistribute ahead of growth. What is required for development is more savings and less consumption. That is easier to achieve under an authoritarian regime that can take unpopular decisions (Samarasinghe, 1994:19).

What the experience of democratic countries tells us, according to Amartya Sen, is that the practice of democracy that has won out in the modern West is largely a result of a consensus that has emerged since the Enlightenment and the Industrial Revolution, and particularly in the last century or so(Sen, 1999).

This brings us to a widespread acknowledgment that among well-off countries, democracies do far better than other governance systems at generating prosperity and stability over extended periods. Establishing a world of prosperous democracies is the agreed-upon goal. The debate is over how poor countries can best reach this threshold (Siegle, 2006).

Poor countries can grow their economies more rapidly with authoritarian governments. That is, in societies with sparse financial, human, and institutional capacity, authoritarian governments can better

marshal these limited resources towards clear, definable objectives. Spared the distractions of periodic elections, autocratic governments can steadily pursue a coherent, long-term development vision. Priorities can be set, investments made, and infrastructure built. No need for endless rounds of participatory dialogue and buy-in. Wages can be kept down, savings generated, and an attractive investment climate created (*Ibid*).

The policy implication flowing from these assumptions is that deferring democracy until countries reach some middle-income status is justified. Attempts to promote democracy in the developing world prematurely are fraught with risk (*Ibid*).

One general proposition which is true of all these systems is that dictators have a greater capacity for action, good or bad. If a dictator wishes to raise taxes, declare war, or take tough measures vs. crime, he may have to deal with some opposition to these policies among his advisers, but by and large, he can do so. Democracies, on the other hand, are often mired in inaction. The basic reason is that democratic leaders can only act when they can build support for their policies and there may be no consensus as to what to do. Even on problems where there is an agreement that something should be done, there may be no agreement on what should be done. In extreme cases, the political system of a democratic country may become paralyzed by conflicts or opposing viewpoints. In these circumstances, politicians often prefer to do nothing, to shroud their positions in ambiguity, or to pretend to be on all sides of an issue. The result is that the population can become cynical and lose trust in the promises of any politician.

This can set in motion a downward spiral since the more this happens, and trust is lost, the harder it becomes for politicians to do something by forging a compromise. This is more likely to happen when the pressures for political action on an issue are particularly conflicting, when positions are far apart, when issues are particularly divisive, when the population is divided along racial or ethnic lines, and when there is relatively little trust in politicians by the citizens. To put it another way, while there may be freedom to speak in democracies, sometimes no one is listening. And in general, there is a trade-off: the more points of view are represented by the political system, the smaller the system's capacity for action. This is one source of the allure of dictatorship. Dictators possess the capacity to repress opposition to their policies, and this means they can act in circumstances where democratic rulers cannot (Wintrobe, 2001).

Democracy and Economic Growth

It is often claimed that nondemocratic systems are better at bringing about economic development. This belief sometimes goes by the name of "the Lee hypothesis," due to its advocacy by Lee Kuan Yew, former president of Singapore. He is certainly right that some disciplinarian states (such as South Korea, his own Singapore, and post-reform China) have had faster rates of economic growth than many less authoritarian ones. The "Lee hypothesis," however, is based on sporadic empiricism, drawing on very selective and limited information, rather than on any general statistical testing over the wide-ranging data that are available. General relations of this kind cannot be established based on very selective evidence. For example, we cannot take the high economic growth of Singapore or China as "definitive proof" that authoritarianism does better in promoting economic growth, any more than we can draw the opposite conclusion from the fact that Botswana, the country with the best record of economic growth in Africa, indeed with one of the finest records of economic growth in the whole world, has been an oasis of democracy on that continent over the decades. We need more systematic

empirical studies to sort out the claims and counterclaims (Sen,1999).

In maritime Southeast Asia, we find Southeast Asia's only genuine democracies: Indonesia, the Philippines, and East Timor. The relative success of democracy in 'island Asia' is surprising in many ways, especially in terms of democratic preconditions: not only are the socio-economic characteristics of these three countries less than propitious for democracy, but they are also amongst the region's most ethnically and religiously diverse states, and more threatened by communal violence, ethnic identity and militant Islam than anywhere outside Southern Thailand (Choue, Lee, and Sané, 2006).

Indonesia is a Muslim-majority country of over 240 million people, with hundreds of different linguistic and ethnic groups. Like its two democratic neighbors, the Philippines and East Timor, it combines electoral democracy with acute problems of governance and state effectiveness. All three countries are amongst the poorer states in Southeast Asia, with a per capita GDP of around $4000, well below the $6000 that Przeworski et al consider a minimum threshold for democratization (*Ibid*).

We must not only look at statistical connections but also examine and scrutinize the causal processes that are involved in economic growth and development. The economic policies and circumstances that led to the economic success of countries in East Asia are by now reasonably well understood. While different empirical studies have varied in emphasis, there is by now broad consensus on a list of "helpful policies" that includes openness to competition, the use of international markets, public provision of incentives for investment and export, a high level of literacy, and schooling, successful land reforms, and other social opportunities that widen participation in the process of economic expansion. There is no reason at all to assume that any of these policies is inconsistent with greater democracy and had to be forcibly sustained by the elements of authoritarianism that happened to be present in South Korea or Singapore or China. Indeed, there is overwhelming evidence to show that what is needed for generating faster economic growth is a friendlier economic climate rather than a harsher political system (Sen,1999).

According to Siegle, Weinstein, and Halperin (2004) cited in Chen (2007) Democracies indeed outperform non-democracies in economic development due to regular elections, democratic regimes need to respond to the demands of their citizens and societal groups; the institutional arrangement of election is the key for democracies better perform in the economy. Besides, due to several characteristic features of democracy, such as accountability, checks and balances, low corruption, openness, competition, the flow of information, transparency, and adaptability, democracies usually outperformed non-democracies on most indicators of economic and social well-being. Thus, the policy and strategy to assist developing countries to develop are by promoting democracy, not by economic growth.

Viewed in this light, the merits of democracy and its claim as a universal value can be related to certain distinct virtues that go with its unfettered practice. Indeed, we can distinguish three different ways in which democracy enriches the lives of the citizens. First, political freedom is a part of human freedom in general and exercising civil and political rights is a crucial part of the good lives of individuals as social beings. Political and social participation has intrinsic value for human life and well-being. To be prevented from participation in the political life of the community is a major deprivation. Second, democracy has an important instrumental value in enhancing the hearing

that people get in expressing and supporting their claims to political attention (including claims of economic needs). Third--and this is a point to be explored further--the practice of democracy allows citizens to learn from one another and helps society to form its values and priorities. Even the idea of "needs," including the understanding of "economic needs," requires public discussion and exchange of information, views, and analyses. In this sense, democracy has constructive importance, in addition to its intrinsic value for the lives of the citizens and its instrumental importance in political decisions. The claims of democracy as a universal value must take note of this diversity of considerations (Sen,1999).

As Samarasinghe, observes Democracy can reinforce market-oriented development in several ways. An accountable and transparent system checks corruption. The rule of law guarantees property rights that help capitalist production. Democracy may also lead to reforms that transfer resources from privileged sections of the community, say, urban areas, to underprivileged sections, say, rural areas that may foster more sustainable and equitable growth (Samarasinghe, 1994).

In some countries, social welfare has improved because of democracy because the competition for the votes of the masses promotes welfare policies. Such policies affect not only current consumption levels but also the distribution of wealth, defined to include both physical capital as well as human capital (*Ibid*).

Until quite recently, conventional wisdom has held that economic development, wherever it occurs, will lead inevitably-and quickly-to democracy. The argument, in its simplest form, runs like this: economic growth produces an educated and entrepreneurial middle class that, sooner or later, begins to demand control over its own fate. Eventually, even repressive governments are forced to give in. The fact that almost all the richest countries in the world are democratic was long taken as evidence of this progression. Recent history, however, has complicated matters. As events now suggest, the link between economic development and what is generally called liberal democracy is quite weak and may even get weaker. Although it remains true that among already established democracies, a high per capita income contributes to stability, a growing number of affluent authoritarian states suggest wealth alone does not automatically lead to greater political freedom. Authoritarian regimes around the world are showing that they can reap the benefits of economic development while evading any pressure to relax their political control. Nowhere is this phenomenon more evident than in China and Russia (De Mesquita and George, 2005).

Unveiling Nation and State Building Experiences

In the burgeoning literature generated by recent international interventions, there has been a tendency to use the terms ‘state-building’ and ‘nation-building’ interchangeably. This has confused different, though closely related, processes of political development and has also obscured the highly contingent relationship between ‘nation’ and ‘state’ in historical processes of state-formation and consolidation. State-building is the task of building functioning and durable states capable of fulfilling the essential attributes of modern statehood which include providing security from external threats and maintaining internal order, raising, and collecting taxes, delivering essential services such as health and education, the provision of transport and communications infrastructure, and the prudent management of the economy (Dinnen, 2007). State-building is either state-*re*building (in post-conflict situations) or state strengthening (i.e. increasing capacity in fragile and weak states) (Fritz and Menocal, 2007).

Nation-building, on the other hand, refers to the broader process of developing a shared sense of political community that is capable of binding together the population of a given state. While the state has a central role in this task, nation-building also requires the mobilization of a range of non-state stakeholders (Dinnen, 2007). State-building deserves priority over nation-building; the competence, probity, effectiveness, fairness, representativeness, and distributive justice of the state in its conduct of public affairs will usually be more decisive in creating fellow-feeling than any heavy-handed insistence on national loyalty (Stark, 1986).

After the French Revolution, especially in the late nineteenth century, many policies were deployed to create a unitary nation-state in France in which all French citizens had only one cultural and political identity. These policies included a package of incentives and disincentives to ensure that French would become the only acceptable language in the state. Political mechanisms to allow the recognition and expression of regional cultural differences were so unacceptable to French nation-state builders that advocacy of federalism was at one time a capital offense (Stepan, Linz and Yadav, 2011).

Other successful democracies, such as contemporary Sweden, Japan, and Portugal, are close to the ideal type of a unitary nation-state. Some federal states, such as Germany and Australia, have also become nation-states. In a polity where socio-cultural differences have not acquired great political salience, and most of its politicized citizens have a strong sense of shared history, the aspiration to create a nation-state should not create problems for the achievement of an inclusive democracy. The creation of such a national identity and relative homogeneity in the nineteenth century was identified with democratization and was possible in consolidated states. If a polity has significant politically-salient cultural or linguistic diversity —and a large number of polities do—we will argue that political leaders in such a polity need to think about, craft, and normatively legitimate a type of polity with characteristics of a "state-nation." The states we would like to call state nations are multicultural, and sometimes even have significant multinational components, which nonetheless still manage to engender strong identification and loyalty from their citizens.' Thus, state-nation is a term introduced to distinguish democratic states that do not, and cannot, fit well into the classic French-style nation-state model based on a “we-feeling” resulting from an existing or forged homogeneity. In the twentieth century, however, attempts to create a nation-state by state policies encountered growing difficulties, even in an old state like Spain (*Ibid*).

Many post-colonial states, particularly in Africa, had no pre-colonial state that could be revived, and the great majority of these states are poly ethnic. Nevertheless, two points must be made here: first, perhaps the only African state to have collapsed institutionally in the post-colonial era, namely Somalia, is also one of the few mono-ethnic ones. In other words, shared ethnic identity is not sufficient to build nationhood. Second, in most poly ethnic states, some degree of compromise between constituent groups is needed, and some degree of supra-ethnic symbolism is required – if only to avoid riots and unrest. To depict the nation as identical with a ‘mosaic of ethnic groups’ could, at the same time, threaten to undermine the project of nation-building since it focuses on differences instead of similarities (Eriksen, 2010).

Whereas the processes of state formation in Europe and the western world took centuries,

western state forms were 'delivered' like products to many parts of the Global South in a relatively short period during the era of decolonization. The decolonization process was guided by the replication of European political models (Boege, Brown, Clements, and Nolan, 2009).

Ayoob argues that the developing states are now witnessing the typical problems significant for the early stages of state-building, namely, the lack of unconditional legitimacy for state boundaries and state institutions, inadequate societal cohesion, and the absence of societal consensus on fundamental issues of social, economic, and political organization. These problems typically arise in the early stages of the state-building process when state-makers attempt to impose order, monopolize instruments of violence, and demand the exclusive loyalties of their populations. This situation, in turn, leads to violence and insecurity as state elites attempt to broaden and deepen the reach of the state, and clashes with the interests of strongmen and segments of the population that perceive the extension of state authority as posing a direct danger to their social, economic, or political interests. Given the short amount of time whereby this process must take place, crises erupt simultaneously, becomes unmanageable as they overload the political and military capabilities of the state and lead to an accumulation of crisis that further erodes its legitimacy (Cited in Soderberg and Ohlson, 2003).

The problems of state-making and regime security in many post-colonial states are further complicated by two other factors that were either absent or very weak during the early stages of state-making in Europe, namely the demand for political participation by increasing numbers of politically mobilized people and the demand for a more equal economic distribution (Soderberg and Ohlson, 2003).

The political leadership of the weak state faces a fundamental dilemma. The state must be strong to build more unity within the society, to construct national identities, and to create legitimacy by providing security and other services. Yet, the political leadership does not have the resources to accomplish these tasks. To obtain them it resorts to predatory and kleptocratic practices or plays upon and exacerbates social tensions between groups in the society, which only adds to these tensions and further erodes loyalties. The weak state is thus caught in a vicious circle. "Everything it does to become a strong state perpetuates its weakness" (*Ibid*).

It should be noted that the formation of the nation-state in Europe has not been a peaceful process. From military violence to cultural oppression to forced adoption of a common language and forced conscription of soldiers, the nation-building process was rife with violence committed by the powerful majority group or the ruling elite to bring minorities and the less powerful into the nation-building process. There was little romance in this process – and little democracy, too, for that matter. However, in the post-World War II world, violence is no longer an accepted way of solving conflicts, at least not in the moral rhetoric of the international community. The non-acceptance of violence is not limited to military or physical violence. Also, cultural violence, for instance forcefully imposing a national language, will spark international condemnation based on the general acceptance of people's right to self-determination. And so it seems that the European road to nation-building, paved as it was by violence, is not a very feasible road for fragile states today (Grotenhuis, 2016) because the international political and economic system has changed radically in the last half-century and, therefore, the war-making/state-making connection does not

work in the contemporary world (Taylor and Botea, 2008).

The undeniable fact is that historically, state-building preceded democratization and was generally accomplished by coercive means through conquests or in the process of resisting conquests (Kidane, 1997). From this, the lesson that stats men and policymakers take is that state formation and state-building have emerged as long-term, non-linear, tumultuous, inherently violent, and conflict-ridden processes that are also deeply political (Fritz and Menocal, 2007).

Cited in Van de Walle, and Scott (2009), we note Ottoway's observation that 'The world should not be fooled into thinking that it is possible to build states without coercion'. Harsh compromises are often necessary, and these include military coercion and the recognition that democracy is not always a realistic goal.

Centrality of Army at Early Stage of State and Nation Building

Until the end of the Cold War, the conventional wisdom in the world was that ethnicity and nationalism were outdated concepts and largely resolved problems. On both sides of the Cold War, the trend seemed to indicate that the world was moving toward internationalism rather than nationalism. As a result of the threat of nuclear warfare, great emphasis on democracy and human rights, economic interdependence, and gradual acceptance of universal ideologies, it became fashionable to speak of the demise of ethnic and nationalist movement (Yilmaz, 2007).

Despite expectations to the contrary, however, a fresh cycle of ethno-political movements has re-emerged in Eastern Europe (including the Balkans), Central Asia, Africa, and many other parts of the world. In fact, with the end of the Cold War, which increased international cooperation while decreasing the possibilities of inter-state wars, the main threat to peace does not come from major inter-state confrontations anymore, but from another source: intra-state conflicts, conflicts that occur within the borders of states? These conflicts have replaced the Cold War's ideological clashes as the principal sources of current conflicts (Ibid).

Sometimes ethnic conflicts result from the collapse of state authority. Just as serious ethnic conflicts may lead to the collapse of the state, the collapse, by itself, may give rise to inter-ethnic conflicts. The reason for this is that the state, especially the modern state, has many positive functions in terms of sustaining social peace, and, with its collapse, serious problems inevitably arise (*Ibid*).

To be more specific, state collapse causes local anarchy in which individuals and groups find themselves in a state of serious insecurity. In the absence of a central authority, security is inevitably subjectively pursued, and social conflicts occur out of it. Group solidarity usually increases in the absence of a central authority as individuals try to get a sense of security by clinging more to their group. Increasing in-group solidarity, in turn, exacerbates an ethnocentric behavior, that is extreme in-group favouritism and discrimination against out-groups, a social-psychological component of inter-group tension, if not conflict. Further, the collapse of a state result in a power struggle for governance among different ethnic groups (*Ibid*).

The above discussion suggests civil war is marked by three widely recurring features. It (1) reveals the existence of rivals to the dominant coalition; (2) increases the salience of violence for contestation and rule maintenance; and (3) redraws social and spatial zones of control, with far-reaching implications for strategies of rule maintenance and access to resources. These three recurrent features are likely to affect the two dimensions of the state: the political

settlement and its institutional expression (Rogers, 2016).

Political settlements are defined by the UK Department for International Development (DFID) as “the forging of a common understanding, usually between political elites, that their best interests or beliefs are served through acquiescence to a framework for administering political power” (Di John and Putzel, 2009).

According to Parks and Cole the fundamental insight of the political settlement’s framework is that governance, stability, and the quality and pace of development are viewed as the outcome of struggles and ensuing arrangements among powerful elites. These struggles largely involve informal processes of conflict, negotiation, and compromise. As elite factions seek to secure access and control over sources of wealth and power or advance a particular ideology or national vision, they will often come into conflict with each other. "Political settlement" is a descriptive term that characterizes the nature of the arrangements among these elites to manage this conflict (Cole, 2010).

This approach stresses that any political order is based on an agreement between groups with access to violence; particularly those that could bring down the existing order were they to revolt. Together, these groups, whose alliance is at the heart of state power, are the dominant coalition. Although often stable for long periods, any political settlement is subject to recurrent renegotiation, in which external shocks or gradually accruing changes in bargaining power can lead to (sudden) shifts in the settlement (Rogers, 2016).

Usually, liberal democracies provide many structural mechanisms preventing, at least, legal discrimination and easing identity expression. For example, in most liberal democracies, minority rights are protected by law. Different ethnic groups have a space to exercise their group identities, and social problems can find democratic channels to express themselves. Equally or more importantly, the distribution of political power can be shaped or re-shaped through political elections. Therefore, issues concerning ethnic groups can be peacefully dealt with in liberal democracies before they escalate to large-scale conflicts (Yilmaz, 2007). But Where the state maintains factional politics "Quite frequently, democratic governments are themselves the source of state fragility when they are ineffective because of paralysis, deadlock or corruption among the democratic parties or leaders” (Lund,2009).

On the other hand, in authoritarian, totalitarian, and other non-democratically constituted states, the absence or weakness of systemic mechanisms that can alleviate social tension may easily escalate ethnic issues to the point of violent conflict. In such regimes, dominant group privileges are usually supported by local law and popular culture perpetuating discrimination and repression at the political level, as well as at the societal level (Yilmaz, 2007).

But before a country can have a democratic state, it must first have a state—a set of political institutions that exercise authority over a territory, make and execute policies, extract and distribute revenue, produce public goods, and maintain order by wielding an effective monopoly over the means of violence (Diamond, 2006). As noted by Samuel P. Huntington, "The most important political distinction among countries concerns, not their form of government but their degree of government” (Huntington, 1968*).*

Democracy cannot be viable (and neither can it really be meaningful) in a context where violence or the threat of violence is pervasive and suffuses the political calculations and fears of groups and individuals. It is possible to implement peace without democracy, but it is not possible to build democracy without peace (and in fact, peace will be better and deeper with democracy). One thing must be stressed above all others: no order, no democracy (*Ibid*).

Looking at this reality of developing countries, while democracy may be a desirable long-term goal, the process of democratization in poor, fractious societies is inherently destabilizing. The risks of premature democratization, therefore, outweigh the potential benefits. Autocracies can better ensure stability in what are often volatile environments. Developing countries are typically highly fractious. Only the iron fist of an authoritarian government can hold the disparate camps together. Democratic transitions initiated in such contexts are likely to be polarizing – sharpening ethnic, economic, geographic, or religious tensions – and increasing the risk of conflict and radicalization. While democracy may be a desirable long-term goal, it is the process of getting there that is problematic. The concern that political competition can accentuate fissures in a society leading to civil strife is reasonable. One need not think too hard to envision opportunistic politicians playing up ethnic cleavages for short-term political gain, only to have the situation spiral out of control (Siegle, 2006).

As quoted by Niccolo Machiavelli: The chief foundation of all states, whether new, old or mixed are good laws and good arms. There cannot be good laws where there are no good arms and where there are goods arms there must be good laws (Ojo*,2015).*

Many weak states may conduct political processes that are democratic, but any progress toward consolidation of democracy is impeded by the problem of weak statehood. A successful process of democratization requires that these countries develop more "stateless, "that is, become stronger states. "Stateless" is a precondition for a successful process of democratization, prospects for democratic transition deteriorate when it is lacking (Sorensen, 2008).

Strengthening states prone to failure before they fail is a prudent policy and contributes significantly to world order and to minimizing combat, casualties, refugees, and displaced persons. Doing so is far less expensive than reconstructing states after failure. Strengthening weak states also has the potential to eliminate the authority and power vacuums within which terror thrives (Rotberg, 2002).

Institution building and democratization are separate processes, and their implementation should not be conflated. State building can occur in democratic and nondemocratic states, which exemplifies the distinction between practices. The best way to understand institution-building and democratization is to keep the two areas separated and analyze both as separate entities to better understand and how the two interact. It is important to realize that states can be authoritarian and institutionalized (Rebecca 2014). This being as it may what does the past experiences of developed and democratic countries tell us? In United States a bitter agonizing war was fought between the North and the South wanting to break away from the United States. (Ojo*,2015).*

Cementing the centrality of powerful government and strong army Hollander (1997) argues that during the seventh century, Europe embraced strong government as a reaction to the political breakdown that had beset them during the last hundred years without thinking of themselves as a part of a continuing long trend toward powerful rulers.

In all these, the pervasive role of the military/ force is noticeable. This has given credence to the postulation that force makes nations (Ojo*,2015).* The need for military force in the process of state-building is undeniable. The

question is how much at which time? Emmanuel Ojo has the answer for this.

Table 1: Varying Role(s) of Force at Stages of the Political Evolution of States (Ojo, 2015:12)

Stages of the evolution of states	Varying role(s) of force
State formation, consolidation, and maintenance	Maximum
Creating political order, institutions, and political leadership	Average
Nation-building, national integration, and creating a community	Minimal

From the above table, we can draw a simple lesson that with a varying stage of evolution of state-building, the degree of using force also varies. Despite their complexity in terms of both internal and external dynamics discussed above, in practice, states attempt to "resolve" intra-state conflicts using force to a large extent (Yilmaz, 2007). It must be admitted that sometimes a certain degree of force is an integral part of the overall conflict resolution process in intra-state conflicts (Ibid). However, conflict resolution is also done based on non-coercive measures, which implies that the use of the military should be balanced and integrated with other instruments of power (Oliveira, 2016).

There is no doubt that democracy is a desirable objective of any country but it cannot be achieved without preconditions. This research has found out that at the early stages of economic and political development, democracy has negative consequences if it is not limited. Accordingly, some elements of autocracy mixed with some features of democracy would bring a positive outcome.

This research found out what possible advantages developing countries can get from these alternative regime types, democracy, and autocracy instead of comparing each independently to select just one of them. Though research done so far has not reached a conclusive answer to make a choice from democracy or autocracy for development, it would create a visible gap and becomes unfair to just pick one when there are known opportunities in each of them. So, this article is new in attempting to mix democracy and autocracy to give remedy for problems of developing countries.

Conclusion

Assessing democracy and autocracy one finds strong and weak sides of each of them. Applying only one political system to all countries would be erroneous as countries have diverse experiences, institutions, history, culture, resources, and external influence. As the saying goes one size is not fit to all. Regime type is a function of time and the level of development.

It would not be wrong to conclude that depending on internal socio-economic and political development and level of external influence countries apply what is fit to them. Given the advanced socio-economic and political development attained by developed countries, it is appropriate to be democratic, but it is counterproductive for developing countries without any check. Democracy among others requires strong institutions, educated people, and economic growth. As developing countries have not attained all these democratic exercises cannot be achieved overnight. This does not mean that democracy has no role altogether.

Developing countries cannot deny the relevance of fruits of democracy which includes election, accountability and transparency, freedom of speech and assembly, property right, and many other individuals and group rights but democracy alone cannot solve problems in developing countries. The Western world has passed a difficult time to reach today's level of socio-economic and political development. It may be from devotion to generously help developing countries or deliberately impede development they advocate democracy. But their experience does not tell that at the early stages of their development they started from democracy. Everything must be context sensitive. One political system cannot be always fit for all countries. What is important is to set a universal goal than universal means. All countries at some point in time converge on values of democracy and human rights. But given differences in resources, institutions, history, and external influence the way they take cannot be one and the same. Taking the conditions in which developing countries are in dictates what political system to be applied. Both Democracy and Autocracy have their merits and demerits. Combining good features of both political systems brings best result for developing countries.

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Impacts of Public Transit on Economic Sustainability: A Case of Addis Ababa Light Rail Transit, Ethiopia

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Abstract

Sustainability of urban public transits is widely accepted but, there are diversified opinions and debates regarding modes of public transit. It is an unanswered whether road-based or rail-based public transport is more sustainable for rapidly growing cities like Addis Ababa. This study is done to empirically evaluate the economic sustainability impacts by Addis Ababa light rail transit (AA-LRT) using performance indicators like travel time, travel cost and employment generation. Likely, it investigates whether AA-LRT is more economically sustainable or not, compared to other road-based public transits such as City-buses and Midi-buses and compared to the situation before the start of AA- LRT operation. Samples for onboard surveys were selected from transit users and experts through proportional quota sampling. Empirical quasi experiment, multi-criteria analysis and comparative impact analysis approaches were used together with Paired-samples t-test, One way ANOVA, Ordinal and Logistic Regression. Findings indicate AA-LRT is really producing economic benefits such as travel time savings and affordable travel costs since 2015. Benefits are found to be more economically sustainable in AA-LRT than other road-based public transits. Furthermore, travel time and travel cost benefits in the post-AA-LRT period are better than situations before the start of AA-LRT in 2015. Thus, AA-LRT makes a more significant contribution to economic sustainability. However, it has little weaknesses like inadequate crossing facilities, overcrowded and delayed trips, troubled transfer, fare, and ticket system. To enhance the economic sustainability and address shortcomings, new designs like overhead crossings; expansion of rail network coverage; increasing number of trains and speed; integration among transits; implementation of flat fare and improving ticket system are recommended.

Keywords: Comparative approach; Economic sustainability; Light Rail Transit; Travel-cost analysis; Travel-time analysis

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Background and Introduction

According to Barrella (2012) and Knowle and Ferbrache (2016) many types of research are done on urban transport mainly on improving the ability of transport investment to progress economic growth. Economic sustainability assessment is essential because it provides an enabling environment for investment to meet its purposes and maintains the system (Phil et al. 2003, Litman, 2005a & 2015). The number of studies that evaluate the sustainability of urban transit projects using indicators are growing and gaining greater support in recent decades. Particularly economic sustainability assessment models often include various dimensions and indicators (Dhingra, 2011 & World Bank [WB], 2012).

Although opinions regarding light rail transit (LRT) are diversified with arguments in favor and against this mode, several countries of the world have initiated or expanded light rail transit services in the last 15 years. Compared with road-based transits, urban rail-based transits mainly LRT systems provide a variety of economic and transportation benefits (Bhatta, & Drennan, 2003; Gleave, 2005; Mahmud, Hoque & Bashir, 2000). International Association of Public Transport, UITP (2006) and Kenworthy (2006) indicated that in many cities, where a car is the dominant mode of transport, the major transport problems are higher journey duration and cost. Due to the growing population and transport demand in various cities of developing regions like the city of Addis Ababa, the primary focus of urban and transport planning is towards road-based transport. The dominant transits are City-buses, Midi-buses, and Mini-buses (Federal Democratic Republic of Ethiopia [FDRE], 2011; Mohapatra, 2015).

In the city, there is a high dependency on walking and private vehicles for daily trips, but the overall supply of transport services is still lagging the actual demand. This situation resulted in severe transport and related economic problems such as traffic congestion, longer travel time and higher travel cost. As a response, a new urban light rail transit project which is named Addis Ababa light rail transit (AA-LRT) has started its operation of passenger service in the densely populated corridors since 2015 (Henok, 2018). AA-LRT service is planned and expected to produce transport and economic sustainability benefits and to be a more attractive transit option (Mohapatra, 2015 & United Nations Economic Commission for Africa [ECA], 2017).

As this project is new and unique mainly in Sub-Saharan Africa little is studied and known about its operation and performance. It is, therefore, desirable to study the impacts of AA-LRT and its contribution and progress towards economic sustainability. To what extent this AA-LRT is economically sustainable vis-à-vis the situation in pre-AA-LRT period as well as other on-road public transits is not clear. Thus, it was these questions and research gaps that motivated the author to undertake this study. The author's motivation has also come from a question in the city about how much of the economic benefits were more attributable to AA-LRT. The impact of AA-LRT is examined only from the perspective of economic sustainability using defined performance indicators or parameters such as travel time, travel cost, employment, and business enhancement. The author believed that the current knowledge gap about the economic sustainability of urban public transits needs to be bridged using advanced analysis tools such as multi-criteria analysis, comparative approaches, empirical experiments and using information from service user's perspective.

Therefore, the results of this study could help to fill the research gap and contribute to the existing body of knowledge about the economic sustainability of public transits mainly AA-LRT. As this AA-LRT project services are continuing and findings of this study stem from the latest analysis completed in late 2020, it will raise understanding and encourage dialogue on approaches of evaluating economic sustainability of urban transits.

Material and Methods

Study Area

To complete this study, it was important to identify the site where the research work could be undertaken. This study manipulated the research setting to obtain knowledge about the operation of AA- LRT and other transits from 2015 to 2019 in their naturally occurring states. By considering data availability, AA-LRT phase-I which started operation since Sept. 2015 in Addis Ababa city, capital of Ethiopia, seemed to be an ideal site for this research. Particular sites or traffic analysis zones (TAZ) include the rail stations along the East to West line mainly from 'Ayat' station up to 'Torhayloch' station as well as adjoining roads and urban settlements where survey and quasi-experiments are done.

Mixed Research and Impact Evaluation Approaches

A mixed research method was an ideal technique to conduct this research and provide empirical and more conclusive evidence using various approaches than a single research approach could. Considering the research questions which require both quantitative and qualitative evidence, a sequential strategy of a mixed method was specifically suitable to obtain different but complementary data on the topic and best understand the impacts on travel time and cost.

First, the author conducted a transport survey and quasi-experiments to empirically test travel time and travel cost of the four transit

modes to collect quantitative evidence. As the second phase, detailed discussion and interviews were made with the selected transit users and experts for qualitative evidence.

Comparative and Impact Evaluation Approaches

Economic impacts can be evaluated through quantification, assignment of values to outcome variables, and comparative approaches. The economic sustainability impacts of AA-LRT project were compared with a scenario that would have existed had this project not been undertaken i.e. before 2015. To this end, temporal comparison techniques were applied using pre and post-AA-LRT scenarios (i.e. before and after 2015) and Multi-criteria Evaluation (MCE) such as travel time saving, travel cost affordability. Besides, a spatial and inter-modal comparison were done on the contemporary performance of four public transit modes (as independent groups) such as AA-LRT, City-buses, Midi-buses, and Mini-buses on the above outcome variables.

The methodology of this study properly considers a large amount of uncertainty and subjective judgments which are commonly included in such evaluation approach through expert consultation. Moreover, this study was done based on key elements of theory of change (ToC) that could be used as basis for impact evaluation such as progress, achievement or failure and efficacy to promote social change. Much of the evidence came from case studies and econometric models such as Diff-in-diff to analyze the impacts of the four transit modes and Pre/post impact evaluation. Generally, this comparative approach could help to adequately determine and compare relative economic sustainability performance and differential impact analysis of each transit.

Sampling, Data Types and Sources

For primary data onboard survey was done on 290 samples that were selected through proportional quota and accidental sampling from service users or passengers of public transits only from one LRT line i.e., “Ayat” to” Torhayloch” using a formula with a 95% confidence level. Expert sampling technique was also used to select experts in the area. The study also used secondary data collected through careful document review. Finally, analyses were done using 271 respondents or 93 percent of response rate.

Multi-modal Travel Time Variability Quasi-Experiment

A corridor-level day-to-day repeated measurement approach on total travel time performance of four public transit modes mainly AA-LRT, City-buses, Midi-buses, and Mini-buses were done to characterize and compare these four transit modes in terms of their relative length of total travel time. This empirical analysis could help to determine which transit mode is contributing most for the shortest and longest total travel time of the passengers.

A quasi experiment of travel time and collection of primary data was conducted on sites or TAZ in the AA-LRT corridor from ‘Ayat’ to ‘Torhayloch’ station and adjoining road highway mainly ‘Ayat’, ‘Megenagna’, ‘Mexico’ and ‘Torhayloch’ stations. Accordingly, the author could measure a total of 48 travel time in minutes from each mode and record data by making actual travel by these four modes. These total travel time measurements include three components such as walking time, waiting time and in-vehicle journey time in minutes on both peak hours (7:00 AM-9:00 AM and 5:00 PM-7:00 PM) and off-peak hours (11:00 AM-3:00 PM). Evaluation and comparison of these public transit modes in terms of their total travel time was made by considering the same conditions/factors for all such as the same route, direction, distance, and time period of the day and using average global travel time range, which averages around 70 minutes per person per day (Hitge & Vanderschuren, 2015; Metz, 2008).

The significance of the mean difference between each transit mode in terms of their total travel time was analyzed and compared using a One-Way ANOVA test. Additionally, comparison to some stated objectives, design, and capacity for anticipated performance of AA-LRT was also employed such as the speed of 70km/hr, waiting time or service frequency of 6 minutes for AA-LRT. This comparison approach was used to evaluate and compare the targeted AA-LRT service benefits with the delivered service benefits. In general, four levels of service or LOS (see Appendix-A) have been employed in order to measure performance benchmark of these transits i.e., Los 1, Los 2, Los 3 and Los 4 in which Los 1 is the highest Los and Los 4 is the lowest one (Dhingra, 2011).

Multi-modal Travel Cost Variability Quasi-Experiment

Another experiment of travel cost and collection of primary data was conducted on sites which are indicated the above experiment such as the AA-LRT corridor from ‘Ayat’ to ‘Torhayloch’ station and adjoining road highway. Accordingly, the author could measure a total of 48 travel cost tests from each mode and record data by making an actual journey by those four modes during both peak hours and off- peak hours.

Just like travel time experiment the evaluation and comparison of these public transit modes in terms of total travel cost or expenditure in Ethiopian Birr (ETB) was made by considering the same conditions or factors for all like the same corridor, route, direction, distance and time period of the day for more valid and reliable measurement. Finally, the significance of mean fare difference and affordability between transit modes were analyzed using One Way ANOVA test.

Operationalization and Measurement of Variables and Indicators

As shown in Table below, variables or parameters which are applicable for developing region (Dhingra, 2011) were used to measure economic sustainability, performance, and impact of public transits.

Data Analysis Methods and Tools

A paired sample t-test was used to test hypotheses and analyze the significance of travel time and travel cost mean differences between pre- and post-AA-LRT scenarios. The hypothesis regarding the significance of mean differences among the four public transits for variables such as travel time and travel cost saving were also analyzed using One way ANOVA. Ordinal regression and multinomial logistic regression models were jointly utilized to analyze and look at how much variance predictor variables (trips by four transit modes) explain in the outcome variable (Benefit level) using nominal and ordinal data. So, the researcher wanted to see how much variance is explained in the “benefit level” by those transit modes.

In addition, interviews and discussions were transcribed and thematic analysis was performed including coding of qualitative data before identifying and reviewing key themes. Each theme was analyzed to find an understanding of participants’ opinions and insights regarding the contributions of the AA-LRT on the travel time, cost, and employment enhancements.

Results

The findings regarding economic sustainability effects produced by AA-LRT operation are presented as follows:

Table 1: Operationalization Frameworks for Variables, Indicators, and Measurements

S/N	Parameters	Issues to be addressed	Indicators
1	Total travel time saving	How long the transit takes from origin to destination? Travel time in comparison to other modes; How well does the transit follow planned schedules? How affordable is it using a public transit mode?	How many minutes spent on the same trip distance in pre and post LRT periods? How long is walking, waiting and in-vehicle time? Commuting time of 1 to 1.2 hours per day is used as a standard or threshold.
2	Affordability of travel cost	How easy is it to access tickets and pay to use the mode?	The proportion of travel fares as shares of monthly income. Travel expenditure below 15% is used as a standard or threshold. Fares in comparison to other modes; and number & location of ticket shops.

Source: Adapted from developing sustainability transportation performance measures for TXDOT's Strategic Plan: Technical Report (Ramani et al., 2009)

How AA-LRT Service has Produced Economic Effects

According to the ordinal and multinomial logistic regression output indicated in Table

Table 2: Transit Modal Choices and Shares: using Friedman ANOVA and Cochran Q test

Which one is frequently used?	Value		Test Statistics		Mean Rank
	0 (No)	1 (Yes)			
AA-LRT	40	231	N	271	3.32
City-bus	174	97	Cochran's Q or Chi-Square	225.98[a]	2.33
Midi-bus	186	85	df	3	2.25
Minibus	206	65	Asymp. Sig.	.000	2.10
Total	606	478			

N.B: here, Total is beyond the sample size because of multiple responses by each respondent.
Source: Computed using survey data, (2020).

A Cochran Q and Friedman ANOVA test on

Table 2 indicated that the null hypothesis is rejected and the median of differences among these four modal shares is statistically significant, Chi-Square =225.98a, p<.001, two-tailed. Thus, the majority or 231 (85 percent) of respondents ranked AA-LRT as the first or most frequently used mode of all. On the other hand, City-bus, Midi-bus, and Mini-bus are the 2nd, 3rd, and 4th frequently used modes respectively.

3, how much variance independent variables explained in that dependent variable was the major focus area. This could help to determine which transit mode is the independent variable with the highest impact on "high-level trip benefit" in the Post-AA-LRT period as the outcome variable. The statistical results of Parameter Estimates indicate there are statistically significant differences among the four transit modes as explanatory variables in their influence on

outcome variable (i.e., high level of trip benefit), p<.001. The amount of variance score (or Estimate) for AA-LRT, City-bus, Midi-bus, and Mini-bus is -1.32, 1.08, 1.29 and 2.22 respectively.

Table 3: Ordinal Regression and Multinomial Logistic Model

Parameter Estimates

	Estimate	Std. Error	Wald	df	Sig.
[AALRT=0]	-1.32	.34	14.91	1	.000
[AALRT=1]	0[a]	.	.	0	.
[CityBus=0]	1.08	.27	15.71	1	.000
[CityBus=1]	0[a]	.	.	0	.
[MidiBus=0]	1.29	.27	22.27	1	.000
[MidiBus=1]	0[a]	.	.	0	.
[MiniBus=0]	2.22	.31	51.23	1	.000
[MiniBus=1]	0[a]	.	.	0	.

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

Source: Computed using survey data, (2020).

Additionally, as indicated in the Appendix-B, 52.9 percent of the change seen on the dependent variable is explained by the major independent variable.

Are Economic Effects More Sustainable in AA-LRT than Other Transit Modes and the Situation before AA-LRT Period?

To appraise the level of economic sustainability of AA-LRT vis-a-vis other public transit options and with the situation before the start of AA-LRT in 2015, a comparative analysis was used.

Travel Time Analysis Using Scenario of Pre Vs. Post-AA-LRT Period

Travel Time Analysis Using Scenario of Pre Vs. Post-AA-LRT Period

Table 4: Travel Time in Pre vs. Post-AA-LRT Period: Using Paired Samples T-Test (in minutes)

Paired Samples	Mean	Paired Differences			t	df	Sig.
		Mean	Interval of the Difference				
			Lower	Upper			
Pre-LRT travel time	64.87	35.15	34.06	36.24	63.57	270	.000
Post-LRT travel time	29.72						

Source: Computed using survey data, (2020).

In Table 4, Paired Samples T-Test indicated the mean difference between the length of

travel time before AA-LRT and after AA-LRT period has statistical significance. On average, participants showed that the length of total travel time before AA-LRT period (m=64.87 minutes) was higher than the length of travel time after the start of AA-LRT (m=29.72 minutes), t=63.57, p<.001, two-tailed.

Travel Time Analysis Using Multi-modal Travel Time Variability Experiment

Regarding the contemporary vehicle-to-vehicle total travel time variability experiment, Table 5 showed trip travel time of all four components (walking, waiting, in-vehicle and total time) for the four public transit modes within the same trip time, trip period, trip distance and direction. The total travel time for AA-LRT, City-bus, Midi-bus and Mini-bus is 69, 138, 132 and 126 minutes respectively. Waiting time for AA-LRT, City-bus, Midi-bus, and Mini-bus is also 20, 37, 42 and 50 minutes respectively. The shortest total travel time is attributed to AA-LRT. But, both the longest total travel time and higher travel time ratio (relative to AA-LRT) is attributed to City-bus followed by Midi-bus and Mini-bus within the same trip.

With regard to the magnitude of travel time variation among transit modes, the Coefficient of variation (CV) of travel time (i.e. a ratio of the Standard Deviation to the mean) is calculated to be 26 percent.

Table 5: Multi-Modal Total Travel Time Variability Experiment

Transit Mode	Origin – destination stations (17.3km)	Trip travel time (in a minute) Walking	Waiting	In-vehicle	Total
AA-LRT	Ayat-Torhaylech	-	20	49	69
City-bus	Ayat-Megenagna-Mexico-Torhaylech	10	37	91	138
Midibus	Ayat-Mexico-Torhaylech	10	42	80	132
Minibus	Ayat-Megenagna-Mexico-Torhaylech	15	50	61	126

Source: Computed Using Survey Data, (2020).

In addition, one -way ANOVA test results in Table 6 showed that the null hypothesis is rejected which means the mean difference between the four public transit groups in their total travel time is statistically significant, F=2548.91, p<.001, two-tailed. When the mean difference (I-J) of all transits compared to each other, the mean total travel time of AA-LRT is smaller than City-buses, Midi-buses, and Mini-buses by 68.9, 62.8 and 57.0 minutes respectively.

Although, there are significant differences among these four modes, the mean travel time by AA-LRT has the greatest difference with the rest three modes. Mean travel time by AA-LRT is far shorter than City-bus, Midi-bus and Mini-bus by 68.8, 62.8 and 57 minutes respectively. This analysis shows that the shortest and longest total travel time is attributable to AA-LRT and City-buses respectively.

Table 6: Comparisons Between Transits in Their Total Travel Time Using Bonferroni Post Hoc Tests

Transit type (I)	Transit type (J)	Mean Difference (I-J)	Sig.	ANOVA df	F
AA-LRT	City-bus	-68.93*	.000	3	2548.91
	Midi-bus	-62.87*	.000		
	Mini-bus	-57.04*	.000		
City-bus	AA-LRT	68.93*	.000		
	Midi-bus	6.06*	.000		
	Mini-bus	11.89*	.000		
Midi-bus	AA-LRT	62.87*	.000		
	City-bus	-6.06*	.000		
	Mini-bus	5.83*	.000		
Mini-bus	AA-LRT	57.04*	.000		
	City-bus	-11.89*	.000		
	Midi-bus	-5.83*	.000		

*. The mean difference is significant at the 0.05 level.
Source: Computed using survey data, (2020).

Affordability of Travel Cost in the Pre and Post AA-LRT Period: Paired Samples T-Test

In Table 7, Paired Samples T-Test indicates that the null hypothesis is rejected and the mean difference between the percentage of monthly travel cost per income in Pre AA-LRT and Post AA-LRT period has statistical significance. On average, participants showed that proportion of monthly travel cost per income in Pre-AALRT period (m=22.17 percent) is higher than Post AA-LRT period (m=12.94 percent), t=27.89, p<.001, two-tailed.

Table 7: The proportion of Monthly Travel Cost per Income in Pre AA-LRT vs Post-AA-LRT Period Using Paired Samples T-Test

Paired Samples	Mean	Paired Differences Mean	Interval of the Difference Lower	Upper	t	df	Sig.
% of monthly travel cost per income in Pre AA-LRT	22.17	9.22	8.57	9.88	27.89	270	.000
% of monthly travel cost per income in Post AA-LRT	12.94						

Source: Computed Using Survey Data, (2020).

Although, there are significant mean travel cost differences for the same trips by these four modes, the mean travel cost by AA-LRT has the greatest difference with the rest three modes (Table-8). Mean travel cost by AA-LRT is by far smaller than City-bus, Midi-bus and Mini-bus by 3, 4.50 and 9.70 ETB respectively. Findings also show that the mean travel cost of Mini-bus is larger than AA-LRT, City-bus, and Midi-bus by 9.7, 6.7 and 5.2 ETB respectively. The mean total travel cost by AA-LRT, City-buses, Midi-buses, and Mini-buses is 6, 9, 10.5 and 15.7 ETB respectively with increasing rate. Thus, findings show the smallest and largest travel cost for the same trip in the corridor is attributable to AA-LRT and Mini-buses, respectively.

Shortcomings of AA-LRT Operation

Regarding shortcomings, results indicate that AA-LRT operation has produced certain weaknesses such as excessive and inconvenient ground-level crossings; disintegration among transits for transfer

Table 8: Multiple Comparisons between Transits in their Travel Fare using Bonferroni Post Hoc Tests

Transit type (I)	Transit type (J)	Mean Difference (I-J)	Sig.	ANOVA df	F
AA-LRT	City-bus	-3.00*	.000	3	268.44
	Midi-bus	-4.50*	.000		
	Mini-bus	-9.70*	.000		
City-bus	AA-LRT	3.00*	.000		
	Midi-bus	-1.50*	.000		
	Mini-bus	-6.70*	.000		
Midi-bus	AA-LRT	4.50*	.000		
	City-bus	1.50*	.000		
	Mini-bus	-5.20*	.000		
Mini-bus	AA-LRT	9.70*	.000		
	City-bus	6.70*	.000		
	Midi-bus	5.20*	.000		

*. The mean difference is significant at the 0.05 level.
Source: Computed using survey data, (2020).

options; distance-based fare and troubled ticket procedures; and overloaded trips mainly in peak hours.

Discussions

The results regarding the direct and indirect economic sustainability effects produced by the operation of AA-LRT are discussed as follows.

The Typical Transit Modal Choice, Usage and Share of Passengers

Bhatta and Drennan (2003) and Gleave (2005) indicated that nowadays all over the world urban planners and policymakers are seeking out more sustainable modes of transport because of an interest in high-density urban development as well as continuing concerns like traffic congestion, travel time, travel cost, and accident. In general, shift from road-based transport into more sustainable transport has resulted in an emphasis on the economic opportunities offered through mass transit, principally light rail (Kenworthy, 2006; Litman & Felix, 2002; Steg & Gifford, 2005).

Likely from the findings of this study, it is possible to understand that AA-LRT is a dominant transit mode which is giving passenger service to the people. People selected AA-LRT passenger service with the highest modal share and as their most frequently used transit mode for the daily trip.

Similarly, this study showed that people are shifting their transit modal choice from motorized modes into light rail transit for daily trips. For example, the current use of AA-LRT service by 86.2% of the respondents is an indication that most of the people are shifting their modal choice. As it is expected or planned, AA-LRT is playing the greatest role in enhancing public transit use and helping the people to shift their daily modal choice by attracting people who were using motorized vehicles such as city buses, midi-buses, and mini-buses. This new LRT service is really becoming a response and better option to tackle the transport-related problems in the city.

How AA-LRT Produced Economic Sustainability Effects

From the findings of an ordinal regression model, it is clearly shown that the amount of variance score for AA-LRT is the lowest of all transit modes and the change on outcome variable going up one level from Mini-bus and others into AA-LRT. Therefore, it is

possible to conclude that AA-LRT service is producing higher levels trip benefits than other modes of public transit including city-bus, midi-bus, and mini-bus. AA-LRT is also responsible for the higher level of influence (about 53 percent) and changes created on the dependent variable (high level trip benefit) than the three public transit modes. In general, AA-LRT is producing a higher level of economic sustainability benefits such as lower travel time & travel cost and higher employment opportunities than City-bus, Midi-bus, and Mini-bus in the city.

Are Economic Effects More Sustainable in AA-LRT than Other Transit Modes?

Travel Time in the Pre and Post AA-LRT Period

Several studies indicated that the time costs of travel using road-based motorized modes are excessive. It is also pointed out that mass transit such as light rail has the capacity to provide several advantages to travelers and community such as the difference in travel time decrease, lower street congestion and need for fewer automobiles (Dhingara, 2011; Hitge & Vanderschuren, 2015; Metz, 2008). Moreover, studies indicated that mass transit mainly urban LRT in a standard commuting situation is enhanced by the belief that it provides travel service with shorter average travel time than vehicles (Prashker & Avineri, 2005; Wang & Loo, 2018).

Similarly, the findings of this study show that there was more excessive travel time and cost for the daily trips of passengers in the Pre-AA-LRT period than the Post-AA-LRT period. For example, for a single trip from "Ayat" to "Mexico area" station, travelers consume more than an average of 65 minutes before the start of AA-LRT whereas after the start of AA-LRT they consume an average of only 29 minutes for the same trip. As length of travel time becomes shorter in Post AA-LRT period, AA-LRT is more sustainable than other modes because it could reduce the length of travel time from 65 minutes into 29 minutes by almost 100 percent for the same trip distance and time.

Multi-modal Travel Time Variability Experiment

Rodrigue, et al. (2017) indicated that total commuting times of 1 to 1.2 hours spent per day is a standard for normal commuting, which indicates the sustainability of public transits in terms of savings of time. Likely, findings of this study indicate that the total travel time by AA-LRT is shorter than other transits and fits the commonly accepted standard of commuting time. This means that commuting in the corridor has gradually shifted to faster transit mode and as a result, greater distances can be traveled using the same amount of time by AA-LRT.

The inter-modal travel time experiment and comparison show that total travel time by City-bus ranges up to 97% (almost double) higher than that of AA-LRT. Total travel time by Midi-bus and Mini-bus also ranges up to 93% and 87% higher than that of AA-LRT respectively due to poor road infrastructure and higher traffic congestion.

Besides, travel time ratio or proportions of travel time of each mode in relation to AA-LRT is beyond a widely accepted threshold level of 1.5 (Kieu, Bhaskar & Chung, 2013) which shows that there is a variation of total travel time among these modes. City-bus has the highest travel time ratio of all. Regarding the magnitude of travel time variation among transit modes, the calculated 26 percent of the coefficient of variation (CV) of travel time is found to be beyond a widely accepted maximum threshold level of 10% difference. This higher CV level indicated that the magnitude of total travel time differences mainly in-vehicle travel time and waiting time among the four modes is larger.

As per standards of levels of service (LOS) indicated in Appendix-A, the length of waiting time for these four modes is

calculated to be LoS4 which is far beyond the widely used average waiting time standards or threshold levels of 10-12 minutes. This means all the three motorized transits have a non-existent or poorly organized passenger service. However, the 20 minutes waiting time for AA-LRT is found to be in a situation that may require considerable improvements in terms of supply of vehicles, coaches, coverage, frequency of service and comfort. The total travel time by the three on-road transit modes is far beyond the global standard of 70 minutes per person per day. Whereas total travel time by AA-LRT (about 69 minutes) is slightly below this global threshold range by 1 minute which makes it a relatively better transit option than the other three public transits.

Hitge and Vanderschuren (2015) indicated that the superiority of the public transit system is due to their competitiveness and sustainability nature mainly through relatively shorter travel time. Likely, findings show that the key focus areas of mainly on-road public transit projects and AA-LRT to some extent should be on the reduction of travel time (mainly waiting and in-vehicle time), relative to AA-LRT and in real terms moving closer to the global average. These data clearly showed that the three on-road public transit modes are not competitive with AA-LRT on a variety of fronts. Firstly, their walking and waiting time are longer than that of AA-LRT. Secondly, the in-vehicle speed of the AA-LRT is higher than on-road public transits and trip by the AA-LRT is not subjected to traffic congestion.

The actual total travel and waiting time of AA-LRT was also evaluated and compared against its targeted or intended one (i.e., speed of 60km per hour and 6 minutes of waiting time or service frequency). Despite its relatively shortest traveling time, it is possible to understand that the existing total travel time of 69 minutes and waiting time of 20 minutes are far beyond the planned one. This actual trip frequency rate or waiting time of AA-LRT is three times greater than its initial plan or design of headway (i.e., 6 minutes). Unless urgent measures are taken, this problem has its own implication to the creation of serious problems on AA-LRT performance and full benefits of service users.

Even if AA-LRT is unanimously seen by most of the respondents as the better way to travel long distances quickly and cheaply than others, the crowd at rush hours and the disorganized waiting time discourages other passengers. It is too complicated, there are too many people in the morning and evening at stations and no one knows when it will arrive. Lack of trains and longer waiting times in rush hours negatively affect passengers and other public transit modes including minibus, which additionally take advantage of these busy times to increase their prices, to the point that some people opt to walk long distances in the end. Although the average travel time by AA-LRT is relatively the shortest, the length of its waiting time and slow speed of in-vehicle journey poses an area for significant improvement.

Most of the interviews also confirm that due to traffic jams and longer travel time by Midi-bus, Mini-bus and City-bus; private and public institution employees could not reach on time on workplaces. These longer trips are also more crowded, sophisticated, unsafe and with no seats mainly during peak hours. For example, according to data obtained from manager of Blen Private Mini-bus Taxi Association (2018) due to an increased number of road vehicles and road congestion, the length of travel time from 'Stadium area' up to 'Ayat station' reaches about 3hours by those motorized public transits mainly during peak hours. In addition, when larger numbers of people made a shift from those motorized transit modes to AA-LRT since 2015, an estimated large amount of money could be saved on

vehicle operating costs and fuel importation every year. Consequently, with a smaller number of vehicles on the road, there could also be a smaller number of road traffic accidents and related further economic savings.

In general, by considering these huge savings of travel time it is simple to conclude that AA-LRT is more economically sustainable than other transit modes. Passengers' travel time savings could also bring additional economic benefits to AA-LRT users because time really is money.

Affordability of Travel Cost in the Pre and Post AA-LRT Period

Affordability implies the financial capacity to pay for the ability to reach destinations for everyday needs such as work and education without excessive economic hardships. The economic sustainability of any public transport project is determined by an increase in travel cost affordability or lower cost of travel which is expended by service users per month and distance (Cervero, 2011). Zhong et al, (2003) showed that unlike the middle and higher-income people the poor in Thailand and Indonesia avoid using Mini-buses and other types of Para-transit except in emergencies and non-routine situations when they have no other alternative because they cannot afford the fares.

Surveys undertaken in several African cities indicated that households spend between 8 percent and 15 percent of their total monthly expenditure to transport. On the contrary, certain extremely low-income community groups in many cities of developing countries spend more than 30 percent of their monthly income for similar travel by public transit (Paul & John, 2014).

Public transits in urban areas have different transport price rates and the affordability of travel cost is determined by considering the proportion of monthly household travel expenditure which is expected to be below 15 percent. Thus, a particular transit is said to be more affordable if the proportion is lower than 15 percent (Rodrigue, et al., 2017). Likely, as the findings indicate, the cost of transportation for the same daily trips in the corridor was higher before the start of AA-LRT than the Post-AA-LRT period (i.e. after 2015). Before the start of AA-LRT in 2015, people were spending an average of 22.17 percent of their monthly income which is beyond the commonly accepted standard of 15 percent. On the contrary, people nowadays in post-LRT period are spending 12.94 percent of their monthly income which fitted the global standard of 15 percent. As expected, AA-LRT brings about significant travel cost reductions (about 54%) in Post AA-LRT period.

Since the factors that determine travel cost rates and the government subsidies which are provided for both AA-LRT and City-buses are well considered in this study, the comparative transport prices shown by the travel cost experiment are reflective of the competitiveness of each transit option. The comparative travel cost experiment result shows that passengers spend the smallest amount of travel cost for trips by AA-LRT but the largest one for the same trips by Mini-buses in the corridor. It is AA-LRT service that shows statistically significant travel cost difference with the three transit options. Therefore, it is possible to infer that the affordability of travel fees is lower in all other on-road public transits than AA-LRT for the same trip distance, period and direction. AA-LRT is providing passenger service at more affordable price than other modes. This consequently helps families to save more amounts of their incomes and cover the costs of other needs such as education and health.

This investment in LRT has significant economic benefits for households, especially those with modest incomes. AA-LRT can play a key role in helping families manage the rising cost of petrol and other costs. As

these types of costs rise there is disproportionate impact on modest-income families, which have to expend ever-larger percentage of an already inadequate income of families on transport. Thus, for several households that cannot afford a vehicle, AA-LRT becomes almost the only affordable option for all time in the area.

Since the primary purpose of transportation is to fulfill a demand for mobility of people, this lower travel cost is significantly contributing by fulfilling this demand and by increasing the mobility of passengers in the area in comparison with other public transits and the situation before the start of AA-LRT. Thus, for many passengers, the availability of affordable light rail services can be the difference and better choice.

Shortcomings of AA-LRT Service

In spite of the various economic sustainability benefits, AA-LRT service has produced certain problems for passengers and residents. Accordingly, the existence of excessive ground-level crossings is not only inconvenient with the existing land use patterns but also major causes of traffic congestion, slower speed and reliability of AA-LRT trips. In addition, overcrowded LRT journeys particularly during peak hours, lack of transfer options due to disintegration among public transits, distance-based travel charge system and troubled ticket procedures are also major weaknesses. Besides, some of these shortcomings are also consequences of planning and design problems. Consequently, these shortcomings produce problems on passengers, pedestrians and other modes in the corridor.

Conclusions and Recommendation

The positive economic impacts produced by AA-LRT services are obvious and understandable. AA-LRT system has generated direct, indirect, short term and long-term economic benefits to the passengers, people, and the city. From an economic sustainability perspective, the significant benefits are savings of travel time and associated congestion reduction, reduced travel costs or increased affordability of transport fares. This means fewer motorized public transits like City-buses, Midi-buses, and Mini-buses are crowding and congesting the major downtown roads of the city. However, this new and unique AA-LRT project is giving the city a faster, cheaper and more convenient transit system that can fit the Addis Ababa's wishes to come. There is no question that AA-LRT is the best answer to the serious, long-term, and multi-dimensional transport problems facing the city of Addis Ababa.

AA-LRT system is also a viable alternative to other modes of transportation such as City-buses, Midi-buses, and Mini-buses because of relatively higher-level benefits and convenience associated with it. Currently, for a variety of economic sustainability reasons AA-LRT is almost unanimously accepted as a better option for the people. It becomes a more convenient means for the city to accommodate the growing transport demands. The sustainability benefits of AA-LRT far outweigh the benefits provided by other motorized public transits in nearly every criterion used in this study such as affordability of fares and saving of travel time. It is generally compared with Maxi-buses, Midi-buses, and Mini-buses and then the overall benefits provided by AA-LRT are found to be more economically sustainable and suitable for the city. AA-LRT is by far the best way to move people of all income, sex, and age groups to and from the workplace. The savings of travel time and travel costs by AA-LRT are still by far the best compared to alternatives and even the situation before the start of AA-LRT. Due to these higher-level benefits, AA-LRT tends to bypass road traffics and attract more

ridership to make modal shift even among the car users and owners.

The advantages of AA-LRT operation outweigh the associated disadvantages and its shortcomings are also by far lower than the shortcomings of other transits. This is because; all of the economic benefits contribute to one of the core principles that guide the development of this light rail project i.e. economic sustainability. Accordingly, this study makes its own contribution to the existing body of knowledge and debates on modes of public transit in urban areas mainly between advocators of road-based versus rail-based public transit. It is important to note that, in many cases, the Author has concluded and agreed with those advocators of rail-based public transits mainly light rail. There is an agreement that light rail service has improved quality and choice of public transport and that system has been delivered much as planned.

Properly addressing the shortcomings of the AA-LRT are essential to maintain its sustainability benefits and address the transportation problems of the city at large. To this end, the Author has suggested solutions such as building alternative elevated crossings or overpasses by reducing the excessive ground-level crossings; expand the coverage of AA-LRT network and additional trains to cover more potential areas. Furthermore, plan modification and integration among transits for better transfer options and for improved travel and waiting time; and flat fare, modern ticket and control system are also suggested. Since this study did not include the project's cost-benefit analysis; it will be better for future research to focus on cost-benefit analysis for project profitability and cover environmental and social aspects.

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Graduate Unemployment and Its Duration: Evidence from Selected Cities of Oromia National Regional State

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Abstract

Generally, it is believed that higher education lowers the risk of unemployment. However, in developing countries including Ethiopia despite the expansion of higher education graduate unemployment has become a concern. It is threatening the stability and peace of the counties. Accordingly, the study had an objective of identifying determinants of graduate unemployment and its duration based on data collected from 600 graduates in selected towns of Oromia National Regional State. To analyze the data, logistic regression and Weibull regression were employed. The result from the logistic regression model identified that level of education, specialization, place of residence (town), and year of graduation significantly affect the employability of graduates. The findings from the Weibull regression for survival analysis also showed that level of education, specialization, year of graduation, and place of residence were important in determining the duration of graduate unemployment. The result further revealed that graduates of engineering had 33.5% less hazard rate compared to graduates of natural science. Similarly, the hazard rate of level I graduates was higher than that of the other levels of graduates. These results imply the need for considering employability when opening a program and inclusion of entrepreneurship in the curriculum to make graduates innovative and forward looking.

Key words: Graduate Unemployment, duration of unemployment, logit model, Weibull regression.

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Introduction

In recent years the government of Ethiopia has given due emphasis to higher education expansion to foster the development of the country (Broussard & Tekleselassie, 2012; Haile, 2003). It has expanded vocational and higher education training schools and universities. For example, it expanded the number of government universities that were two in 1996 to fifty in 2017. It has gone to the extent of letting the private sector to provide higher education. This coupled with expansion of private higher education is increasing the number of graduates year after year. For example, in 2015/16 there were 268,840 new graduates (MoE, 2016). However, this rapid expansion of higher education entirely focuses on the supply side without considering the demand side of the labor market. If there are no sufficient job opportunities for the growing graduates, erosion of confidence and motivation of the graduates is inevitable. Thus, if this situation is overlooked by the concerned body graduate unemployment may have a series of economic and social repercussion.

Graduate unemployment is a serious concern in developing counties on a number of grounds. First, countries already spend huge amount of resources on the graduates. This may turn out to be a lost investment, if ultimately the graduate is unemployed. Second, failing to address it may result in a serious social, economic, and political problems in the society. Being graduate but unemployed means a bad start in one's life. It leaves a scar that has a potential to have a destructive short-term and long-term impacts on the graduate (Haile, 2003; O'Higgins, 2001). Unemployment affects not only a person's economic wellbeing but also social and political participation and the economic inequality in the society at large. For instance, violence, dependence on

family, low self-esteem, poor social adaptation, depression and loss of confidence are some of the results of unemployment (Kabaklarli, Er, & Bulus, 2011). It may lead to poor mental health, corruption, drug addiction, crimes, and suicide in a society (Nazir,etal., 2009). It entails negative costs to the graduates, parents and to the public at large (Guarcello & Rosati, 2007; Haile, 2003). Third, if unemployment is prolonged it depreciates the skill and knowledge gained through education.

If graduate unemployment is not addressed, the graduates will remain as a risk factor for social and political instability in the country. Most of the unemployed graduates in urban areas of Ethiopia are first-time job seekers, and the average duration of unemployment period is more than a year (Serneels, 2007). In Ethiopia, the Oromia national regional state in particular, shares this problem of graduate unemployment. In recent years it has become common to see uprisings and social upheaval in the region. Among others graduate unemployment is the main cause of this uprising. In this research an effort has been made to identify the factors that lead to graduate unemployment and its duration in the region.

The paper is organized into six sections. Section two deals with problem statement. Section three describes the methodology used. The fourth section presents the result of the study. Section five discusses the results. The final section presents the conclusion.

Problem statement

For long there has been a strong belief that employability increases as the level of education increases (Becker, 2009; Schultz, 1960). This human capital theory views that investments in training and education by an individual determines a chance of getting employment after school (Becker, 2009; Berntson, Sverke, & Marklund, 2006). However, nowadays this theory is criticized because of high rate of graduate unemployment because this human capital theory was developed in a period of full employment during which individuals were certain about their employment after education. The possibilities of securing employment through education are hardly realizable and many young people remain home for an uncertain and a long period of time without getting jobs of their desire after a long-term schooling (Jeffrey, 2009). As a result in a number of developing countries including Ethiopian graduates are facing unemployment risk. Thus the problem has shifted from lack of skilled man power to graduates unemployment.

Massification of higher education and insufficient creation of adequate jobs are among the main causes of the rise in the unemployment rate of graduates (Jamoussi, Said, & Gassab, 2014). There is huge number of graduates entering in the labor market. However, the economy has no sufficient capacity to create job for the flocking graduates. There is also a poor return on investment in education in many developing countries because of various factors such as poor economic base which does not open a wider chance to the growing army of graduates, bad governance, the low standard of education, the training capacity, and unattractive economic policies that do not encourage individuals and firms to invest in training (Middleton, Adrian, & Arvil, 1993).As a result a number of graduates remain unemployed for long period of time. Again this prolonged unemployment is resulting depreciation and deterioration of the skills and knowledge individuals acquired through education (Gassab & Jamoussi, 2011).

Factors affecting graduate unemployment can be viewed from microeconomic and macroeconomic perspectives. The microeconomic level drivers of graduate unemployment among others include demographic characteristics of the graduates including sex, age, education level, and

individual location. For example, some studies have observed higher unemployment rates among individuals with at least a secondary school education, relative to the less educated, in developing countries (Aryeetey, Baah-Boateng, & Ackah, 2014; Baah-Boateng, 2014). Family background has also been observed as a determinant of graduate unemployment. Essentially, the education status or occupation of family members in the labor market can affect an individual's employment prospects, because of the professional networks that may arise from the jobs and acquaintances of family members (Zhang & Zhao, 2011). Graduate unemployment can also be explained from macroeconomic perspective, that is, the overall characteristics of the labor market in terms of the interaction between demand for and supply of graduates. The demand side refers to the ability of the economy to create jobs for various skill categories as per the requirement of the economy and the supply side refers labor force or skilled graduates. The tendency for most advertised jobs to require substantial work experience implies that most young graduate people are locked up in an 'experience trap' through limited opportunities for work experience.

So far there have been various studies focusing on unemployment in Ethiopia. Most of the studies focused on determinants of general youth unemployment (Broussard &Tekleselassie, 2012; Muhdin, 2016; Nganwa, Assefa, & Mbaka, 2015). They gave less attention to the determinants of graduate unemployment and its duration. Graduates employment is a challenging policy area for developing countries and little empirical evidence is available to inform policy makers. Therefore, this research fills this gap and provides empirical evidence to policy makers. This is helpful to evaluate the contribution of higher education training programs in addressing unemployment in the country. This may provide a new perspective for policy makers to unmask the effect of the current education system on employment in the country.

Therefore, this study was carried out to analyze determinants of graduate unemployment and its duration in selected towns of Oromia National Regional State. The emphasis was given to urban centers because like any other developing countries urban centers in Ethiopia are challenged by high rate of unemployment. This high rate of unemployment further is exacerbated by high rate of rural-to-urban migration. In Ethiopia, after completing a college or university education, rural graduates moves to urban centers to look for jobs that match their skills. This makes urban centers to have the high rate of graduate unemployment (Srinivasan, 2014). Thus, sample of graduates from private and government owned institutions from 2011/12 to2016/17and first-time job seekers were selected. Accordingly, this research was carried out to address the following twofold research questions: What are the major determinants of graduate unemployment in Oromia National Regional State? What are the factors that determine duration of graduate unemployment in Oromia National Regional State?

Materials and Methods

Introduction

Graduate in this study refers to individual who has academic certificate from TVETs, colleges, and universities of government or private institutions. Graduate unemployment refers to unemployment among graduates because of lack of the necessary qualification, field of study, high expectations, job search, and work experience (Oluwajodu, Blaauw, Greyling, & Kleynhans, 2015). In this particular study graduate unemployed refers to those individuals who were first time job seekers, looking for a job but unable to find a job after graduation.

Types and Source of Data

To achieve the objectives of the study primary data was used. The primary data was collected from graduates living in selected towns of Oromia region. The data was collected from those graduated between 2011/12 and 2016/17. These graduates could be employed or unemployed.

Sampling Techniques & Sample Size

Graduates may involve in both formal and informal sectors. They often concentrate in urban centers as they are the main areas of jobs for the majority of the graduates. In this particular study major urban centers particularly Sululta, Burayou, Sebeta, Bishoftu, and Adama were taken. From each urban center three sample kebeles were selected randomly. Again each kebele was classified into localities from which sample households and then graduates were selected randomly after getting the list of households.

To determine the sample size the following formula was used as the population size (N) or the total number of graduates from 2011/12 to 2016/17 (2004 to 2009E.C) was not exactly known and not exhaustively recorded. To determine the sample size we used Saunders etal. (2009) formula as follows:

$$n = \frac{z^2 * p\,(1-p)}{e^2} = = (1.96^2) * 0.25/.0016 = 600$$

Where:

n= the resulting sample size

z = the standard normal distribution of variable at specified confidence interval

p= the proportion of ; the variable in the studied population

e=margin of error

Therefore, taking the assumption that = 0.5 for unknown population, the usual z= 1.96, and the wanted margin of error e=0.04 (4%), the total number of sampled graduates were 600.

Data Collection Tools

Primary data was collected using structured questionnaire from 600 graduates. The questionnaire once designed was pre-tested and qualified further based on the responses. The questionnaire contained a range of information about individual graduate, family background, discipline, and labor market experience. Then training was given to the data collectors and the data was collected with the close supervision of principal researchers.

Methods Of Data Analysis

To realize the objectives of the study appropriate descriptive and econometric analysis were employed. As descriptive analysis mean, percentage, and standard deviation were used. As econometric analysis techniques both binary logistic regression and Weibull regression were used.

Econometrics Analysis

To identify the determinants of graduate unemployment a logit model was used. This model was preferred because the dependent variable is dichotomous (Gujarati, 2004). In this study the dependent variable, unemployment status, takes a value of '1" if the graduate was employed, and "0" otherwise was used. The logit model is mathematically formulated as follows:

$P_i = E(Y = 1|X_i) = \frac{1}{1+e^{-Z_i}}$ 3.1

Where, $Z_i = \beta_0 + \beta_i X_i$

Thus, the probability that a given graduate is employed is given by:

$P_i = \frac{1}{1+e^{-Z_i}} = \frac{e^{Z_i}}{1+e^{Z_i}}$ 3.2

The probability that a given graduate is unemployed is given by:

$1 - P_i = \frac{1}{1+e^{Z_i}}$ 3.3

The ratio of the probability that a graduate is employed to the probability that the graduate is unemployed (the odds ratio) is given by:

$\frac{P_i}{1-P_i} = \frac{\frac{e^{Z_i}}{1+e^{Z_i}}}{\frac{1}{1+e^{Z_i}}} = e^{Z_i}$ 3.4

Changing both sides to the natural logarithms we can form linear equation, like

$L_i = \ln\left(\frac{P_i}{1-P_i}\right) = Z_i = \beta_0 + \beta_i X_i$ 3.5

Where,

Li =is the log of the odds ratio, which is linear in parameters.

P_i= is the probability that i^{th} graduate is employed

$1 - P_i$= is the probability that the i^{th} graduate is unemployed

Zi=is a function of n explanatory variables (Xi), expressed as:

$Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n$ 3.6

β_0=is an intercept, and $\beta_1, \beta_2 \ldots \beta_n$, are the slopes of the function

X_n= is the vector of explanatory variables

The logistic regression model can be expressed including to disturbance term as:

$L_i = Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n + U_i$ 3.7

Then, using maximum likelihood estimation, equation 3.7 was estimated. The estimated coefficients were transformed into marginal effects and interpretation was made. After identifying determinants of graduate unemployment, we tried to identify factors that determine the duration (spell) of unemployment. It is often common to see a period of time spent in a given state before transition to another state, such as duration unemployed or alive or without health insurance. In such cases the question how long it takes until the state changes is apposite. In dealing with such questions it is common to use survival analysis. One of the advantages of using survival analysis compared to OLS is that it takes into account censoring. In this study the questions were what is the expected duration of time until a graduate employed? There are three types of survival models depending on the hazard function, namely parametric, semi-parametric, and non-parametric models. In this study both parametric and non-parametric models were used. Here Kaplan-Meier and Weibull models were used as non-parametric and parametric models, respectively. The Kaplan-Meier non-parametric estimator of survival model is defined by

$$S(t) = \left(\prod_{j \backslash tj \le t}\right) \frac{rj - dj}{rj}$$

Where, dj number of spells ending at time tj, rj is the number of spells at risk at time tj (Greene, 2003). This estimator can be interpreted as survival probability at time tj. Together with Kaplan-Meier non-parametric estimator of survival we also used Weibull parametric regression model in identifying the determinants of duration of unemployment among graduates.

The baseline hazard function is $\lambda_0(t) = \lambda p t^{p-1}$ gives the Weibull proportional hazards model $h_i(t) = \lambda p t^{p-1} \cdot \exp(x_i \beta)$, where p is known as the shape parameter. In the Weibull model, the shape of the base line hazard function, pt^{p-1}, is shifted by proportionality factor $\lambda \exp(x_i \beta)$. The hazard is monotonically increasing for $p > 1$, showing increasing duration dependency, and monotonically decreasing for $p < 1$, showing decreasing duration dependency. The hazard function, $h(t) = \frac{f(t)}{s(t)}$, can be used to derive the probability density function, $f(t)$, and the survival function, $s(t)$, of the Weibull model, and the likelihood function with right censoring is

$L = \prod_{i \in D} f(t_i)^{\delta_i} \cdot S_i(t_i)$

Then standard maximum likelihood estimation was used to obtain estimates of the parameters p and β.

Results and Discussion

Socio-Demographic Characteristics of the Respondents

The data was collected from the five Cities of Oromia Region. Accordingly, 105 (17.5%), 115 (19.17%), 140 (23.33%), 117 (19.5%), and 123 (20.5%) of the samples were collected from Adama, Bishoftu, Sebeta, Sululta, and Burayou, respectively. Hereunder the descriptive results are presented in Table 4.1. The result shows 27% of the respondents were female graduates. The vast majority (63.17%) of them were single. The respondents had various levels of education ranging from level I up to bachelor degree. About 35.83% of them had TVET level of education while 59.83% had bachelor level of education. They were derived from various specializations. The result displays33.5%, 34.43%, and 32.17% of the graduates had specialization in natural science, social science, and engineering, respectively. The proportion is more or less the same. The respondents were also derived from graduates of different years between 2011/12 and 2016/17.

Furthermore, the result depicts 68.17% of the respondents were born in rural areas. The majority of the graduates were living by themselves (44.33%) followed by those living with family (39%). The average age of the graduates was 25.59 years. This implies most of the graduates were young.

Employment Characteristics of the Respondents

The survey result displays 65.17% of the graduates were employed while the rest

Table 1: Characteristics of the Respondents

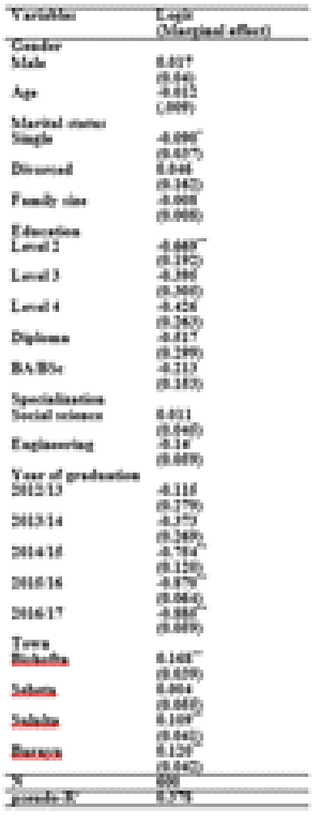
Variables		F.	%
Sex	Male	438	73
	Female	162	27
Marital status	Married	215	35.8
	Single	379	63.17
	Divorced	6	1
Place of resident	Adama	105	17.5
	Bishoftu	115	19.17
	Sebeta	140	23.33
	Sululta	117	19.5
	Burayu	123	20.5
Education level	Level I	9	1.5
	Level II	29	4.83
	Level III	42	7
	Level IV	135	22.5
	Diploma	26	4.33
	BSc/BA	359	59.83
Specialization	Natural science	201	33.5
	Socialscience	206	34.43
	Engineering	193	32.17
Year of graduation	2011/12	100	16.67
	2012/13	60	10
	2013/14	60	10
	2014/2015	94	15.67
	2015/2016	129	21.5
	2016/17	157	26.17

34.83% were unemployed. Among the employed graduates 34.67% waited more than a year to be employed. Again among those employed, 11.08%, 52.58%, and 36.34% were working in private organizations, government organizations, and their own business. Among those unemployed 43.54%, 16.75%, and 16.75%reported high number of graduates, lack of work experience, and waiting for government jobs as a cause their unemployment, respectively. In an effort to understand to what extent the graduates are working in their area of specialization or not they were asked what they were doing. However, only 43.73% of the graduates were working in their area of specialization. The rest, 56.27%, were working outside their area of specialization. Many of the graduates were working outside of their specialization because there was no enough job opportunity in their area of specialization (75.58%) or were not interested to work in their area of specialization (18%). Even 6.45% of the graduates reported they were working until they get work in their area of specialization.

Determinants of Graduate Unemployment

It is known that an interplay of several factors that determine employability of an individual in the labor market. In understanding the determinants of graduate's employment logit model was used. Table 4.2 displays the results in marginal effects.

Table 2: Determinants of Graduate Employment



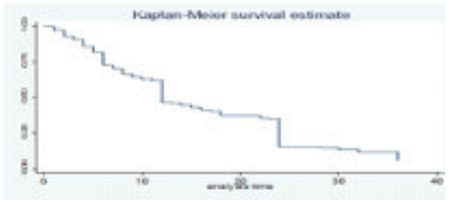
- Standard error in parenthesis and * p < 0.05, ** p < 0.01
- Notes: the column is from logit estimation. The R-square is a pseudo-R^2.
- The dependent variable is employment; 1=employed 0=unemployed
- The reference category for the variable marital status is married; the reference category for the education is Level I; the reference category for the variable specialization is natural science; the reference category for years of graduation variable is 2011/12; and the reference category for the variable town is Adama.

The result shows compared to married graduates, single graduates were less likely to be employed by 9% and this is statistically significant at 5%. The result displays consistently that compared to graduates of level I education, other levels of graduates were less likely to be employed regardless the level of education. For example, compared to those graduates of level I, graduates of level II were less likely to be employed by about 66.9% and this result is significant at 1%. The result from estimation further revealed that there was variation in employability by specialization. Compared to natural science graduates, engineering graduates were less likely to be employed by about 14% and this is statistically significant at 5%. Year of graduation was also found to be important factor behind employability. The result shows consistently those recent graduates were less likely to be employed compared to graduates of 2011/12. Unemployment of graduates was related to spatial. The estimation result depicts graduates living in Adama were less likely to be employed compared to graduates living in other towns. For example, a graduate living in Bishoftu was 16.8% more likely to be employed compared to a graduate living in Adama City.

Determinants of Unemployment Spell

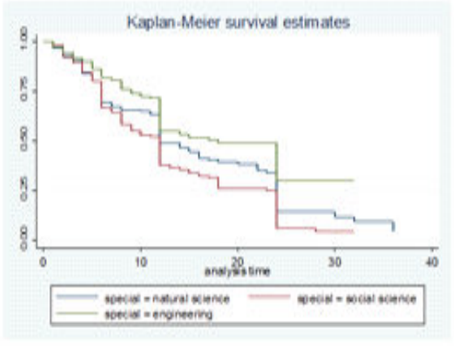
To identify the determinants of unemployment spell duration models were used. First, using the Kaplan–Meier estimator, which is widely used non-parametric estimator, survival function was estimated. The result in Figure 1 shows until the 12th month the survival function declines relatively at higher rate (a higher probability being employed). Then after the survival function declines slowly.

Figure 1: Kaplan-Meier Survival Curve for Duration of Unemployment.



The result in Figure 2 shows the survival function based on specialization of graduates. Among the three specializations, engineering graduates had a higher survival rate of unemployment. This means regardless of the number of periods elapsed after graduation; surviving unemployment was higher for engineering graduates. The test result consistently also depicted there was significant difference (p=0.000) in survival rate of unemployment based on specialization.

Figure 2: Kaplan-Meier Survival Curve for Unemployment by Specialization



Finally, to identify determinants of duration of unemployment Weibull regression was run and the results are presented in Table 3.

Table 3: Determinants of Duration of Unemployment Using Weibull Regression

Variables	Hazard rate
Sex	
Male	1.111
	0.135
Age	0.957
	0.029
Marital status	
Single	0.763**
	0.088
Divorced	0.951
	0.450
Family size	0.981
	0.025
Education level	
Level 2	0.632
	0.233
Level 3	0.861
	0.351
Level 4	0.613
	0.232
Diploma	0.739
	0.318
BA/BSc	0.907
	0.338
Specialization	
Social science	1.064
	0.133
Engineering	0.665***
	0.103
Year of graduation	
2012/13	1.085
	0.182
2013/14	0.865
	0.153
2014/15	0.502***
	0.088
2015/16	0.422***
	0.075
2016/17	0.953
	0.182
Town	
Bishoftu	1.869***
	0.317
Sebeta	1.196
	0.209
Sululta	1.345*
	0.244
Burayu	1.197
	0.214
Constant	0.042***
/ln_p	0.364***
	.0418
P	1.44
	0.060
1/p	0.695
	.029
N	600
pseudo-R^2	0.375

- Standard error in parenthesis and * p < 0.05, ** p < 0.01
- Notes: the column is from Weibull estimation. The R-square is a pseudo-R^2.
- The dependent variables is the spell of unemployment;
- The reference category for the variable marital status is married; the reference category for the education is Level I; the reference category for the variable specialization is natural science; the reference category for years of graduation variable is 2011/12; and the reference category for the variable town is Adama.

The result displays single graduates had 23.7% less hazard rate compared to married graduates and this is statistically significant at 1%. The result consistently revealed that the hazard rate of those with level I level of education was higher than that of any other level of education but it is not significant. However, it depicts there was significant difference in hazard rate among specializations. For example, graduates of engineering had 33.5% less hazard rate compared to graduates of natural science. The hazard rate was low for graduates of 2013/14, 2014/15, 2015/16, and 2016/17 compared to graduates of 2011/12. For example, the hazard rate of graduates of 2015/16 is less by about 57.8% compared to graduates of 2011/12. The result is significant at 1% level. Finally, the result shows there is variation in hazard rate by the town where the graduate resides. For example, the result shows compared to Adama, the hazard rate of Bishoftu town is higher by about 86.9%. This result is significant at 1% level of significance.

Discussion

The result revealed that among the employed graduates, 34.67% waited more than a year to be employed. This clearly indicates the issue of graduate unemployment is a real problem that requires a series concern. Even among those employed more than half were working in government organizations. This implies government remained the major employer of graduates and the private sector is yet is not in a position to providing employment to the extent it is expected. Among the main factors, new entrants (graduates) into the labor market and lack of work experience were the main concerns of graduates in the unemployment pool. More than half (56.27%) of working graduates were working outside of their area of specialization implying there is a mismatch in the labor market. The result displayed employability of graduate results from an interplay of a number of factors. It consistently depicted that compared to graduates of level I education, other levels of graduates were less likely to be employed regardless the level of education.

This is consistent with various findings in developing countries (Aryeetey, Baah-Boateng, & Ackah, 2014; Baah-Boateng, 2014). This indicates the economy is not in a position to creating enough job opportunities for higher level of education. Interestingly, the analysis also depicted variation in employability by specialization. Compared to natural science graduates, engineering graduates were less likely to be employed. This might arised because the manufacturing sector is underdeveloped to absorb the growing graduates of engineering. This evidence suggests the need for revisiting the current curriculum and aligns it to the demand in the labor market. The result further indicated spatial differences in employability of graduates. For example, a graduate living in Bishoftu was 16.8% more likely to be employed compared to graduate living in Adama. This reflects spatial nature of graduate unemployment.

The present study further examined the determinants of the duration of unemployment. The result revealed up until the 12th month after graduation the survival function declined relatively at higher rate (a higher probability being employed). This seems to indicate that if graduates are not employed in the first twelve months that come after graduation, they are more likely to remain in the unemployment pool. This problem was more pronounced among graduates of engineering. The possible explanation for this may be lack of competency the graduates may have or lack of demand in the labor market for graduates like engineering. Similarly the result indicated spatial variation in the duration of unemployment.

Conclusion

The objective of this study was to examine the determinants of graduate unemployment and its duration based on data obtained from selected Cities of Oromia region. To achieve this objective data was collected from 5 towns of Oromia, namely Adama, Bishoftu, Sebeta, Sululta, and Burayou. The finding clearly indicated graduate unemployment is a series concern in the region. The problem is reflected in the length of unemployment and working out of the profession. Interestingly, the result obtained revealed employability declines as the level of education increases. This implies the economy is not yet in a position to absorb highly qualified graduates. Especially graduates in engineering were more likely to be unemployed and stay longer period of time in the unemployment pool. This implies the economy particularly the industrial sector is not in a position to provide employment opportunities for graduates of engineering. This suggests the need for evaluating the universities program and makes it responsive to the labor market demand. Also it is important to revisit the seventy-thirty education policy of program. The result further suggests the need for inclusion of entrepreneurship in the curriculum to enhance employability of graduates in addition to functional skills/ knowledge to make them innovative and forward thinkers. Furthermore, need to give emphasis to sectors that absorb the growing graduates through making the existing policies suitable for the development of businesses.

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The Effects of Leadership Style in Accelerating Service Delivery in Municipalities in Selected Cities of Ethiopia

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Abstract

The ever-changing complex service sector environment has created a need for leaders who can meet the demands and challenges of civil service sector with a real need for improved service delivery. Hence, the purpose of this study was to determine the effect of leadership style in accelerating service delivery in municipalities in selected cities of Ethiopia. Structured questionnaire in the form of the Multifactor Leadership Questionnaire (MLQ) to measure leadership style and the perceived service delivery was employed. The study analyzed the responses from 769 sampled employees of four city administrations (Hawassa, Bahir Dar, Adama, Dire Dawa) and the collected data was analyzed using descriptive statistics, correlation and multiple regression analysis. The finding of this study shows that from transformational leadership dimensions the idealized influence attributes have the lowest mean 3.33 (Std. Dev. = 0.03) and individual consideration is the highest mean 4.46 (Std. Dev. = 0.04). With regard to transitional leadership, the highest mean score is for management by exception (passive) with a mean score of 4.10 (Std. Dev. =0.05); and the lowest mean score is for contingent reward (mean =3.41, Std. Dev. = 0.06). The regression analysis result shows that there is a significant (p-value<0.01) but weak relationship between perceived service delivery, leader transformational, transactional and laissez-faire leadership style. Overall, these three-leadership styles have a significant effect on the service delivery (P<0.05). According to the results, suggestions are proposed.

Keywords: Transformational, transactional, laissez-faire, Leadership style, MLQ

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Introduction

Leadership is a challenge of our time and it has been a topic of interest to scholars. Scholars (such as Robbins and Judge, 2013; Moorhead, G., Griffin, R.W., 2012; Yukl, 2010; Hitt, Black & Porter, 2009) define leadership as the ability to influence a group in order to achieve a specific vision or set of goals. Leadership effectiveness is often operationalized via the degree to which leaders can encourage followers to engage in organizational strategies (Hur, Van den Berg, & Wilderom, 2011; Hogg et al. 2005; Bruno & Lay, 2006). Leader effectiveness is considered to be a critical element to an organization's success and it relies on the result of the leaders' activities for followers and organization (Carter, 2009; Sadeghi & Pihie, 2012; Yukl, 2006). To be an effective leader requires a strong relationship with followers and should improve followers' well-being and work performance (Bottomley,Burgess & Fox, 2014; Hogg et al., 2005; Zhang, Li & van Dick, 2013). Transformational leaders will be more effective than other type of leaders because of their ability to create relationships with followers (Dionne et al., 2004; MacKenzie, Podsakoff & Rich, 2001; Sadeghi & Pihie, 2012).

Accordingly, this study is based its premises on the transformation leadership theory since it influences major changes in the attitudes of organizational members and building commitment for the organization's mission, objectives, and strategies (Laguerre, 2010; Avolio and Yammarino,2013).

It is therefore necessary for organization that leaders should think strategically when executing their roles for better service delivery. According to argument by Masungo and Marangu (2015), the advantage and success of an organization in service delivery depends

on strategic leaders who are involved in directing and mobilization of employees to achieving both present and future desires of that particular organization as far as service delivery is concerned. Mathibane (2010) further stated that "service delivery is theorized as the implementation of exact policy objectives in the public sector with numerous grades of success and that public service is related with government and it is expected that government should be the provider of the public services."

This is so because, service delivery is an imperative aspect of making sure that the lives of the people are improved. However, the common problem in most public service organizations is to identify what leadership is and what leaders do to ensure team and organizational success is less well understood (Kouzes and Barry 2002; Niven, 2003; Palestini 2008; Barbara 2002). It is evident from the above that a leader influences the behavior and performance of employees, ultimately impacting on the goals and objectives of the organization.

The effectiveness of organizational performance of public sector, which can be highly affected by effective leadership, in Ethiopia, has been a major concern to the government to achieve the goal of growth and transformation in all aspects as lack of effectiveness in the areas of leadership is a common problem in most public service organizations of Ethiopia (Getachew and Richard 2006).

Statement of the Problem

During the past few decades, improving efficiency in the public sector has been a challenge. This is due to bureaucratic procedures flawed with inefficiency, lack of accountability thus high level of corruption and wastage of resources which translate into poor economic performance and lack of effective leaders (National Planning Commission, 2018; Plummer and Janelle, 2012). Much of the current literature and researches on service and leadership deals with outcomes rather than focusing on improving the process of service delivery (Chenet, Tynan; Money, 1999). Although a limited number of studies have attempted to identify means of improving the delivery of service through such activities as employee management (e.g., Hartline and Ferrell, 1996), internal marketing (e.g., Lings, 1999), and total quality management (Lukas and Maignan, 1996).

In contexts of rapid urbanization and increasing decentralization, municipal leaders face challenges for which their structures, processes and capacities are sometimes inadequate. Rapid urbanization has generated growing demand for urban services. However, while many cities have undergone substantial social, economic and physical transformation, the leadership of municipal governments have failed to keep pace (UNESCAP, 2015; Yirgalem Mahiteme, 2008). The municipal leaders often have weak capacity in areas such as: planning and regulatory control, finance, human and administrative capacity and service delivery.

Poor leadership can lead to despair, which, if left unchecked for a long time, results in an organization becoming completely dysfunctional. Although most organizations claim to be more efficient and effective, this is almost impossible without effective leadership. Like many developing countries, public service delivery in Ethiopia suffers from weak capacity of public agencies and lack of effective transparency, responsiveness and accountability systems (Chilala, et. Al., 2014; Jemal, 2019; Avis, 2016).

The Ethiopian Government has introduced a series of public sector reforms over the past few decades to improve public service leadership. Public service leaders at different level advocate transformational agenda to improve the public service organizations' performance, implementation efficiency in terms of effectiveness and efficiency. However, preliminary studies and observations show that such efforts have failed to achieve the goal and that leadership practices have not reached the required level (Tadesse, 2019; Jemal, 2019). The core of the criticism of public service organizations in a lot of literature is that all sorts of the public sectors tend to be over-managed and under-led. The government recognizes that its public service requires effective leadership.

Leadership is a complex, multifaceted process concerned with the art of influencing followers in a particular direction which involves casting a vision, goal setting and motivating people (Spendlove, 2007). Effective leadership will enable delivery of the reformed public service. Leaders have the ability to shape organizations and have influence on the culture of the organization. In contrary to this, the lack of proper leadership can affect the acceleration of service delivery. Service delivery of the cities consists of a complex set of relationships among leaders of all levels. Due to this fact, poor service delivery remains an important challenge of the Ethiopian cities' administrations, and needs to be investigated thoroughly (Tadesse, 2019). There is a limited study on the effects of leadership styles on public service delivery in public sectors of Ethiopia. Moreover, little is known about the leadership styles of municipal managers working in a city administration of Ethiopia, which may affect the quality-of-service delivery.

The purpose of this study is to investigate the effect of leadership style in accelerating service delivery in some selected municipalities of Ethiopia.

Objectives of the study

The general objective of the study was to investigate the effectiveness of leadership in accelerating service delivery in some selected Ethiopian cities. The specific objectives are

1. To assess and identify the prevailing leadership style and its key attributes in municipalities in Ethiopia.
2. To determine the effect of leadership styles on service delivery in municipalities in Ethiopia.

Review of Related Literature

Service Delivery

According Lovelock & Wright (2002), Service delivery refers to the actual delivery of a service and products to the customer or clients. Service delivery is considered as a vital function in the relation between government bodies and citizens. One of the major tasks of state is to offer good services to its citizens (Abe and Monisola, 2014). The most widely used measure of city administration performance of municipalities is service delivery.

However, in many developing countries, delivery is constrained by challenges of coordination, governance, finance and capacity, which are exacerbated by the pace and scale of urbanization. Governments at all levels play important roles in service delivery, regulating, facilitating and collaborating with other stakeholders and institutions.

The effectiveness of service delivery is largely rests on the combination of various leadership styles depending on the circumstances of each organization. Empirical studies conducted by previous researchers found that there is a relationship between leadership style and effectiveness of service delivery and the strength of the relationship and direction may vary according to the leadership style. According to a study by Jones and Rudd (2008) on academic program leaders in colleges of agriculture at land-grant institutions, the academic program leaders utilize transformational leadership more often than transactional or laissez-faire leadership.

They used the standard MLQ questionnaire based on full range leadership model developed by (Bass and Avolio, 2000) and the participant of the study were 56 professional Academic Program Leader, Dean, or any leader with a similar title.

Similarly, a study by Eagly, et.al. (2003) showed that effective and successful leaders use transformational leadership behaviors more often than transactional or laissez-faire leadership. Bass (1990) stated that transformational leadership is the predominant leadership style that people have in mind when they describe their ideal leader. Bass also stated transformational leaders are more effective and successful.

A study by Aboshaiqah et al (2015) on nurses' Perception of managers' leadership styles and its associated outcomes, showed that nurses perceived that transformational leadership are utilized more often than transactional and laissez-faire leadership styles, again, further analysis showed that there was a positive correlation between outcome factor effectiveness and transformational and transactional leadership styles and negative correlation with laissez-faire leadership style. They concluded that the three-leadership styles are a significant factors of employee performance among hospital nurses.

According to a research result of Hasim and Mahmood, 2012 conducted in the education sector involving 387 employees' public and private universities. The result is showing that transactional leadership has a positive influence over employee commitment. A study on the Ethiopian banking industry by Tsigu & Rao (2015) showed that transformational leadership style explained the variation on a performance better than transactional leadership style. The researchers recommended that transformational leadership style is the preferable leadership style by the employees and under this leadership style the banks under study will be more beneficiary by employees.

Conceptual Definition of Leadership

Over the past years, leadership has been studied extensively in different contexts and theoretical frameworks. Hence, understanding the conceptual definition and theories of leadership is important.

Definition of Leadership

Karmakar and Datta (2015) defined leadership as 'the process of direction, guidance, and influencing others and establishment of interpersonal relationship for the achievement of the objectives of the organization yielding satisfaction to all'. Leadership is a position held by an individual in a group (Manichander & Manjula, 2016). The leader is in the position to shape, regulate, control and change the attitudes, behavior and performance of the employees. Thus, leadership is all about how an individual can influence a group of other people in order to achieve something that is meaningful to them. Effective leadership incorporates ethical considerations and builds a values-based organization in which principles and values guide day-to-day decision making. Furthermore, effective leadership refers to the fact that both business leaders and employees avoid wrong behaviors and take active steps to what is right (Burton & Obel, 2013; Horner & Rossiter, 2007).

Leadership Theories

More recently, Lussier and Achua (2015) argued that a leadership theory is an explanation of some aspect of leadership. Leadership theories are used to better understand, predict, and control successful leadership. In this way leadership theories have a practical value and the main purpose of a theory is to inform practice. The literature review of leadership shows that the prominent leadership theories have grown, shifting from simplistic characterizations of personality traits to more complex frameworks for understanding what contributes to effective leadership. After reviewing all the different leadership paradigms, it can be concluded that there is no mutual agreement between practitioners and academics as to which theory or model can be considered as most effective. Since, a single theory cannot explain all situations having both strengths and weaknesses (Malik, 2012).

Due to these facts, a significant amount of research, dialogue, writing and communication needs to be conducted to get the parameters of the leadership theories effectively. For many years, researchers have tried to explain how leaders‟ style or behavior relates to effectiveness (Dessler, 2004). As a result, the transformational leadership theory, transactional, and laissez-faire leadership theories were identified since they have a predictive effect on perceived leadership effectiveness than each leadership style alone. Eventually, transformational leadership has been demonstrated as an effective leadership style in leading organization (Felfe & Schyns, 2004), since it has great effects on subordinates behavior and organizational outcomes (Tickle et al, 2005; Bommer et al, 2004).

Transformational Leadership

Transformational leadership theory has captured the interest of many researchers in the field of organizational leadership over the past three decades by combining trait, behavioral, and contingency approaches of leadership, one of the new integrative leadership theories, namely transformational leadership was developed (Abu Daud Silong, 2009; Lussier & Achua, 2007). This theory was developed by Burns (1978) and later enhanced by Bass (1985, 1998) and others (Avolio & Bass, 1988; Bass & Avolio, 1994; Bennis & Nanus, 1985; Tichy & Devanna, 1986).

The major premise of the transformational leadership theory is the leader's ability to motivate the follower to accomplish more than what the follower planned to accomplish (Krishnan, 2005). Transformational leadership has been associated with the personal outcomes (Hatter & Bass, 1988; Barling, Moutinho, & Kelloway, 1998; Kirkpatrick & Locke, 1996) of the follower as well as organizational outcomes (Boerner, Eisenbeiss, & Griesser, 2007; Zhu, Chew, & Spangler, 2005; Jorg & Schyns, 2004; Barling, Weber, & Kelloway, 1996; Howell & Avolio, 1993). Research has shown that transformational leadership impacts follower satisfaction (Lam, Wei, Pan, & Chan, 2002; Yu, Leithwood, & Jantzi, 2002; Hatter & Bass; Koh, Steers, & Terborg, 1995) and commitment to the organization (Barling et al., 1996; Koh et al., n.d.). Due to its impact on personal and organizational outcomes, transformational leadership is needed in all organizations (Tucker & Russell, 2004). Transformational leadership is comprised of five dimensions which are idealized influence (attribute and behavior), inspirational motivation, intellectual stimulation, and individualized consideration (Bass, 1985).

Idealized influence describes the degree to which leaders are perceived as inspiring role models (Moss & Ritossa, 2007). These leaders are admired, respected, and trusted; followers identify and pursue their leaders (Bass et al, 2003). Idealized influence consists of two forms; idealized influence attribute in which leaders receive trust plus respect, and idealized influence behavior in which leaders exhibit excellent behavior and might sacrifice their own needs to improve the objectives of their work-group (Moss & Ritossa, 2007).

Inspirational motivation describes the degree to which the leader states a vision that is

attractive and encouraging to followers (Judge & Piccolo, 2004). Leaders strengthen followers by viewing the future with optimism (Antonakis et al, 2003), and act in ways that motivate those around them by providing meaning and challenge to their followers work (Bass et al, 2003). Intellectual stimulation explains the degree to which the leaders stimulate their followers' endeavors to be innovative and creative (Limsila & Ogunlana, 2008), and consider old organizational problems with a new perspective (Moss & Ritossa, 2007).

Individualized consideration refers to the degree to which leaders providing support, encouragement, and coaching to followers (Yukl, 2006). The leaders listen carefully to the individual needs of followers and may delegate certain responsibilities to help followers grow through personal challenges (Bass & Avolio, 1994; Bass et al, 2003; Judge & Piccolo, 2004; Northouse, 2007*)*. Hence, transformational leaders help followers by arranging their values and norms; encouraging them to bring change in their personal as well as organizational life; and help them to perform beyond their expectations (House and Shamir, 1993; Jung and Avolio, 2000).

Transactional Leadership

Transactional leadership is the second part of transformational leadership theory. Transactional leadership concentrates on the exchanges that occur between leaders and their followers (Northouse, 2007), which helps follower to fulfill their own self-interests (Bass, 1999). Transactional leaders clarify followers' responsibilities, their performance objectives, and their tasks that must be completed (Eptropaki & Martin, 2005). This type of leadership deals with maintaining the current situation and motivating people through contractual agreement (Bass, 1985; Jung et al, 2008).

Transactional leaders direct followers to achieve established goals by explaining role and task requirements (Armandi et al, 2003). This leadership style tends to emphasize extrinsic rewards, such as monetary incentives and promotion (Jung et al, 2008). Transactional leaders prefer to avoid risk and focus on efficiency (Levy et al, 2002). It can be concluded that transactional leaders help the followers to identify what must be done to accomplish the described results such as better-quality output, more services, and reduce the cost of production.

Transactional leadership is comprised of three dimensions which are a contingent reward, management by exception active, and management-by-exception passive. *Contingent reward* describes the degree to which the leader determines rewards in exchange for followers‟ efforts to satisfy organizational goals. It includes clarification of the work required to obtain rewards and the use of incentives to influence motivation. Leaders must clarify the expectations and present recognition when goals are accomplished (Limsila & Ogunlana, 2008; Yukl, 2006). *Management-by-exception active* explains the degree to which a leader watches followers closely for mistakes or role violations (Northouse, 2007). Active leaders check follower behaviors, predict problems, and take corrective actions before the behavior makes severe difficulties (Judge & Piccolo, 2004). *Management-by-exception passive* leaders wait for deviances, mistakes, and errors to happen and then take corrective action (Judge & Piccolo, 2004; Bass & Avolio, 1994). They do not actively seek out deviations from desired performance and only take corrective action when problems occur (Pounder, 2001). This type of leader avoids describing agreements, explaining expectations and standards to be achieved by subordinates, but will intervene after particular problems become apparent.

Several experts believe that transformational leadership produces greater effects than transactional leadership (Avolio & Bass, 2004; Dvir et al, 2002; Erkutlu, 2008; Northouse, 2007; Waldman et al, 2001). Although applying transactional leadership results in expected outcomes, transformational leadership results in performance that goes beyond expectation and leads organizations to triumph (Avolio & Bass, 2004; Erkutlu, 2008; Limsila & Ogunlana, 2008).

The newer paradigm adds transformational leadership to the previous transactional leadership model (Avolio & Bass, 2004), a combination of both leadership styles produces greater outcomes (Sirisetti (2011; Yukl, 2006,). They believe that transformational leadership is not a substitute for transactional leadership rather it augments transactional leadership in achieving the goals of the leaders, associate, group, and organization.

Laissez-faire Leadership

Laissez-faire leadership represents a type of behavior in which leaders display a passive indifference towards their followers (Moss & Ritossa, 2007). Laissez-faire leaders incline to move out from the leadership role and offer little direction or support to followers (Kirkbride, 2006), they avoid making the decision, give up responsibilities, and are indifferent to the needs of their followers. It is believed that laissez-faire is the passive avoidant and ineffective type of leadership theory. Leadership and organizational effectiveness are advantages of transformational leadership in comparison with transactional leadership.

Leadership Effectiveness

Leadership effectiveness is crucial to success in any organization. It closely depends on outcomes and consequences of the leaders‟‟ activities for followers and organization (Hur et al, 2011; Hogg et al, 2005; Bruno & Lay, 2006, Erkutlu, 2008Yukl, 2006). Thus, appropriate leadership style is an important factor that influences the effectiveness of leaders. Leaders to be effective require good relationships with their followers because these relationships should enhance followers‟‟ well-being and work performance (Hogg et al, 2005). Because of their close relationship with followers, transformational leaders should be more effective than other leaders. In turn, the organization will be directed towards effectiveness and productivity by motivating followers toward the extra effort, increasing followers' job satisfaction, improving their performance beyond expectation, and cultivating creativity and innovation in the organization (Zaidatol Akmaliah et al, 2011). Moreover, it has positive effects on leader effectiveness and performance (Hur et al, 2011; Burke et al, 2006; Judge & Piccolo, 2004). The outcomes that are obtained by transformational leadership are greater than what transactional leadership does.

Research findings in different contexts have indicated a statistically significant relationship between leadership effectiveness and different dimensions of transformational leadership as well as transactional contingent reward and management-by-exception (Lowe et al, 1996; Bass & Yammarino 1991; Kirby et al, 1991). Erkutlu’s (2008) findings revealed that all dimensions of transformational leadership were positively correlated with leadership effectiveness while laissez-faire leadership was found to be negatively correlated.

Leadership Qualities and Service Delivery

Literature suggests there are diverse linkages between leadership qualities and service delivery indicators in the organization in the private and public sectors. Research on leadership styles has focused on the orientation of the leader toward completing tasks, motivating people, and the leadership styles (Bolman & Deal, 2008). Burke and Collins (2005) for example find that leadership qualities have an impact on the performance of tasks and in turn how services are delivered. Bennis (2003) asserts that leaders add value by thinking abstractly and strategically, articulating a vision and

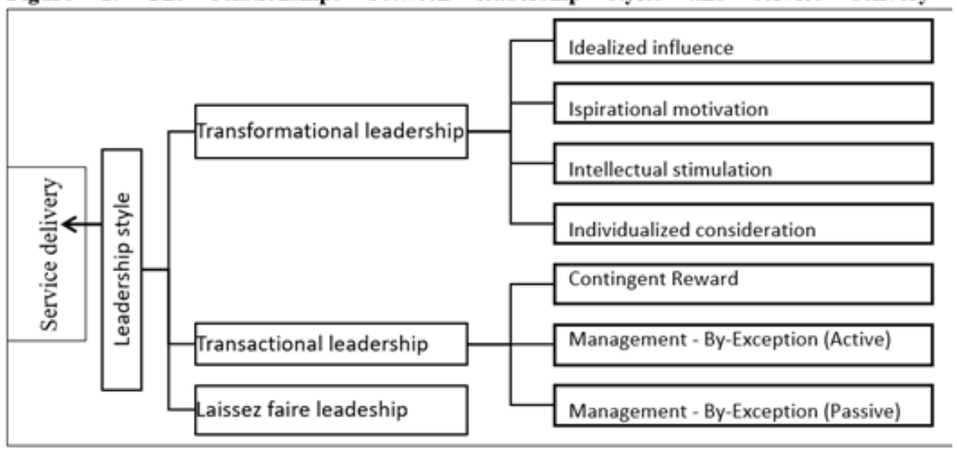
purpose for followers, and providing a vision, and even hope, for workers.

Sarver and Miller (2014) found transformative leaders as most effective among the law enforcers in the Texas United States of America. Transformational leaders were characterized as confident, energetic, and open-minded. Nevertheless, it is clear that successful and sustainable performance in any organization is linked to its effective leadership approaches and management practices, the capabilities and capacity of individuals and teams (Cronje, H., & Willem, P, 2010).

commitment, performance and thereby service effectiveness (Bass, 199; Lowe et al., 1996, and Tsigu & Rao, 2015; Aboshaiqah et.al., 2014). Numerous studies in the past report that transformational leadership is predominant have a positive influence on the followers.

This study discussed the full range leadership model among the various leadership styles (developed by Bass and Avolio, 1994; 1997). This model depicts that leader as employing a wide range of different forms of leader behaviors.

Figure 1: The relationships between leadership styles and service delivery



(Adapted from Bryman, 1992: 50)

Conceptual Framework

Leadership is a dominion course of action between leaders and followers. The leader aims to persuade the followers' performance to accomplish the organizational objectives and goals (Yukl, G. A., 2012; Bass, B. M., & Avolio, B. J., 1994). Research has shown that transactional, transformational, and laisses-faire leadership are common to affect the effectiveness of the employees in the organization (Bass, 1999, 2000; Tsigu & Rao, 2015; Aboshaiqah et.al., 2014).

Many scholars confirm that transformational, transactional and laisses-faire leadership boost employee attitude toward

The range of behaviors starts with transformational leader behaviors to transactional leader behaviors reaching the lowest leader interaction of laissez-faire leader behavior (Bass &Avolio, 1994). These leadership styles have been described to have a direct effect on individual and organizational level outcomes (Bass, 1990a; Yukl & van Fleet, 1992).

At this point, based on the above literature, it seems logical to infer and adopt the relationship between the three-leadership style and service delivery using the following framework (see figure1).

ln sum, there is a high probability that the leadership factors advocated by Bryman (1992), Sloane (2003), Kennedy (2002) and Taylor (2003) can promote effective service delivery. Moreover, these characteristics can promote a sustainable public service, which in turn will improve its ability to deliver services to society.

Materials and Methods

Research Design

To generate quantitative data the study used a survey design where the sample of respondents was drawn using the appropriate scientific method. The targets for the survey design were employees of the municipal. To achieve this, standard questionnaires (Multifactor Leadership Questionnaire (MLQ) **which is most** commonly used measures for evaluating a subordinate's perceptions of his/her supervisor's transformational, transactional, and passive leadership behaviors (Avolio, 1995; Bass, 1998; 1997; Bass & Avolio,1995), along with a written description of why certain questions or sections have been included.

Administratively, Ethiopia is divided into nine geographical regions and two administrative cities. The sample for this study was designed to provide estimates of key indicators for the selected municipal regional offices.

Two-stage samplings were applied in order to select the samples. Regions and administrative cities are the primary sampling unit (PSU) and customers of municipalities in the selected regions are secondary sampling units (SSU). From nine regions three regional cities (Hawassa, Bahirdar, and Adama) and from two administrative cities one administrative city (Dire Dawa) was selected purposely at the office level. In the second stage of selection, a fixed number of 193 employees from each cluster (Cities) was selected randomly to participate in this study. For this survey, the sample size has been determined using variables for each objective, and then the maximum sample size was considered.

In the survey of employees of municipal on the effectiveness of leadership in the service delivery process, the sample size was determined using population proportion formula with 95% confidence interval, using the following assumptions and parameters: Prevalence rate of employees' response on the effectiveness of leadership in accelerating service delivery in the cities considered as 50%, 5% margin of error and design effect of 2 for its multistage sampling. Hence, the following formula is applied to calculate the sample size.

Where:

n = required sample size

p = proportion of respondents with the population of interest, which is 50%

1-p= the proportion of the remaining population proportion 50%

Z = Confidence limit, which is usually at 95% level or 1.96

d = Margin of error level and usually estimated as 5% or 0.05.

After identifying the selected employees (in the sampled cities) the enumerators were collected the necessary data using the structured questionnaire designed for this study. Finally, 193 samples of employees are selected proportionally from each city.

Methods of Data Analysis

The collected data were coded, entered into the computer for analysis. Both descriptive and inferential statistics were used. Descriptive statistics were applied to produce frequency tables, graphs, and other numeric and pictorial displays and inferential statistics were used to measure the leadership effectiveness and the relationships between leadership and service delivery in accelerating quality service like correlations and regression analysis.

Inclusion Criteria

The study considered all existing employees to participate in the survey while data collection. Employees who had at least 6 months of experience were taken as eligible. Participation was purely being on a voluntary basis.

Ethical Considerations

Permission to conduct the study was secured from our university. Above all, the permission from study participants was secured orally to ensure that data should be generated with the full consent of each participant.

Results and Discussions

The present debate in the public service on the issue of improving service delivery takes place in the context of a changing public service. The purpose of this study is to determine the effect of the leadership style of the leaders/managers in the municipality in accelerating service delivery. In this chapter both descriptive statistics together with inferential statistics have been appropriately applied in order to come up with an overall better result of the research studied. The general information and survey questions results are plainly discussed hereby applying frequencies, percentages, correlations, and multiple regression outputs.

Demographic Profile of the Respondents

Table 1 below presents the profile of respondents. The participants were asked about their demographic information contains gender, marital status, position, years of experience, and education level. The majority of the respondents are male 64.1% whereas the rest 35.9% are females. Regarding the marital status of the respondents, 62.8 % are married and 32.7 % are single. In terms of length of service years 3.9% below 1 year, 35.2% has 1 – 5 years, 27.9% has 6-10 years, 18.0 % has 11- 15 years, and the rest 15.1 % years' work experience. Table 1 also shows that the majority of the respondents have a BA/BSc Degree, which is 58.5%. About 31.1 % of the respondents are MA/MSc degree holders and the rest 10.4% are diploma and below diploma holders.

Table 1: Demographic characteristics of the respondents

		Frequency	Percentage
Gender	Male	492	64.1
	Female	276	35.9
Marital Status	Single	286	37.2
	Married	482	62.8
Years of Experience/Service Year	Below 1 year	30	3.9
	1-5 years	270	35.2
	6-10 years	214	27.9
	11-15 years	138	18.0
	Above 15 years	116	15.1
What is the higher level of education you have completed?	MSc/MA	239	31.1
	BA/BSc Degree	449	58.5
	Diploma	72	9.4
	Certificate	8	1.0

Descriptions of Leadership Dimensions

The findings are analyzed and interpreted in relation to the objectives of the study. The internal consistency of the items is assessed by computing the Cronbach's coefficient, α. In this regard, the resulting α coefficient of reliability is calculated as 0.81 for transformational, 0.80 for transactional, and 0.85 for Laissez-Faire dimensions. Hence, we can say that items are acceptable for the analysis.

For the descriptive part, the mean and standard deviations of the variables that are involved in the model are analyzed. For reasons of standardization, we chose to assign a five-point response scale ranging from 1 (strongly disagree) to 5 (strongly agree) to each of the MLQ-5X items. Scores over 4 are considered high and desirable. (Rowold, 2004b)

Transformational Leadership

Transformational leaders are proactive, raise follower awareness for transcendent collective interests, and help followers achieve extraordinary goals. Based on the models that have been previously tested in the literature or have been hypothesized to better portray the data we grouped the indicators of the transformational leaders as Idealized attributes, idealized behaviors, inspirational motivation, intellectual stimulation, and individualized consideration. The transformational leadership of a leader is rated by his/her subordinates. In Table 2 the means and standard deviations of each transformational leadership dimension and statement can be found. The means for each dimension ranged from the lowest for idealized influence attributes, 3.33 (Std. Dev. = 0.03), to the highest for individual consideration, 4.46 (Std. Dev. = 0.04).

The highest-rated statement overall is in the individual consideration dimension of transformational leadership. The statement read, "Treats each person as individuals with different needs, abilities, and aspirations," and had a mean score of 4.52 (Std. Dev. = 0.71). With this statement being the highest-rated, it is possible that a leader who treats each person as individual with different needs, abilities, and aspirations may be perceived as an effective leader. The next highest rated statement is another individual consideration statement which read, "Focuses on developing individual strengths," and had a mean score of 4.46 (Std. Dev.= 0.74).

The highest-rated statement for idealized influence attributes is, "Instills pride in being associated with manager," and received a mean score of 3.43 (Std. Dev.= 1.14). For idealized influence behaviors, the highest-rated statement read, "Discusses most important values and beliefs," with a mean score of 3.72 (Std. Dev. = 0.97). The highest mean for an inspirational motivation statement is 3.75 (Std. Dev. = 0.92) and the statement is, "Talks optimistically about the future."

Table 2: Mean Rating and Standard Deviations for Transformational Leadership of Leaders

DIMENSIONS WITH THEIR STATEMENTS	Mean	Std. Deviation
IDEALIZED INFLUENCE ATTRIBUTES	3.33	0.03
+ Instills pride in being associated with manager	3.43	1.14
+ Goes beyond self-interest for the good of the group	3.44	1.20
+ Actions build respect	3.19	1.20
+ Displays a sense of power and confidence	3.25	1.18
IDEALIZED INFLUENCE BEHAVIORS	3.36	0.00
+ Discusses most important values and beliefs	3.72	0.97
+ Specifies the importance of having a strong sense of purpose	3.71	1.07
+ Considers the moral and ethical consequences of decisions	3.41	1.16
+ Emphasizes the importance of having a collective sense of mission	3.49	1.11
INSPIRATIONAL MOTIVATION	3.67	0.09
+ Talks optimistically about the future	3.75	0.92
+ Talks enthusiastically about what needs to be accomplished	3.74	0.95
+ Articulates a compelling vision for the future	3.64	1.07
+ Expresses confidence for achieving goals	3.55	1.09
INDIVIDUAL CONSIDERATION	4.46	0.04
+ Spends time teaching and coaching	4.40	0.79
+ Treats each person as individual with different needs, abilities, and aspirations	4.52	0.71
+ Focuses on developing individual strengths	4.46	0.74
INTELLECTUAL STIMULATION	3.64	0.06
+ Re-examines critical assumptions to question whether they are appropriate	3.72	0.90
+ Seeks differing perspectives when solving problems	3.72	0.94
+ Gets me to look at problems from many different angles	3.63	0.97
+ Suggests new ways of looking at how we do our jobs	3.48	1.05
Overall Transformational	3.73	0.14

Transactional Leadership

Transactional leadership is an exchange process based on the fulfillment of contractual obligations and is typically represented as setting objectives and monitoring and controlling outcomes. The transactional leadership consists of the following dimensions: Contingent rewards, management-by-exception active, and passive. With regard to transitional leadership, the highest mean score is for management by exception (passive) with a mean of 4.10 and standard deviation of 0.05. The attribute 'Fails to intervene until problems become serious is the highest mean (4.40) from management by exception (passive) with a standard deviation of 0.84. The lowest mean score is for the contingent reward with a mean of 3.41 and a standard deviation of 0.06. The attribute 'Provides assistance in exchange for effort' is the lowest mean (3.34) from contingent reward with a standard deviation of 1.10.

Table 3: Mean Rating and Standard Deviations for Transactional Leadership of Leaders

DIMENSIONS WITH THEIR STATEMENTS	Mean	Std. Deviation
CONTINGENT REWARD	3.41	0.06
• Clearly expresses rewards for performance meeting designated standards	3.35	1.16
• Provides assistance in exchange for effort	3.34	1.10
• Expresses with a well-accomplished task	3.56	1.04
MANAGEMENT BY EXCEPTION (ACTIVE)	3.61	0.05
• Spends time extinguishing "fires"	3.51	1.02
• Keeps track of mistakes	3.72	1.02
• Directs attention toward failure to meet standards	3.50	0.93
MANAGEMENT BY EXCEPTION (PASSIVE)	4.10	0.05
• Fails to intervene until problems become serious	4.40	0.84
• Things have to go wrong before taking action	4.30	0.86
• Shows to be a firm believer in "If it ain't broke, don't fix it"	3.90	0.96
• Problems must become chronic before taking action	3.70	0.93
Overall Transactional	3.71	0.09

Laissez faire Leadership

The Laissez-faire scale identifies leaders who tend to avoid involvement. This leadership style could be easily defined as "non-leadership" and is the exact opposite of an efficient transformational leadership style. Permissive leaders refuse to assume the responsibilities that are part of their position as leaders: they do not offer enough information to their followers, do not offer feedback, do not acknowledge or work towards their followers' satisfaction. High scorers in this scale avoid approaching important problems, are absent when needed, avoid making decisions, and have late reactions to urgent problems. In this regard, the mean score for Laissez-faire is 3.78 and the standard deviation is 0.08. This shows leaders of the municipal are rated as Laissez-faire by their followers'. The most prevalent problems show by the leaders are delaying responding to urgent questions and avoid making decisions.

Table 4: Mean Rating and Standard Deviations for Laissez-Faire Leadership of Leaders

DIMENSION WITH THEIR STATEMENT	Mean	Std. Deviation
LAISSEZ FAIRE	3.78	0.08
Avoids getting involved when important issues arise	3.79	0.89
Avoids making decisions	3.86	1.07
Delays responding to urgent questions	4.01	0.97
Is absent when needed	3.48	1.05
Overall Laissez Faire	3.78	0.58

Furthermore, to determine the type of leadership practiced by leaders in the municipality, the means and standard deviations of the scores were compared for the three-leadership style. It is logical to infer that a higher scale score would indicate a higher likelihood of endorsing that particular leadership style. From the above table 3 on the mean score of leadership dimensions, the following leadership styles emerged as dominant: Individual Consideration and management by exception (passive), and Laissez-faire Leadership. These leadership styles appear to be preferred by the leader respondents in the study. Idealized influence attributes seem to be the least preferred leadership style.

Transformational had a mean score of 3.73 and a standard deviation of 0.14. Transactional leadership style had a mean of 3.71 and a standard deviation of 0.09. Laissez-faire had a mean of 3.78 and a standard deviation of 0.58.

The responses of the raters for transformational, transactional, and laissez-faire as revealed on the above three tables that the majority of raters perceived that the leaders are a laissez-faire leadership. This indicates that most raters felt the leaders were a laissez-faire leadership style. This means that many respondents placed the leaders at a score of four indicating they felt the leader is laissez-faire, "agree".

Table 5: Descriptive of Dimensions

Dimensions	Mean	Std. Deviation
Transformational	3.73	0.14
Idealized influence attributes	3.33	0.84
Idealized influence behaviors	3.58	0.85
Inspirational motivation	3.67	0.73
Individual consideration	4.46	0.53
Intellectual stimulation	3.64	0.63
Transactional	3.71	0.09
Contingent Reward	3.41	0.75
Management-by-Exception (active)	3.61	0.70
Management-by-Exception (passive)	4.10	0.58
Laissez Faire	3.78	0.58
perceived service delivery	3.74	0.54

The Effects of Perceived Leadership in Accelerating Service Delivery

Correlation Analysis

The next step of this research was to find if there is any correlation between the dimensions of leadership styles and service delivery. The Pearson correlation analysis was conducted and its values range from -1 to +1. The value closer to either -1 or +1 is the stronger the correlation. The positive correlation shows direct relationships whereas the negative correlation is an inverse relationship. Table 6 presents the correlation analysis data between the mean values of the dimensions of transformational, transactional, and laissez-faire leadership style factors and perceived service delivery.

The correlational coefficients were 0.305 for transformational leadership. This indicated that there is a significant (p-value<0.01) but weak relation between perceived service delivery and transformational leadership style. The findings of transformational leadership were consistent with Aboshaiqah et al (2015). Similarly, there is a significant (p-value<0.01) but weak relation between perceived service delivery and transactional leadership style with a correlation coefficient of 0.275. however, the relationship between perceived service delivery and laissez-faire leadership is negative (-0.214) but significant (p-value<0.01).

The Bartlett's test of sphericity can be used to test for the adequacy of the correlation matrix, i.e., the correlation matrix has significant correlations among at least some of the variables. Bartlett's test of sphericity tests the assumption that the correlation matrix is an identity matrix, that is, all the diagonal terms are 1 and all off-diagonal terms are 0. In the present analysis, the Bartlett's test of sphericity yielded a Chi-Square value of 720.2 and an associated level of significance smaller than 0.00. As can be seen from the above table, all the variables are correlated. Thus, the hypothesis that the correlation matrix is an identity matrix is rejected so that variables are correlated. According to Nancy L. et al. (2005), the KMO (Kaiser-Meyer-Olkin) Measure the sampling adequacy and found it to be 0.772 which is higher than the minimum standard 0.7 designating each dimension has enough items.

Multiple Regressions Analysis

Before analyzing the regression model results, the model adequacy has to be checked. The key assumptions of the regression model are linearity, normality, multicollinearity, and homoscedasticity.

Multicollinearity refers to the situation in which the independent/predictor variables are correlated. When independent variables are linearly related, there is "overlap" or sharing of predictive power. This may lead to the paradoxical effect, whereby the regression model fits the data well, but none of the predictor variables has a significant impact in predicting the dependent variable. For this research, both the "tolerance" values (greater than 0.10) and the "VIF" (Variance Inflation Factor) values (less than 10) are all quite acceptable and also there is no high correlation (r> 0.8) among the independent

variables (Table 9). Thus, multicollinearity does not seem to be a problem for this study (the highest VIF is 1.99). The PPLOT is a normality probability plot that can be used to investigate whether the data are from a normal distribution. The data are plotted against a theoretical normal distribution in such a way that the points should form an approximate straight line. The P-P plot (Figure 2) below shows that all points are near to the linear lines and this indicates that the assumptions of normality were satisfied. The assumption of normality of the dependent variable is one of the basic criteria to fit and use a regression model.

Table 6: Correlations between Perceived Service Deliveries with Leadership Styles

		Perceived service delivery	Transformation	Transactional	Laissez Faire
Perceived service delivery	Pearson Correlation	1	.305**	.275**	.214**
	Sig. (2-tailed)		0.000	0.000	0.000
Transformation	Pearson Correlation	.305**	1	.688**	.393**
	Sig. (2-tailed)	0.000		0.000	0.000
Transactional	Pearson Correlation	.275**	.688**	1	.356**
	Sig. (2-tailed)	0.000	0.000		0.000
Laissez Faire	Pearson Correlation	-.214**	-.393**	-.356**	1
	Sig. (2-tailed)	0.000	0.000	0.000	
**. Correlation is significant at the 0.01 level (2-tailed).					

Table 7: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.772
Bartlett's Test of Sphericity	Approx. Chi-Square	720.223
	df	6
	Sig.	.000

Figure 2: The Normal P-P Plot

Another assumption to be checked in fitting a regression model is the assumption of equal variance, homoskedasticity, which means that the error variance associated with the regression model is equal across all levels of the independent variable or the variance of the dependent variable does not change for each observation or for a range of observations. For this assumption test, we use plots of the residuals which are useful for revealing heterogeneous variances. In our data, the points of the scatterplot are evenly distributed, with no patterned relationship between the residuals and the predicted value. This indicated that the data has no problem with heteroscedasticity. Figure 3 displays the results for the test for homogeneity.

Multiple regression is a statistical technique through which one can analyze the relationship between a dependent or criterion variable and a set of independent or predictor variables. Multiple steps have been undertaken to come up with the best-fit prediction equation where Transformation, Transactional, and Laissez-faire dimensions are the independent variables and the overall respondents' perceived service delivery is the dependent variable.

The relationship between the perceived service deliveries of the followers on the leaders' leadership style was estimated. For this purpose, a multiple linear regression model was performed.

Evaluating the Strength of Prediction Equation: In this study, the results from the study are presented in the ANOVA table (see Table 8). The F value serves to test how well the regression model (Model 1) fits the data. For this study, the computed F statistic is 31.295, with an observed significance level of P-value<0.001.

Thus, the assumption that there is no linear relationship between the predictors and the dependent variable is rejected and that the independent variables significantly predict perceived service delivery. This shows the regression equation is strong enough to explain the relationship between the dependent and independent variables.

The correlation analysis (Table 6) ascertained that the three independent variables - transformational, transactional, and laissez-faire mean leadership style have a significant linear relationship with the dependent variable perceived service delivery.

To gain further insights about how much of the perceived service delivery of employees is explained by leadership style of leaders, an R square is computed (see Table 9 of model 3).

According, about 56.5 % of the variation in perceived service delivery is accounted for the three-leadership style jointly.

Identifying Independent Relationships

Once it has been established the adequacy of the multiple linear regression model, the model can be fitted to assess the relative contribution of each leadership style (independent variable) on perceived service delivery.

Table 10 presents the results of the multiple regression analysis of the influence of mean leadership styles on perceived service delivery. The result indicated that transformational leadership style has a positive and significant predictor (P<0.05) of perceived service delivery in municipalities. In transformational leadership, leaders are more engaged in the uplifting of the employee morals and the employees develop a high level of trust and confidence in their leader. This is consistent with the finding of many scholars (Aboshaiqah et al, 2015; Tsigu, G. T., & Rao, D. P., 2015; Bass,1990; *Krishnan, 2005;* House and Shamir, 1993; Jung and Avolio, 2000). Transformation *leaders providing support, focuses on developing strengths, encouragement, and spends time teaching and coaching followers. This implies that transformational*

Figure 3: The Scatter Plot for linearity and Homoscedasticity

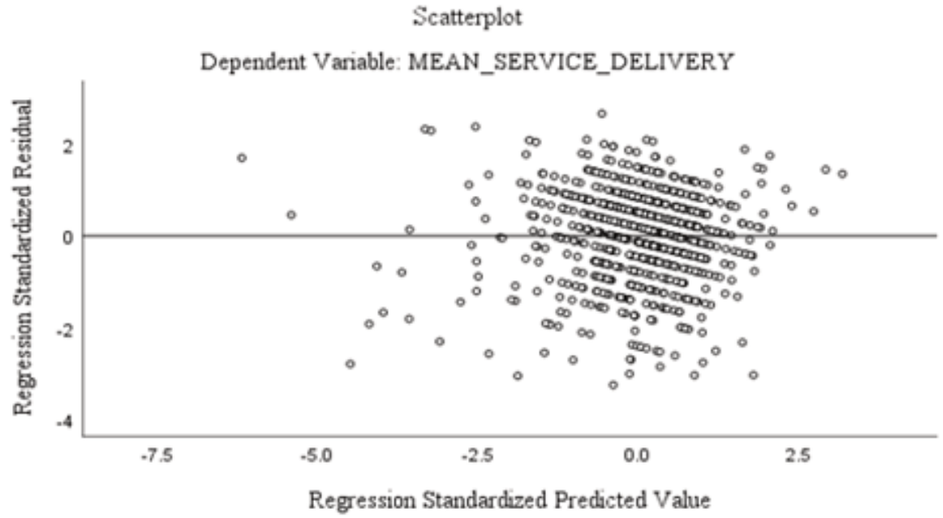


Table 8: The regression ANOVA table

ANOVA[a]					
Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	24.600	3	8.200	31.295	.000[b]
Residual	200.182	764	0.262		
Total	224.782	767			
a. Dependent Variable: perceived service delivery					
b. Predictors: (Constant), Transactional, Transformation, Laissez Faire					

*leaders give individual consideration, they t*reat each employee as individual with different needs, abilities, and aspirations *(Yukl, 2006). Other characteristics that are most portrayed in transformational leaders were inspirational motivation in which leaders t*alk optimistically about the future, enthusiastically about what needs to be accomplished, and articulates a compelling vision for the future.

The results of the research suggest that there is a positive and significant (P<0.05) relationship between perceived service delivery and transactional leadership. This implies that transactional leadership style contributes significantly to the acceleration of the service delivery in municipalities. This finding is in agreement with Hasim and Mahmood, 2012 transactional leadership style has a positive relationship with service quality and other organizational outcomes.

Table 9: Evaluating the Regression Model

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
3	.751	.565	.533	.585	.565	17.631	5	68	.000

ransactional leadership style encompasses three dimensions which are the contingent reward, management by exception active, and management-by-exception passive. Transactional leaders set performance goals and standards for followers in exchange for value outcomes (Bass & Avoilio, 2003).

The finding of the study revealed that the laisses-faire leadership style had a negative effect on perceived service delivery. According to James & Collins, 2008, the laissez-faire leader is an extreme passive leader who is unwilling to influence subordinates' freedom and abdicates his responsibilities. Laisse-faire leaders are failed to provide feedback and recognition to subordinates and they tend to ignore followers' needs, as they do not deal with work-related problems (Hinkin & Schriesheim, 2008b). The present results are consistent with the view that, even if laissez-faire leadership is a form of passive leadership, it can have destructive effects (e.g., Skogstad et al., 2007) because it can damage the employee-supervisor relationship. Everywhere, the assigned leader who frequently avoids responsibilities and shirks duties is perceived as ineffective and dissatisfying by followers. Nonetheless, the present findings suggest that the negative effects of laissez-faire leadership are not universal.

Finally, considering the nature of the variables which are measured on the same five-point scale, it is possible to make Beta values (standardized regression coefficients of Table 10 model 2) as a basis for comparing the effects of leadership style on perceived service delivery. The size of the Beta weights indicates the strength of their independent relationships. From the coefficients table, it can be seen that transformation leadership has the highest Beta (B=0.192, t=3.980, p-value<0.00); transactional has the second-highest Beta coefficient of 0.107 (t=2.251, p<0.025) and Laissez-Faire has the Lowest Beta coefficient of 0.101 (t=-2.692, P<0.007). The direction of the coefficients also sheds light on the nature of the relationships.

Table 10: The regression outputs

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model 2	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	1.980	0.183		10.845	0.000		
Transformation	0.255	0.064	0.192	3.980	0.000	0.501	1.994
Transactional	0.121	0.054	0.107	2.251	0.025	0.518	1.931
Laissez Faire	-0.093	0.035	-0.101	-2.692	0.007	0.832	1.202

Conclusion and Recommendations

Conclusion

This study focused on the effects of leadership style in accelerating service delivery. This study sought to examine the relationships between leadership style indicators and perceived service delivery.

The study uses the full range MLQ- 5X model to assess and understand the leadership style of leaders or managers in the municipality and how these leadership styles affect service delivery. This will help the leaders to identify which leadership styles is enhance quality service delivery and thereby make necessary improvements. To achieve this, it is worth looking at the leadership styles of leaders and the service delivery in the municipality.

With regards to transformational leadership styles, the lowest score is for idealized influence attributes, and the highest is for individual consideration. The lowest score for idealized influence attributes indicates that leaders are weak in engender trust from and serve as role models for followers, the leaders are respected and hold referent power. On the other hand, the highest score is for individual consideration indicates that the leaders are excellent in recognizing and elevating follower needs and pushes them to higher levels of potential, identifies ways to encourage followers to improve their capabilities and to take on more challenging goals and opportunities. This individual consideration includes leaders treats each person as individuals with different needs, abilities, and aspirations and focuses on developing individual strengths.

The highest-rated idealized influence attributes are Instills pride in being associated with the manager. For idealized influence behaviors, the highest rated Discusses most important values and beliefs," with a mean score of 3.72 (Std. Dev. = 0.97). The highest mean for an inspirational motivation statement is 3.75 (Std. Dev. = 0.92) and the statement is, "Talks optimistically about the future."

With regard to transitional leadership, the highest mean score is for management by exception (passive) with a mean of 4.10 and standard deviation of 0.05. The attribute 'Fails to intervene until problems become serious is the highest mean (4.40) from management by exception (passive) with a standard deviation of 0.84. The lowest mean score is for the contingent reward with a mean of 3.41 and a standard deviation of 0.06. The attribute 'Provides assistance in exchange for effort' is the lowest mean (3.34) from contingent reward with a standard deviation of 1.10.

The last form of leadership style considered is the Laissez-faire leadership style. In this regard, the mean score for Laissez-faire is 3.78 and the standard deviation is 0.08. This shows leaders of the municipal are rated as Laissez-faire by their followers'. The prevalent problems show by the leaders are delaying responding to urgent questions and avoid making decisions.

By considering the overall mean and standard deviation of the three leadership styles comparisons are made. Transformational had a mean score of 3.73 and a standard deviation of 0.14. Transactional leadership style had a mean of 3.71 and a standard deviation of 0.09. Laissez-faire had a mean of 3.78 and a standard deviation of 0.58. This finding indicates that most of the followers categorize the leaders are Laissez-faire leadership style. This indicates that most of the leaders are not made decisions, are not take necessary actions and disregarded their responsibilities. This is the same as the absence of leadership or avoidance of it.

To see the relationship between the leadership style and the perceived service delivery the correlation analysis was computed. Accordingly, the correlational coefficients were 0.305 for transformational leadership, 0.275 for transactional leadership, and -0.214 for laissez-faire leadership with the perceived service delivery. This indicates that the relationships are weak. However, the analysis indicated that there is a statistically significant correlation (p-value<0.01) between transformational, transactional, and laissez-faire leadership styles with the perceived service delivery.

To see the effect of the leadership style on the perceived service delivery a regression model is fitted. The findings indicated that transformational and transactional leadership style has a positive and significant predictor (P<0.05) of perceived service delivery in municipalities. However, the Laisses-Faire leadership style had a negative but significant (P<0.05) effect on perceived service delivery.

The study also shows that the laissez-faire leadership style is a relatively dominant leadership style in municipalities (indicated in the descriptive analysis). However, it has a negative relationship with perceived service delivery (as shown in the multiple regression model). This negative relationship in the multiple regression analysis between the perceived service delivery and laissez-faire leadership style indicated that leaders who practiced lease-faire leadership style more, the perceived service delivery will be ineffective. The poor service delivery in municipalities is partly attributed to the prevalence of the laissez-faire leadership style. Based on this conclusion, one may recommend that the laissez-faire leadership style should be changed to a mixed of transformational and transactional leadership styles, which has the strongest effect on service delivery, as per the regression result of this paper.

Recommendations

This chapter presents recommendations based on the research findings.

- Most of the leaders follow laissez-faire leadership style. The laissez-faire is the dominant leadership style among the leaders or managers in municipalities of selected cities in Ethiopia. Such leaders are not involved when important issues arise, they are not made decisions, delay responding to urgent questions and they absent when needed. This is the same as the absence of leadership. This indicates that the leaders or managers are not assigned based on their leadership or management skills. As an alternative, in short term, giving basic leadership skills through training or assigning an advisor in every action of the leadership can be an immediate solution. In the long-term giving leadership education for the leader or assign leaders based on their performance can supplement transactional leadership behavior with transformational leadership behavior.
- The study results recommended that leaders should adopt a hybrid approach in combination with transformational and transactional leadership styles in municipalities.
- The suggestion for future research on this subject is to employ longitudinal study to see if there were any developments, with possibilities to create a training program for the leaders to work on their weaknesses on leadership style and finally to improve service delivery.

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Determinants of Total Factor Productivity of Large and Medium-scale Manufacturing Industries in Ethiopia: Time Series Analysis

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Abstract

Productive manufacturing industries are very important in accelerating the pace of long-term economic growth and hence living standards in a given country. Therefore, this paper aims to investigate the main determinants of total factor productivity (TFP) of large and medium scale manufacturing industries in Ethiopia for the period 1993-2018. An econometric model (system GMM) was applied to analyze the determinants of TFP growth of large and medium manufacturing industries. The result from the econometric analysis confirmed that the intensity of imported raw materials, the loan provided to the manufacturing industries, foreign direct investment, human capital, and infrastructure growth (road coverage) had a significant positive effect on the TFP of Large and Medium Scale manufacturing industries. However, export intensity and macroeconomic instability(inflation) adversely affected TFP. The descriptive analysis showed that, in general, the number of firms, size of jobs created, and value-added per worker by large and medium scale manufacturing industries are continuously increasing from time to time and this sector is dominated by agro-processing industries (food & beverage subsectors) and non-metallic mineral industries. Regardless of the continuous rise in number, employment, and value-added per worker, there has been no similar progress in manufactured exports. Further, it is proved that the current operation of Large and Medium Scale Manufacturing Industries in Ethiopia is highly constrained by a shortage of supply of raw materials; absence of demand for products, and lack of working capital. Therefore, the government should focus on policies aimed at human capital formation, loan access, infrastructure development, attracting foreign direct investment, and creating a stable macroeconomic environment to intensify TFP of Large and Medium Scale manufacturing industries.

Keywords: manufacturing, productivity, determinants, GMM, Ethiopia.

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Introduction

During the last eighteen years, Ethiopia has become one of the fastest-growing economies in the world with an average gross domestic product (GDP) growth rate of about 10% per annum. But the Ethiopian economy is still subject to structural problems. Relative to other developing countries, the base of Ethiopia's manufacturing sector remains to be insignificant (Haile, Srour, & Vivarelli, 2017). The industry sector in the general and manufacturing sector, in particular, has a limited share in terms of production, employment, exports, and inter-sectoral linkages (AACCSA, 2014 &Arkebe, 2018). For instance, the contribution of the manufacturing sector to the gross domestic product was only about 6.4 % in 20018 (NBE, 2018). Its share to GDP is still lower than the sub-Saharan African average which is nearly 10% (Signe, 2018). Though the share of the manufacturing sector is showing slight improvement over time, the service and agriculture sectors are still dominant, constituting about 39% & and 35 % of the country's gross value added, respectively (NBE, 2018).

The current government of Ethiopia has recognized the industry sector in general, the manufacturing sector in particular as a fundamental path to sustainable economic growth and development, at least by prescribing policy. In 2002/03, the Ethiopian government articulated a complete industrial development strategy with the principles of a free-market economy. In addition, the country developed an overstretched comprehensive industrial development strategic plan (2013-2025), aiming to create high manufacturing capability and thereby to bring about the structural change in the economy that plays a leading role in the overall development of the country (FDRE Ministry of Industry, 2013).

Manufacturing industries are a key determinant of long-term economic growth and hence living standards. As economies transform from primary agricultural-based economies to manufacturing-based ones, almost every aspect of life in society could be sustainably changed as it helps to create wealth in the economy. Many economists argued that the expansion of the manufacturing sector is an engine of the growth and development process. It plays a key role in the socio-economic transformation of the economy of a given country (Eshetie, 2018). The importance of the manufacturing sector for economic growth has been ascribed to higher income elasticity of demand for manufactured goods and higher potential of productivity catch-up (Rodrik, 2011; Haraguchi, 2015). Again, when the productivity in the manufacturing sector increases, surplus labor will shift from non-manufacturing activities where there are diminishing returns (Olamade & Oni, 2016).

Recognizing this role, Ethiopia has given more emphasis to the development of labor-intensive manufacturing industries which have a strong backward linkage to agriculture (Ansu et al., 2016). However, despite the policy prescriptions, the manufacturing sector is still in its infant stage dominantly focusing on semi-processing sub-sectors. That implies that the industrialization policy prescriptions could not change radically the industry sector in general and the manufacturing sector in particular.

The performances of the manufacturing industries have generally been far from the target set on the GTP (NPC, 2018). During the first Growth and Transformation Plan implementation period (2010/11-2014/15), it fell short of the planned target both in terms of growth performance and structural change (GTP-II, 2016). During this period, the share of the manufacturing sector in total GDP remained below 5 %, it has registered an annual average growth rate of 14.6 %. The contribution of the manufacturing sector to overall GDP has not only been below the planned target, but it has also remained low relative to the mean performance of the Sub-Saharan Africa (SSA) countries. In the second growth and transformation plan (GTP-II) manufacturing industry is projected to grow by an average annual growth rate of 21.9% and its share in the overall GDP was projected to increase from less than 5% in 2014/15 to 8% by 2019/2020. But, still, the share of this sector in overall GDP in 20018 was poor, accounting for about 6 % (NBE, 2018). This figure is still lower than the sub-Saharan Africa average of nearly 10% (Signe, 2018). Further, the share of manufactured exports in total exports remained less than 13% (Arkebe, 2018). This seems unanticipated, given the emphasis placed by the Ethiopian government to achieve structural transformation through industrial policy.

For many decades, economists have debated on the sources of total factor productivity (TFP) productivity in the manufacturing sector. The endogenous theorists such as Romer, 1990; Todaro & Smith, 2012 and other scholars identified many factors that determine the performance of the manufacturing sector productivity in developing countries (NPC, 2018). The theoretical and empirical literature clearly shows that the factors that affect the Total Factor Productivity and output of the manufacturing sector vary from country to country (Ilyas et.al, 2010). But in general, the common determinants of TFP examined in the empirical literature includes variables such as trade openness, macroeconomic stability (inflation rate), human capital, financial sector development (credit to the private sector), governance, economic growth, infrastructure, and research and development, FDI, lending rate, institutions among others (Todaro & Smith, 2012; Frija et.al, 2015; Weil, 1992; Akinlo, 2006; Ford et al., 2008; Arisoy, 2012; Park, 2010;

Baltabaev, 2013; Blomstrom et al., 2000; Demena & van Bergeijk, 2019; Calderón & Servén, 2014; Frija, et.al, 2015; Isaksson, 2007; Kariithi,2017; Jun, et. al, 2007; Xu, et. al.2020; Fadiran & Akanbi, 2017; Rasheed, 2010; Habib, Abbas, & Noman; 2019; Timuno, 2017; Odior, 2013; Olomola & Osinubi, 2018). Given the large variety of the variables that determine total factor productivity, in this study those variables that are commonly touched in the majority of the above theoretical and empirical studies, and are relevant within the context of my study are identified. In addition, the availability of data in Ethiopia is considered while identifying the main determinants of TFP in the large and medium scale manufacturing industries.

Some scholars like Arkebe (2018) have made descriptive analyses of the structure and performance of manufacturing industries in Ethiopia. But his study does not objectively identify the main factor behind the performance of the sector. Melaku (2013) also analyzed the trend and components of total factor productivity (TFP) growth in the manufacturing sector in Ethiopia. But he did not identify the main factors behind TFP growth in the manufacturing sector. Further, there are limited time-series empirical studies that attempted to analyze the determinants of TFP growth in the manufacturing sector in Ethiopia. Therefore this research tries to fill the aforementioned research gap by identifying the main determinants of TFP growth in large and medium scale manufacturing industries (LMSMI) in Ethiopia using quantitative data. In addition, the trend and structure of the Ethiopian manufacturing sector are analyzed descriptively.

Research Objectives

The main objective of the study is to analyze the determinants of total factor productivity in the large and medium-scale manufacturing industry in Ethiopia over the period 1993-2018. The study tries to address the following specific objectives:

i. To analyze the trend and structure (number, employment, and value-added) of the large and medium-scale manufacturing industry in Ethiopia over time.
ii. To investigate the main factors that affect total factor productivity (TFP) in the large and medium-scale manufacturing industry in Ethiopia.

Material And Methods

Data Sources

The study has used twenty-six-year time series data starting from 1993 to 2018. The annual data were obtained from Central Statistical Agency, National Bank of Ethiopia (NBE), Ethiopian Economics Association (EEA), National planning commission, and other international data sources like World Bank (WB), UNCTAD), and IMF.

Variable Description and Measurement

Total Factor Productivity (TFP): is the share of output not described by the number of physical inputs used to produce the output. It was constructed by using the Tornqvist-Theil index approach.

Human capital (ENROL): Due to the absence of human capital index and educational attainment-related data, secondary school enrolment is included in the model as a proxy for human capital. This explanatory variable is expected to have a positive impact on total factor productivity.

Loan (LO): Financial shortage is a major limitation to any manufacturing firm. Some organizations that venture into the manufacturing business do not have sufficient capital or funds to boost their business (Kariithi,2017). Hence the ratio of bank loans to the large and medium scale manufacturing industries will be included in the model.

Foreign Direct Investment (FDI): In this research, FDI is measured in terms of the ratio of foreign firms to total firms in large- and small-scale manufacturing industries. FDI is expected to have a positive effect on total factor productivity growth

Export intensity (EXP): Export intensity indicates the level of exposure to foreign output markets and it is measured as the ratio of manufacturing export to the gross value of production.

Import intensity (IMP): This gauges the firm's degree of exposure to foreign input markets and it is measured as the ratio of the value of imported raw materials to the total value of raw materials used.

Road (ROAD): The level of physical infrastructure like a road can boost total factor productivity through increasing resources and enhancing the productivity of invested capital (Frija, et.al, 2015). Infrastructure can facilitate the reliability of material supply and output delivery, can reduce the delivery time of goods, and ultimately results in increased productivity and profitability of manufacturing industries. In this research growth in the road, coverage is taken as a proxy for infrastructure development.

Real GDP per capita (GDPPC): The level of domestic demand for manufactured products can affect total factor productivity and employment (Wolfe, 1969). Sufficient domestic demand for manufactured products may force enterprises to raise output by fully utilizing their capital and labor, thus causing improvement in total factor productivity (Xu, et. al.2020)

INF(INF): High inflationary situation can macroeconomic uncertainty, which is harmful to productivity improvement and economic growth (Ocran,2007). On the other hand, zero levels of inflation or deflation can negatively affect productivity growth by discouraging producers to produce more goods and services by employing different factors of production. As a result, some economists argued that up to some threshold level, inflation can encourage investment and productivity growth (Khan, 2006). Therefore, the rate of inflation is included as one of the determinants of TFP in large and medium scale manufacturing industries in Ethiopia.

Total Factor Productivity (TFP) Measurement and Estimation

Productivity can be measured in terms of single-factor productivity measures and multi-factor productivity measures which is also known as total factor productivity (Tsegay et.al, 2017). Total Factor Productivity (TFP) is a multi-factor productivity measure that captures the share of output not described by the number of physical inputs used to produce the output. As such, its level is determined by how efficiently and intensely the inputs are utilized in production (Comin, 2010).

There are many approaches to measuring TFP. In this research, the Tornqvist-Theil index was used to construct the TFP index. This approach allows estimating TFP based on simple pre-defined formulas, and without the need for econometric estimation. This approach avoids the statistical problems resulting from 2nd-stage regressions as the omitted variable problem not resolved in the 1st stage may provide inefficient and biased estimates in the 2nd stage regression (Wang & Schmidt, 2002). According to this approach, growth in TFP is considered comparable to growth in technical change. The Tornqvist-Theil output, input, and TFP index in logarithm form can be specified as follows:

$$\textit{Output index} = ln\left[\frac{Q_t}{Q_{t-1}}\right] = \frac{1}{2}\sum_j (R_{jt} + R_{jt-1})\, ln\left(\frac{Q_{jt}}{Q_{jt-1}}\right)$$

$$\textit{Input index} = ln\left[\frac{X_t}{X_{t-1}}\right] = \frac{1}{2}\sum_j (S_{jt} + S_{jt-1})\, ln\left(\frac{X_{jt}}{X_{jt-1}}\right)$$

$$\textit{TFP index} = ln\left[\frac{TFP_t}{TFP_{t-1}}\right] = ln\left[\frac{Q_t}{Q_{t-1}}\right] - ln\left[\frac{X_t}{X_{t-1}}\right]$$

Where;

Rj,t = the share of output (*j*) in total revenue in time (t),
Qj,t = the output (*j*) in time (*t*),
Si,t = the share of input (*i*) in total input cost, and
Xi,t = the input (*i*) in time (*t*),

The TFP index measures TFP changes by calculating the weighted differences in the growth rates of outputs and inputs. The growth rates are in log-ratio form, and the weights are revenue and cost shares for outputs and inputs, respectively.

The Model

The main focus of this study is to analyze the determinants of TFP in the large and medium scale manufacturing sector by using time series data over 1993-2018. Once the TFP is estimated by using the Tornqvist-Theil technique, the following estimable time series model is specified to investigate the determinants of TFP in the large and medium-scale manufacturing sector in Ethiopia.

$$TFP_t = \beta_0 + \beta_1 IMPIN_t + \beta_2 LOAN_t + \beta_3 FDI_t + \beta_4 EXPIN_t + \beta_5 ENROL_t + \beta_6 ROAD_t + \beta_7 GDPPC_t + \beta_8 INF_t + v_t \quad (4)$$

Where is the constant term, **IMPIN** is the intensity of imported raw materials, **LOAN** is a bank loan to large and medium scale manufacturing firms, **FDI** is foreign direct investment index, **EXPIN** is the intensity of exported outputs, **ENROL** is a growth rate of secondary school enrolment, **ROAD** is growth in road coverage which is a proxy for infrastructure development, **GDPPC** is growth rate of real per capita income, **INF** is a rate of inflation, and is an error term that captures all other omitted factors with) = 0 for all i and t .Parameters to are the elasticities of **TFP** concerning each explanatory variable.

Method of Estimation

Econometric modeling and descriptive statistics were employed to analyze the data. To show the structure and performance of large and medium-scale manufacturing industries, I used simple descriptive statistics. On the other hand, to analyze the determinants of manufacturing industry growth, I applied an econometric model (Generalized Method of Moment). GMM estimators are more efficient than the common method of moment estimators as it uses a weighted matrix estimation technique that allows accounting for heteroskedasticity and/or serial correlation (Hall, 2005; & Baum, Schaffer, & Stillman, 2003). GMM is also a robust estimator in that it does not require information on the exact distribution of the disturbances (Eviews-9 Manual).

Difference GMM and system GMM are the two recent common variants of GMM. But, given the poor performance of the difference GMM models, particularly in the presence of high serial correlation, Blundell and Bond (1998) designed a system GMM that uses lagged first differences of the explanatory variables and the dependent variable as instruments in addition to the lagged level instruments. Therefore, in this paper, I used the system GMM to identify the determinants of total factor productivity in the manufacturing sector in Ethiopia over the period 1993-2018. Before estimating the GMM model, the stationarity of the series over time was checked. To do this, the standard *Augmented Dickey-Fuller* (ADF) and *Phillips–Perron*(PP) unit root tests were applied. In addition, to test the adequacy of the GMM model, Sargan's J-test of over-identifying restrictions was used.

Results And Discussion

Descriptive Analysis

Trend and Structure Of Large And Medium Scale Manufacturing Industries (LMSMI)

Under this section, therefore, the trend and structure of large and medium scale manufacturing industries are assessed in terms of the total number of firms, size of employment created, value-added, value-added per labor, and export intensity (export per value of production).

A total number of firms: As depicted in Figure-1(panel A), the total number of large and medium scale manufacturing industries are continuously increasing from time to time. In 1996 the total number of large and medium scale manufacturing firms was 642. After ten years this number has almost doubled and reached 1243 in 2006. The number of large and medium scale manufacturing firms has increased by around three-fold and reached 3627 in 2017.

The distribution of the firms by sector is reported in Table 1. Accordingly, food and beverages, nonmetallic mineral products, and furniture together constitute more than 50% of the large and medium scale manufacturing firms.

Jobs/employment created: As depicted in Figure-1(panel B), the total size of jobs created by the large and medium scale manufacturing sector is generally increasing during the last two decades, except for the year 2015. During 1996-2006, the total number of jobs created in this sector

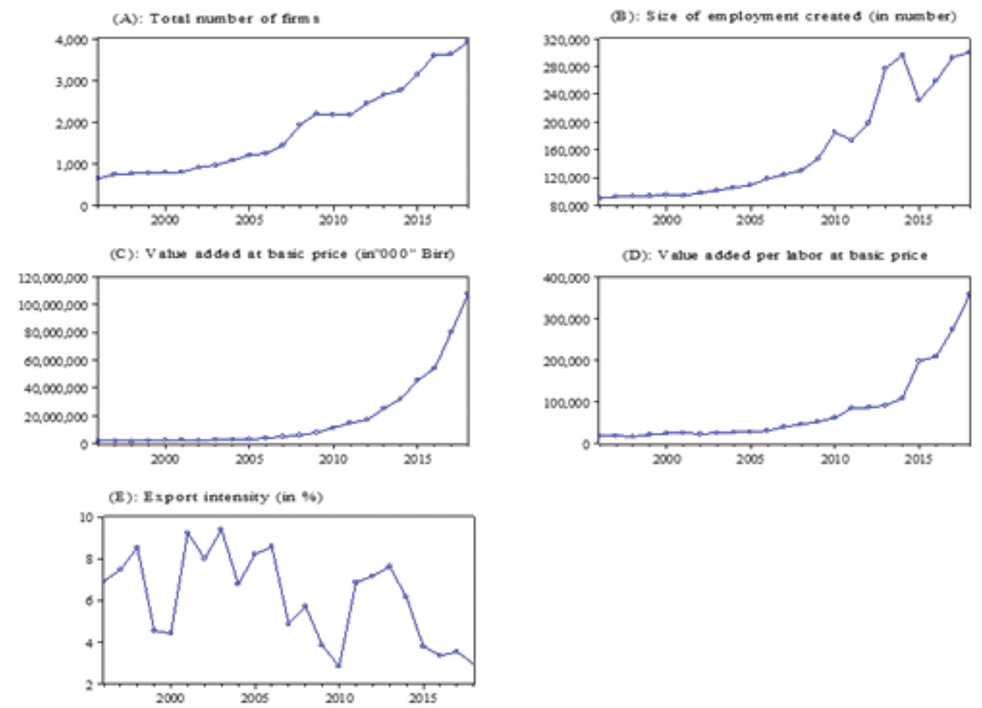

Figure 1: Performance of Large and Medium Scale Manufacturing Industries (1992-2017)

Source: Own Computation Based on CSA Data

increased by nearly 32%. In the next eleven years (1997-2017), total employment created by the firms has increased by 147.4%. This significant increment in the number of firms and employment is due to the government interventions to support the manufacturing sector through a range of incentives like favorable land lease rates, access to commercial credit, free imports of inputs, generous tax breaks, together with substantial investments to improve infrastructure and human capital (Ansu et al., 2016).

Table 1: Number and Share of Large and Medium Scale Manufacturing Industries by Sector, 1996-2017

Industrial Group	Number of Establishments									
	1996		2001		2006		2011		2017	
	Number	Share (%)	Number	Share (%)	Number	Share (%)	Number	Share (%)	Number	Share (%)
Food, Beverage & Tobacco	175	27.3	252	31.7	374	30.1	687	31.7	950	26.2
Textile & Wearing apparel	55	8.6	59	7.4	73	5.9	77	3.6	392	10.8
Leather & Foot wear	63	9.8	54	6.8	63	5.1	141	6.5	159	4.4
Wood & Paper	69	10.7	73	9.2	116	9.3	208	9.6	213	5.9
Chemicals & Chemical Products	35	5.5	40	5.0	53	4.3	75	3.5	148	4.1
Rubber & Plastic	15	2.3	32	4.0	63	5.1	106	4.9	261	7.2
Other Non-Metallic Mineral	85	13.2	87	10.9	152	12.2	409	18.9	649	17.9
Iron, Steel % Metal	42	6.5	63	7.9	124	10.0	180	8.3	304	8.4
Machinery, Equipment & Motor vehicle	28	4.4	17	2.1	23	1.9	14	0.6	51	1.4
Furniture	75	11.7	121	15.2	202	16.3	271	12.5	500	13.8
Total	642	100	796	100	1243	100	2168	100	3627	100

Source: Own Computation Based on CSA Data

On the other hand, food and beverages, textile and wearing apparel industries, and wood & paper industries were the three dominant job-creating sectors constituting nearly 72% of the total employment created in large and medium scale manufacturing industries in 1996. As reported in Table 2, over time the share of rubber & plastic, and non-metallic mineral industries continuously increased and become among the main job creators in 2017. At the end of 2017, food & beverages, textile & wearing apparel, rubber & plastic, and non-metallic mineral industries together accounted for more than 65% of total registered manufacturing employment. This clearly shows that the manufacturing sector in Ethiopia is at its early stage of development which exists before industrialization "take off". In this early stage, labor-intensive industries have higher development potential in terms of value-added (Haraguchi, 2015).

Value-added: Figure-1, panel C and Panel D show the trend of total value-added and value-added per worker between 1996 to 2017. Accordingly, the value added by the large and medium scale manufacturing industries is showing nonstop increment from time to time. Not only the total value-added but also the value-added per worker is increasing continuously. The value added by the large and medium scale manufacturing industries was worth about 1.6 billion Birrs

Table 2: Number And Share Of Jobs Created By LMSMI By Sector, 1996-2017 Years

Industrial Group	Number of Employees									
	1996		2001		2006		2011		2017	
	Number	Share (%)	Number	Share (%)	Number	Share (%)	Number	Share (%)	Number	Share (%)
Food, Beverage & Tobacco	24,180	26.6	28,082	30.0	36,415	30.8	68414	39.5	62309	21.3
Textile & Wearing apparel	33,441	36.7	28,004	29.9	26,199	22.1	19233	11.1	51009	17.4
Leather & Foot wear	7,748	8.5	7,040	7.5	7,914	6.7	14019	8.1	13958	4.8
Wood & Paper	8,045	8.8	6,552	7.0	9,818	8.3	14064	8.1	12292	4.2
Chemicals & Chemical Products	2,825	3.1	4,291	4.6	5,668	4.8	9744	5.6	17830	6.1
Rubber & Plastic	2,219	2.4	3,401	3.6	6,899	5.8	10984	6.3	42900	14.6
Other Non-Metallic Mineral	6,038	6.6	7,328	7.8	10,093	8.5	17230	9.9	35407	12.1
Iron, Steel % Metal	3,127	3.4	3,577	3.8	7,918	6.7	10967	6.3	18871	6.4
Machinery, Equipment & Motor vehicle	1,141	1.3	1,232	1.3	1,794	1.5	2271	1.3	9337	3.2
Furniture	2,275	2.5	4,230	4.5	5,688	4.8	6471	3.7	29145	9.9
Total	91,039	100	93,737	100	118406	100	173397	100	293058	100

Source: Own Computation Based on CSA Data

in 1996. In the same year, the value-added per person was 17,507 Birr. In the next decade, these figures (value-added and value-added per worker) have almost doubled to 3.7 Billion Birr and 30,996 Birr in 2006 (see also Table 3 and Annex Table-A).

After 2006, value-added and value-added per worker has tremendously increased and reached 80.3 Billion Birr and 273,930 Birr in 2017, respectively. This seems promising performance, though the share of the manufacturing industry to the entire economy is still very low. This research also indicated that the largest value addition was come from the agro-processing industries (food & beverage subsectors), non-metallic mineral industries, and textile and wearing apparel, which together accounted for close to 60% share between 1996-2017. However, the relative share of the value added by the food and beverage industries declined after 2006.

***Exports performance*:** Regardless of the continuous rise in manufacturing value-added and employment, there has been no similar progress in manufactured exports. As reported in Figure-1, panel-E, the ratio of export to a gross value of production is highly volatile. During 1996-2017, the highest export to a value of production (9.4%) was recorded in 2003 while the lowest ratio (2.8%) was in 2010. The composition of the export reported in Figure-2 clearly shows that almost all of the manufactured exports were low-value products, which were generated in the leather & footwear, food and beverage, and textiles, and apparel industries. This could be due to weak international competitiveness that results from low productivity and low-quality products.

Table 3: Amount and Percentage Distribution of Value Added in LMSMI by Industrial Group, 1996–2017

Industrial Group	Value-added at a basic price (in "000000" birr)									
	1996		2001		2006		2011		2017	
	Value	Share (%)	Value	Share (%)	Value	Share (%)	Value	Share (%)	Value	Share (%)
Food, Beverage & Tobacco	732.9	45.99	1,269.2	53.58	1,619.4	44.12	8,169.4	55.49	25,960.8	32.34
Textile & Wearing apparel	171.8	10.78	154.4	6.52	146.0	3.98	437.2	2.97	9,553.3	11.90
Leather & Foot wear	145.8	9.15	112.8	4.76	160.5	4.37	1,130.3	7.68	3,053.0	3.80
Wood & Paper	138.1	8.66	154.9	6.54	226.5	6.17	859.5	5.84	6,432.5	8.01
Chemicals & Chemical Products	50.7	3.18	110.0	4.64	178.2	4.86	1,308.9	8.89	3,273.0	4.08
Rubber & Plastic	52.9	3.32	134.6	5.68	325.5	8.87	746.6	5.07	4,805.6	5.99
Other Non-Metallic Mineral	151.3	9.49	204.7	8.64	576.1	15.70	2,086.4	14.17	11,785.7	14.68
Iron, Steel & Metal	84.5	5.30	86.7	3.66	255.5	6.96	-530.2	-3.60	5,923.7	7.38
Machinery, Equipment & Motor vehicle	41.1	2.58	103.5	4.37	93.3	2.54	223.5	1.52	2,529.3	3.15
Furniture	24.7	1.55	38.1	1.61	89.1	2.43	291.6	1.98	6,960.8	8.67
Total	1,593.8	100	2,368.7	100	3,670.2	100	14,723.2	100	80,277.4	100

Source: Own Computation Based on CSA Data

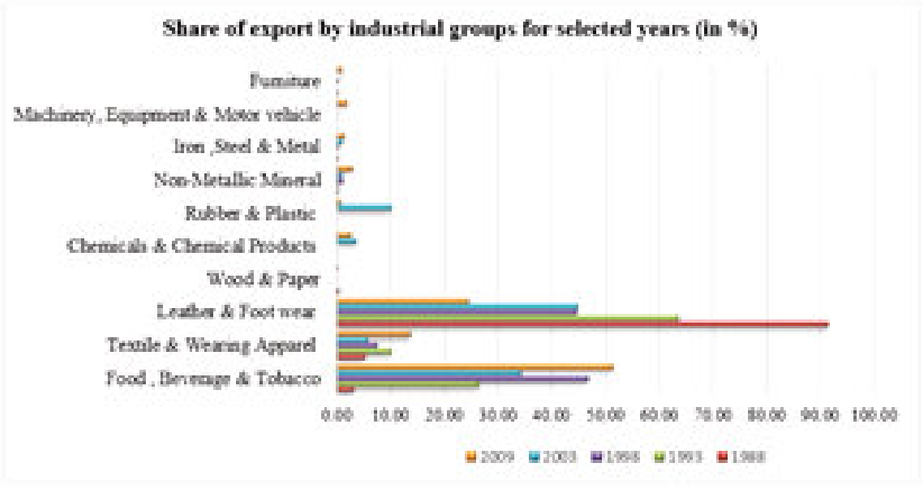

Figure 2: Share of Export by The Industrial Group for Selected Years (1992-2017)
Source: Own Computation Based on CSA Data

Firm-level Major Operational Problems

Based on the 2017 CSA annual survey on Large and Medium Scale Manufacturing Industries in Ethiopia, the first major operational problem faced by the LMSMIs is summarized in Annex Table-C. Accordingly, all manufacturing industries reported a shortage of supply of raw materials as the first major operational problem faced during each survey year. The industries reported the absence of demand for products (except for Leather & Footwear) as the second major operational problem they faced. Lack of working capital (Food, Beverage & Tobacco; Textile & Wearing apparel; Iron, Steel & Metal; Machinery, Equipment & Motor vehicle and Furniture) and shortage of supply of spare parts (for Wood & Paper; Chemicals & Chemical Products and Rubber & Plastic) are the third major operational problem the large and medium scale manufacturing industries faced.

Table 4: Unit Root Analysis

Variables	ADF Unit Root Test			PP Unit Root Test		
	T-	Prob.Values	Decision	T-	Prob.Values	Decision
TFP	-	0.0007***	Stationary	-5.599315	0.0006***	Stationary
IMPIN	-	0.072*	Stationary	-3.509865	0.060*	Stationary
LOAN	-	0.083*	Stationary	-2.810255	0.071*	Stationary
FDI	-	0.066*	Stationary	-2.845941	0.066*	Stationary
EXPIN	-	0.093*	Stationary	-3.308686	0.088*	Stationary
ENROLg	-	0.021**	Stationary	-4.067676	0.019**	stationary
ROADg	-	0.037**	Stationary	-3.189653	0.033**	stationary
RGDPPCg	-	0.007***	Stationary	-4.550280	0.0068***	stationary
INF	-	0.031**	Stationary	-3.812377	0.0328**	Stationary

Source: Own computation based on CSA data
*Note: Significance at 1%,5% and 10% is shown by ***, **and *respectively.*

Econometric Analysis

Stationarity Test

The results of the ADF and PP unit root test are reported in Table 4. The empirical results confirmed that TFP and real GDP per capita have no unit root problem at a 1% level of significance. Similarly, the null hypothesis of the unit root was rejected at a 10% significance level in the case of imported raw materials intensity, export intensity, FDI, and loan while secondary school enrolment growth, growth in road coverage, and rate of inflation are stationary at 5% level of significance.

Determinants of Total Factor Productivity (TFP) in LMMI

Having constructed firstly the TFP index, I specified and estimated the TFP model using this index as the dependent variable. As it was discussed previously in the methodology part of this paper, I estimated the TFP model through system GMM that uses lagged first differences of the explanatory variables and the dependent variable as instruments in addition to the lagged level instruments. The results of the estimated model for the TFP determinants are presented in Table 5 below. The standard Sargan's J-test (overidentifying restrictions test) reported in Table 5 clearly shows that the model is correctly specified (the specified variables are proper instruments) and the instruments are uncorrelated to the error process (orthogonal

to the error process). The endogeneity test (difference-in-Sargan" statistic) reported in Annex Table-B also confirmed the robustness of the specified model.

The result reported in Table-5 indicates the one period lagged value of total factor productivity (TFP(-1), intensity of imported materials (IMPIN), a loan provided to the industries (LOAN), foreign direct investment (FDI(-1)), export intensity(EXPIN(-1)), secondary school enrolment growth (ENROLg(-1)), growth in road coverage (ROADg), and inflation rate (INF(-1)) have a significant negative effect on total factor productivity of Large and Medium Scale manufacturing industries while the effect of per capita GDP (GDPPCg) is insignificant.

The coefficient of the amount of loan provided to the industries (LOAN (-1) was found to be statistically significant at 5%. That means loan provision to large and medium scale manufacturing industries can help to boost their productivity. The coefficient of LOAN is about 5.6 implying that as the ratio of loan to a gross value of production raises by 1 percent, TFP will boost by 5.6 percent.

Technology, new processes, and managerial skills, and know-how diffusion are commonly pointed out in the literature as drivers of TFP Growth. This study supports the proposition that FDI influences TFP growth which is consistent with theoretical and empirical literature that suggest FDI is a major channel of transferring foreign

Table 5: System GMM result

Dependent Variable: TFP ***(constructed based on Tornqvist-Theil approach)***
Method: Generalized Method of Moments
Included observations: 23
Estimation weighting matrix: HAC

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TFP(-1)	0.462204	0.180067	2.566848	0.0234
IMPIN	1.536703	0.288703	5.322791	0.0001
LOAN	5.623690	2.543702	2.210829	0.0442
FDI	0.539662	0.086499	6.238947	0.0000
EXPIN (-1)	-2.532579	0.524882	-4.825040	0.0003
ENROLg (-1)	1.097423	0.174725	6.280857	0.0000
ROADg	1.221906	0.203357	6.008664	0.0000
RGDPPCg	0.394466	0.387947	1.016803	0.3265
INF (-1)	-0.418338	0.124888	-3.349706	0.0048
C	26.10827	17.23476	1.514861	0.1521
R-squared	0.500081	Mean dependent var		113.1394
Adj.R-squared	0.214413	S.D. dependent var		22.13505
S.E. of regression	19.61903	Sum squared residual		5388.691
Durbin-Watson stat	2.01534	J-statistic		8.002840
Instrument rank	22	Prob(J-statistic)		0.843415

Source: Own computation based on CSA data

technology, familiarizing new processes and managerial skills, and know-how diffusion to the domestic market (Kolawole, 2015; Olomola and Osinubi, 2018). The coefficient of FDI is statistically significant at a 5% level of significance. The result showed that as the ratio of foreign capital to total capital in large- and small-scale manufacturing industries increases by 1% TFP increased by about 0.54 percent. This result is consistent with the findings of Jain, Nair, & Jain (2015); Demena & van Bergeijk (2019); Arisoy (2012); Park (2010); Baltabaev (2013).

Our estimation evidences a positive effect of human capital on total factor productivity growth. The positive effect of human capital, as expected, is consistent with endogenous growth theories and empirical findings (Adejumo, 2012; Ahmed & Bukhari, 2007; Kamaly, 2011; Park, 2010; Romer & Weil, 1992), which argues that improvement in human capital (good education and quality investment in human capital) leads to productivity improvement. Having skilled human capital is essential for the adoption and dissemination of new technologies and production processes which promotes productivity (Martins, Domingues, and Branco, 2018). The result of this research shows that as the secondary school gross enrollment rate increases by 1%, TFP raises by about 1.1%.

Infrastructure development (measured in terms of road coverage) is also one of the factors that positively affect the TFP of the manufacturing sector in Ethiopia. The coefficient of ROADg is about 1.2. This implies that as road coverage grows by 1% TFP increases by 1.2%. This supports the argument that physical infrastructure like roads improves productivity by creating a conducive environment for productivity initiatives (Agénor, Canuto, & Jelenic, 2012; Alvarez-Ayuso, Becerril-Torres, & Moral-Barrera, 2011; Olomola & Osinubi, 2018). It can facilitate and enhance the reliability of services and cost minimization in the delivery time of goods which in turn increases the productivity and profitability of the manufacturing industries (Lucas, 1988; Barro & Sala-i-Martin, 2004).

Domestic demand for manufactured products (measured by real per capita income growth) was found to have a positive effect on TFP growth. But, the coefficient of RGDPPCg was found to be statistically insignificant even at the 10% level. This regression result is contradicting with the theoretical literature that suggests an increase in domestic absorption can lead to an increase in the level of TFP, as the producers get effective demand for their products, they will be encouraged to increase their productivity in the future (Xu, et.al, 2020). However, it is not a surprising result as most Ethiopian consumers have low purchasing power and are highly interested in imported manufactured items than domestic products.

Import intensity is also another factor that determines total factor productivity in large and medium scale manufacturing industries. Many scholars have tried to verify the learning-by-importing hypothesis. However, the evidence on the causal relationship is mixed. Some researchers like Smeets & Warzynski (2013) and Abreha (2019) argued that imported inputs may create the possibilities for technology spillovers which boost total factor productivity of firms. In this research, the coefficient of IMPIN is positive and significant. The coefficient of IMPIN shows that a 1% increase in the ratio of imported raw materials to a gross value of production leads to a 1.45% increase in TFP. This is consistent with the findings of Abreha (2019) for the Ethiopian manufacturing sector. According to AACCSA (2014) and Yibeltal (2018), most of the large and medium scale manufacturing industries are highly dependent on imported raw materials from the international market. The dependency on imported raw materials is relatively high in the machinery &

equipment, rubber and plastic, and the chemical and chemical products manufacturing industries than the others. Such reliance on imported raw materials usually happens due to unavailability, irregular supply and low quality of domestic raw materials, and weak linkage between industries.

Many scholars like Baltabaev (2013), and Kolawole (2015) argued that there is a negative relationship between inflation and TFP. This adverse effect could be due to high and unstable prices that can lead to a lot of economic uncertainties that discourage investors from investing in projects that will improve productivity. The result of this research is also consistent with the above argument. The coefficient of inflation rate (INF) was found to have a significant negative effect on TFP in large and medium scale manufacturing industries at 1% levels. The result reported in Table 5 depicts that as the rate of inflation raises by 1% TFP decreased by 0.42 %. This result is consistent with the findings of earlier empirical studies that suggest unpredictable price level spoils macroeconomic climate for healthy economic growth which in turn adversely affects investment and productivity (Jarrett & Selody, 1982 & Ayob & Hussain, 2016).

Likewise, the coefficient of export intensity (EXPIN (-1)) variable was found to have a significant and negative effect on TFP growth. This seems to contradict with theoretical literature (learning-by-exporting hypothesis) that states that an increase in the participation of industries in the international market will lead to an increase in the level of TFP, as their exposure to foreign output markets helps them to advance their productivity (Isaksson, 2007; Arvas & Uyar, 2014; Siba & Gebreeyesus, 2016). The result of this research is similar to the findings of Crinò & Epifani, 2009) which confirms that TFP growth is negatively correlated with export intensity to low-income destinations.

Sometimes trade openness can adversely affect TFP by making a country specialize in traditional low-technology manufacturing. Due to high competition in export markets, output prices are continuously declining in the international market. This can be expected to drive profit margins down in the manufacturing sector, at least until efficiency gains can assimilate the price reductions. As a result, the export intensity of firms can negatively affect TFP up to some threshold level. Most of the manufactured exports in Ethiopia are characterized by low-value products, which generally went to other low and middle-income markets (Arkebe, 2019). This fact may limit firms' efforts to penetrate the export markets of advanced countries and learn from the best practices at the knowledge frontier (Siba & Gebreeyesus, 2016).

Conclusion and Recommendations

Conclusions

This empirical study seeks to analyze the determinants of total factor productivity in large and medium scale enterprises in Ethiopia (LMSEs). In addition, it tries to assess the trend and structure of LMSEs. This study, therefore, concludes that intensity of imported raw materials, the loan provided to the manufacturing industries, foreign direct investment, human capital formation, stable macroeconomic environment (stable price), and infrastructure growth (road coverage) are necessary to improve total factor productivity of Large and Medium Scale manufacturing industries. However, there is no significant evidence to suggest that growth in per capita income influence TFP growth, despite strong theoretical support. The study also highlights the negative effect of export intensity on TFP growth. This could be because most of the manufactured exports in Ethiopia are characterized by low-value products and high competition in export markets. On the other hand, the descriptive analysis confirmed that the number, jobs created, and the of value-added per worker of large and medium scale manufacturing industries are continuously increasing from time to time. This seems promising performance, though the share of the manufacturing industry to the entire economy is still very low. This sector is dominated by agro-processing industries (food & beverage subsectors) and non-metallic mineral industries. However, regardless of the continuous rise in number, employment, and value-added, there has been no similar progress in manufactured exports. This could be due to the weak international competitiveness of the firms that results from low productivity and low-quality products.

Currently, the operation of Large and Medium Scale Manufacturing Industries in Ethiopia is highly constrained by a shortage of supply of raw materials; absence of demand for products, and lack of working capital.

Recommendations

After identifying the main determinants of TFP, it is important to discuss what sort of policies can be formulated to increase TFP growth in large and medium scale manufacturing industries in Ethiopia. First, policies aimed at human capital formation are very important to increase TFP. Human capital development will help firms to easily upgrade the skills of their workers, to use new and advanced technology, and uninterruptedly advance productivity for the continuous growth of efficiency and competitiveness. Human capital, which includes education and training is not only crucial for increasing total factor productivity, it is also helpful to transfer technology from abroad. Therefore quality institutional arrangements that enhance investment in human capital development are more central. Second, technology transfer through FDI attraction should be fully exploited to boost the total factor productivity in large and medium scale manufacturing industries. Therefore, this research suggests that there should be reforms targeted at attracting more foreign direct investment towards this sector. In line with attracting FDI, the government should further ensure peace and security that create a predictable and safe business environment for foreign firms.

The government should also facilitate loan access to LMSMI. This intervention can enhance TFP growth by creating sufficient capital or funds to boost their business. This measure can also allow the creation of new areas of investment and enhances the productivity of firms.

In addition, resources should be directed towards infrastructure development. Such policy can facilitate the reliability of raw material supply and output delivery, reduce the delivery time of goods, and ultimately results in increased productivity and profitability of manufacturing industries.

Further, achieving high TFP growth also requires creating stable macroeconomic stability that creates a stable and predictable business environment. The rate of inflation should be reasonably moderate and stable to intensify the demand for final goods and services which will, in turn, lead to increased production, and as a result, improved productivity. Otherwise, macroeconomic instability (high and unstable inflation) can negatively affect productivity growth by discouraging producers to produce more goods and services by employing different factors of production.

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Annex

Annex Table-A: Value Added per Worker in LMSME by Industrial Group, 1996-2017

Industrial Group	Value of per worker (in birr)				
	1996	2001	2006	2011	2017
Food, Beverage & Tobacco	30,532	45,194	44,472	139,412	416,646
Textile & Wearing apparel	5,138	5,513	5,573	22,733	107,286
Leather & Foot wear	18,805	16,928	29,284	98,627	218,722
Wood & Paper	17,165	23,629	23,864	61,115	523,308
Chemicals & Chemical Products	17,962	25,651	31,445	134,323	183,542
Rubber & Plastic	23,881	39,572	47,182	67,870	112,019
Other Non-Metallic Mineral	25,069	27,927	97,876	121,091	352,864
Iron, Steel & Metal	27,086	24,239	32,270	48,347	313,983
Machinery, Equipment & Motor vehicle	36,047	84,018	52,801	98,427	270,886
Furniture	10,849	8,999	15,472	49,840	258,833
Total	17,987	25,278	30,956	84,510	273,939

Source: Own Computation Based on CSA Data

Annex Table-B: Endogeneity Test

	Value	df	Probability
	0.10720		
Difference in J-stats	4	1	0.7434
J-statistic summary:			
	Value		
	8.13598		
Restricted J-statistic	4		
	8.02878		
Unrestricted J-statistic	0		

Source: Own Computation Based on CSA Data

Annex Table-C: Percentage Distribution of Establishments by Major Operational Problems Faced (2017).

Industrial Group	Shortage of raw materials	Shortage of spare parts	Lack of demand for products	Lack of working capital	Lack of machinery and equipment	Lack of working space	Problem with electricity supply	Others	No problem	Not stated	Total
Food, Beverage & Tobacco	54.13	1.82	8.34	4.80	3.03	1.82	0.97	3.94	11.71	5.67	4.49	100
Textile & Wearing apparel	30.24	3.97	16.13	7.03	0.00	0.00	1.79	1.42	0.00	5.10	3.03	100
Leather & Foot wear	17.15	1.32	5.61	2.63	1.32	0.00	41.02	3.31	5.61	1.32	8.66	100
Wood & Paper	48.99	10.61	11.11	1.97	3.03	2.02	1.52	2.02	13.18	5.56	3.54	100
Chemicals & Chemical Products	80.70	0.48	9.31	2.34	1.49	2.34	0.78	4.48	18.93	2.24	2.24	100
Rubber & Plastic	87.40	3.09	8.81	3.34	1.79	3.35	0.48	0.48	11.46	9.83	8.83	100
Other Non-Metallic Mineral	24.39	4.29	22.94	4.93	6.77	4.62	4.46	5.78	12.38	4.90	4.29	100
Iron, Steel & Metal	48.09	4.36	21.09	5.89	1.45	2.55	1.09	0.73	9.36	4.00	2.39	100
Machinery, Equipment & Motor vehicle	48.00	2.00	6.00	12.00	4.00	2.00	0.00	3.00	14.00	5.00	4.00	100
Furniture	48.67	2.15	14.59	6.65	1.79	3.86	1.07	3.00	7.58	4.51	7.51	100
Total	48.15	3.51	14.69	4.85	2.81	2.29	3.01	2.71	10.34	5.09	3.51	100

Source: Summarized From Report on Large and Medium Scale Manufacturing and Electricity (2017)

Journal of African Development Studies Submission Guidelines

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