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Message from the Vice President for Research & Community Services

Ethiopian Civil Service University (ECSU) was established to support the transformation drive of building capacity of the public sector both at federal and regional levels through providing specialized education, training, research and consultancy programs and services. The University has been organizing scientific forums such as workshops and conferences with the aim of disseminating scientific research outputs and enriching the same to maintain its quality at different times.

Against this backdrop, the conference was as a continuation from 2019[1] conference under the theme, 'The Sixth National Research Conference on Public Sector Transformation and Development.' A total of 69 research papers were collected by the 6th national research conference organizing committee. Of these, 50 were collected from higher education and training institutions, while 19 were funded by ECSU in the 2012 E.C. (2019/2020) calendar year. Passing through a rigorous review process, of the 69 papers, 40 were successfully recommended for conference representation (18 from ECSU and 22 from outside). The papers primarily were considered since they were directly related with the ECSU research thematic areas and believed to address problem-solving inquires.

Vol 1 of this proceeding contains 17 papers of the 33 that were successfully presented during the two-day conference and passed rigorous pos-conference presentation revision process. The papers have been enriched through incorporation of comments and suggestions gained during the conference. The papers in this volume are categorized into the thematic areas of the Urban Governance & Development Economy & Development and Public Expenditure Management.

Finally, the VPRCO presents this proceeding with great pleasure and sense of honor to all relevant stakeholders.

Dr. Alemayehu Debebe

July 2021

1. URBAN GOVERNANCE & DEVELOPMENT

[1] *In the wake of Covid-19 onslaught, 2020 conference could not be undertaken.*

1.1. Curbing the Collective Voices of Workers in Ethiopia's State-led Industrialization, by Mohammed Seid

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Abstract

Ethiopia has experimented with the East Asian development model of state-led industrial development since 2005. Nevertheless, the implication of such an activist industrial policy on the bargaining power of the country's industrial workers received little scholarly attention. As such this study aims to explore the ideological as well as actual policy externality of Ethiopia's state-led industrialization towards the collective voices of industrial workers. As the finding reveals, the ideology has firmly stood for the strong business-state alliance which ultimately has curbed the collective voices of the country's industrial workers. As a result, the government employs various mechanisms to debilitate representative labour institutions such as the Confederation of Ethiopian Trade Unions and Minister of Labor and Social Affairs. Moreover, it enforces diverse de facto or de jure labour control mechanisms, particularly across the country's Industrial Parks to silence workers' quests for associational rights. Additionally, employing industries have enforced various forms of administrative and punitive measures to subdue the collective voices of their workers. Unless the government navigates towards industrialization with a human face, the voices of local industrial workers will remain marginal.

Keywords: State-led industrialization; collective voices; Ethiopia

I. Introduction

Despite the plethora of development and human or labor rights studies on the subject, there is no scholarly unanimity on the meaning of the term 'collective labor rights' (Redae 2015). Similarly, there are no consensual explanations among scholars of these fields of study over the implications state-led industrializations on the collective labor rights of industrial workers (Anner 2015). As a result, labor rights scholars have shifted their intellectual engagement from finding shared conceptions and explanations of collective labor rights and state-led industrialization to describing the historical track records of countries concerning these two topical development agendas.

Concerning the implication of state-led industrialization on collective labor rights of industrial workers, the experiences of those East Asian countries which followed the 'developmental state' model are plausible demonstrations. The model has historically proved potent for achieving rapid industrialization in East Asian economies. This has been made clear by Herm's (1997:1) unequivocal statement: "Without a doubt, East Asia's economic expansion during the past twenty years is one of the most remarkable economic changes since the Second World

War". At the heart of their economic success, state intervention has been even recognized by the World Bank's 1993 report on the region (Hardy and Hague 2019). Accordingly, the active industrial policy of governments of the region preferentially subsidized export-oriented and labor-intensive industries as priority sectors. But the relationship between the state and the firms was characterized by reciprocity where the state offered firms a subsidy and the firms were expected to do well in the export market (Wade 2003)**.**

Yet, the strong business-state alliance at the heart of state-led industrialization of East Asian countries was partly aimed at curbing the power of labor. Their approach, which was used to suppress the power and wellbeing of their local labor force, has been part of their policy priority for facilitating industrial catch-up particularly in the 1970s, 1980s, and 1990s. It has to be noted that the garment and apparel sectors had been highly competitive so that global apparel manufacturers used to hunt low production destinations with flexible labor regulations (Oya and Schaefer 2019). In response to this global demand, countries of the region negotiated with the incoming firms particularly in the garment and apparel sector by promising less protective labor practices (Staritz and Whitfield 2019).

Low wages and a highly disciplined workforce have usually been presented by East Asian countries as investment incentives to these multinational firms. Hence, to maintain the influx of FDI, national governments of the region has employed *de jure* or *de facto* labor control mechanisms to suppress the bargaining power of labor against global capital. In this connection, countries such as Korea and Singapore curtailed their organized labor by repressing or co-opting labor rights institutions. Similarly, in Hong Kong and Taiwan, the governments enforced the policy of intermingling kinship ties and business networks to limit the emergence of working-class militancy (Oya and Schaefer 2019). Hence, East Asian countries' suppressive labor practices against the collective labor rights of their workers may be viewed from the vantage point of the externalities of economic globalization.

In the same vein, as part of the hyper-competitive trend of economic globalization, the just-in-time production systems in the global apparel production networks necessitate the fluid functioning of the supply chain. As a result, the sector requires effective labor control regimes to prevent the production networks from any forms of work stoppage and disruptions including workers' demonstrations and labor strikes (Staritz and Whitfield 2019). In response to this, countries with state-led industrialization ideology have employed various formal and informal techniques to suppress the collective voices of workers (Anner 2015). For example, the Chinese government has practiced an authoritarian state labor control regime by employing both legal and extra-legal instruments to curtail and discipline workers' collective actions including labor strikes (Hardy and Hague 2919). Similarly, in Bangladesh, the government and employers in the garment and apparel industries had employed the actual labor market conditions and unemployment to discipline the country's labor force (Oya and Schaefer 2019). Likewise, industrial parks in Honduras consistently applied a repressive labor control model whereby employers had direct means of economic and extra-economic coercion over workers (Anner 2015).

Furthermore, multinational apparel manufacturers and brands have been forced to relocate their production sites to new destinations where the local labor force was not only cheap but less

organized which has helped avoid any forms of disruptions to the smooth industrial production process (Hardy and Hague 2019). As such, countries of state-led industrialization in Asia have appropriated their industrial parks as special export processing cites where exceptionally suppressive labor controls have been enforced both by the governments and the employing firms (Oya and Schaefer 2019). Thus, industrial parks of these late-industrializing countries have been industrial workplaces where preferential treatment of global capital over local labor has been enforced.

In contemporary Africa, there have been growing ideological and actual industrial policy commitments towards the East Asian model of state-led industrialization or the 'developmental state'. As parts of their investment incentives to attract those labor-intensive multinational apparel firms to their IPs, many late-industrializing Sub-Saharan African countries follow cheap and less-protective labor policy (Staritz and Whitfield 2019). For example, Mauritius has promoted management-initiated and 'artificial' workers' councils in various IPs of the country to avoid the formations of and pressures from independent and strong labor unions (Oya and Schaefer 2019). Besides, countries such as Mauritius, Lesotho, and Madagascar have followed various *de jure* and *de facto* labor controls mechanisms to suppress the associational rights of local industrial workers at those multinational apparel exporting firms (Oya and Schaefer 2019). Despite its repressive returns towards the voices of local industrial workers, this quest for increasing FDI is compelling policy imperative for countries of Sub-Saharan Africa where unemployment and underemployment have become critical socio-economic and political challenges.

In Ethiopia, the successful track record of the country's rapid-industrialization seems to be resonated from its post-2005 ideological and development policy drives towards developmental state or state-led industrialization. With a low-income economy of Eastern African state, Ethiopia has been remarkable in successfully initiating industrial catch-up to ensure structural socio-economic transformation from a predominantly agrarian economy to a globally integrated industrial economy (Cheru 2014). In this regard, the country's ideological commitment towards state-led industrialization to actively craft investment-friendly industrial policymaking has been remarkable (Qubay 2019). Also, the country has invested heavily in industrial infrastructures, human resource developments, and it offered tax incentives to attract FDI in the garment and apparel industries as priority sectors.

Following the preceding ideological and practical commitments of Ethiopia's state-led industrialization, the country has recently become among those preferred destinations for multinational apparel manufacturers and brands (Barrett and Baumann-Pauly 2019). In 2017, it was ranked as the first recipient of those labor-intensive foreign apparel firms in East Africa and the second in Africa in 2017 (NCTAD 2018). Yet, the largely overlooked development in the history of industrialization is the country's labor rights context. In this regard, leading researchers such as Oya and Schafer (2019), Hardy and Hague (2019), and Mitta (2019) highlighted the challenges of the labor sector in the late-industrializing Ethiopia.

Ethiopia's state-led industrialization has been based on the overarching ideological premise that the existence of a highly organized labor institution could disrupt the smooth industrial production process and thereby affect the influx of FDI (Oya and Schaefer 2019). Accordingly,

the Ethiopian government has followed various forms of repressive mechanisms to weaken the national trade union which is the Confederation of Ethiopian Trade Unions (CETU). It has formally prohibited CETU from initiating workers to organize themselves at their respective workplaces. It has weakened CETU's leadership using administrative and financial manipulations (Hardy and Hague 2019). As a result, the role and power of CETU as an independent representative national labor institution has been significantly limited; instead, it has been supportive of the government policies by downsizing workers' legitimate demands for freedom of association. In a similar vein, Ethiopia's state-led industrialization has deliberately weakened the Ministry of Labor and Social Affairs (MoLSA), which oversees enforcing labor standards (Radae 2015). As a result, what goes on inside the factory gates, MoLSA and affiliated labor rights institutions have been silent and reluctant to take protective measures to ensure that investors to be in compliance with Ethiopia's labor laws and regulations.

Moreover, the government has usually securitized and militarized the workplaces, particularly across the country's IPs to put pressure against workers who initiated associational rights. Furthermore, it usually blocked all the potential institutional avenues through which labor rights institutions could operate, particularly at the country's IPs (Yirgalem 2019). Likewise, multinational apparel manufacturers operating across the country's Industrial Parks (IPs) have employed various mechanisms to suppress the voices of workers. For example, they usually put time pressures against their workers to prevent them from discussing their associational rights (Abebe 2019). Moreover, they usually employed punitive disciplinary measures against workers who initiated unionizations and labor strikes. Additionally, they initiated the establishment of affiliated trade unions to avoid any external drive for the realization of independent and strong labor unions organized by the free and active participation of workers (Oya and Schaefer 2019). Furthermore, weak labor auditing practices of global apparel brand buyers sourcing from Ethiopia's IPs have contributed to the suppression of the collective voices of workers.

The above literature review shows the externalities of state-led industrialization on the collective labour rights of industrial workers. Nevertheless, the topic still experiences significant research gaps in a way of comprehensively understanding the major challenges of collective labor voices from the vantage points of states' development ideology, labor rights institutions, employers, and multinational apparel brands. Besides, little has been researched concerning the exceptional contexts of Ethiopia's state-led industrialization and their implications on the voices of local industrial workers in the country's Industrial Parks.

Towards filling this underlying research gap, this article, therefore, aims to examine the suppressive labor practices against the collective labor rights (freedom of association, the right to collective bargaining, and the right to conduct labor strike) of workers in Ethiopia's state-led industrialization since 2005. It also describes and expounds on various labor-control mechanisms employed by both the Ethiopian government and multinational apparel industries in the country's IPs to silence the voices of local industrial workers. For the purpose of this article, the term state-led industrialization is used to refer to the existence of a strong state which can actively and deliberately lead the country's ambition to structural economic transformation through industrialization. As such, the ideology rests on the underlying claim

that states shall focus on attracting FDI, particularly in those labor-intensive garments and apparel sectors to create sizable number of industrial jobs and to easily join the sectors' global market. Finally, the ideology propounds for a highly disciplined and controlled workforce to attract multinational apparel exporters and brands.

II. Methodology

The study employed exploratory research design with qualitative approach. The study sites were EIZ in Dukum, Bole Lemi I IP in Addis Ababa, and Hawasa IP in Hawassa. These three-targeted industrial sites are the first generations of industrial sites. They generated thousands of employment opportunities by hosting a number of foreign garment and apparel firms. In addition, only apparel firms were selected because they are priority sectors of the Ethiopian government. They are labor-intensive and among those sectors where serious violations of associational rights have usually been committed across the world (Bangladesh, Vietnam, Mexico, Madagascar, Namibia, Kenya) (Garcia 2014; Oya 2019). Similarly, in Ethiopia, there are reports that demonstrate repeated labour rights violations, particularly in the garment sector (ILO 2014; Tsige 2016; Huyneh 2017). A total of three major foreign apparel exporters from the three sites were selected based on their number of employees, time of operation, and their country of origin. Therefore, American, Chinese, and Indian supplier from Hawassa IP, EIZ and Bolie Lemi 1 IP, respectively were chosen to be sources of data.

The qualitative research method was also appropriated to generate data that are both flexible and sensitive to the ideological contexts from which data are produced. Besides, international, regional, national and industry level human or labor right norms, investment policies, and strategic national industrial development plans, ILO reports, and media contents which were relevant data were also examined. As such, industrial, labor, human right, and investment affiliated institutions have been explored and examined. In connection to this, relevant data have been gathered from various stakeholders of employment relationship. Included in this category are ILO regional office, Investment Commission (IC), Industrial Park Development Cooperation (IPDC), Ministry of Labor and Social Affairs (MoLSA), Bureaus of Labor and Social Affairs (BoLSA), and Confederation of Ethiopian Trade Unions (CETU), representatives of global brands (buyers) of selected firms, and farm managers of the selected firms.

Similarly, semi-structured interviews were conducted with those industrial workers to properly explore their lived experiences about their actual lives, thoughts, expressions, and interpretations of their experiences related to their wages. Besides, focus group discussions were conducted with firm managers and employees. Moreover, secondary sources including those relevant published research findings and literature, which were used as both conceptual foundation and empirical data, were deliberately consulted. Finally, the data generated from the preceding instruments were analyzed using the integration of narrative, thematic, content, and document analysis strategies.

III. Review of Related Literature

Industrialization Push and the Apparel Sector in Ethiopia

Ethiopia was a country that was known for experiencing drought-motivated famine which took the lives of hundreds of thousands of its citizens in the mid-1980s (Hardy and Hauge 2019:3). This had been primarily attributed to the country's economy which was predominantly based on subsistence and rain-fed agriculture where the majority of the rural population earned their livelihoods. Yet, in recent years, the story has started to change. The late Prime Minister Meles Zenawi (1991-2012) embarked on an ambitious state-led industrialization strategy to bring structural change in the country's economy (Qubay 2019). Since 2005, Ethiopia has experimented with state-led industrialization of the East Asian countries in the hope to repeat their impressive economic performance (Cheru 2014). Hence, the country has implemented a series of strategic plans and development policies to facilitate the growth of the industrial sector, and to achieve structural socio-economic transformation.

Ethiopian government's adoption of the five-year Plan for Action for Sustainable Development and Eradication of Poverty (PASDEP) (2005-2010) at the beginning of 2005 can be taken both as a policy and an ideological shift in Ethiopia's development policymaking. It was primarily designed to remedy the limited policy returns from its Agricultural Development Lead Industrialization (ADLI) (1991-2000). As such, PASDEP was a comprehensive development plan to promote rural-urban synergy and thereby to ensure fast, inclusive, and broad-based economic development in Ethiopia (MoFED 2006). It was based on the underlying policy premise that urbanization and industrialization should not be meant to neglect the rural areas and the agricultural sector. Instead, as a part of Ethiopia's broad-based ideological allegiance to state-led industrialization or developmental state model, PASDEP had been a deliberate alternative development policy imperative to integrate urbanization, industrialization, and, of course, rural agricultural productivity.

PASDEP represented a major ideological departure for the neoliberal policies that the government was forced to follow by the IMF and the World Bank in exchange for financial assistance (Cheru 2014; Qubay 2018). Through deliberate state action, the government sought to kick start the economy with a mix of market and non-market policy solutions (Hardy and Hauge 2019). The focus of the strategy was on value creation rather than rent-seeking (Cheru 2014:39). Through industrialization, the government had hoped to facilitate the structural socio-economic transformation of the country.

Following the implementation of PASDEP, Ethiopia's economy showed improved performance, particularly in the agriculture, industry, and export sectors. The country's overall GDP growth during the planned period grew by an average of 11.3 percent, compared to a low of 1.5 percent in 2001/02 (Cheru 2014:39). Similarly, the GDP per capita rose to USD357 in 2007/8 from a very low figure of USD127 in 2000/1. Moreover, the country succeeded to survive the overwhelming waves of the 2008 global economic downswing and rapidly resumed the track of its economic development, registering an average 10 percent GDP growth both in 2009 and 2010 (Qubay 2019).

To sustain the impressive socio-economic growth achieved under the PASDEP, the Ethiopian government crafted the five-year Growth and Transformation Plan (GTP I) (2010-2015). GTPI was designed to achieve the country's long-term national vision of industrialization and structural transformation (FDRE 2010:7). Accordingly, its objectives were to achieve an average GDP growth rate of 11 percent and thereby meet the Millennium Development Goals (MDGs), facilitate sustainable state-building through the imperative of a democratic developmental state, and to sustain the momentum of fast economic growth.

Concerning its industrial policy imperative, GTP I have placed top priority to accelerate industrialization to create jobs and lift workers from low-productivity agriculture and informal sectors into higher-productivity activities' (Cheru 2014:40). In this regard, the emphasis had been given to the manufacturing sectors based on resource availability, labor intensity, and linkages to agriculture, export potential, and low technological entry barriers. It also prioritized garments and textiles, agro-processing, meat processing, leather and leather products, and construction sectors (NPC 2016). Consequently, the county's economic productivity helped sustain its growth with an average GDP growth rate of 10.1 percent from 2010-2014. Besides, the real GDP growth rate of the agriculture, industry, and services accounted for 6.6 percent, 20.2 percent, and 10.8 percent respectively during the same period (NPC 2016:70).

Building on the impressive achievements of GTPI, the government formulated the second five years of GTP II (2016-2020). Under GTP II, Ethiopia's industrial policymaking embarked on a sectoral approach by prioritizing those labor-intensive and export-oriented manufacturing firms. The garment and apparel sectors were identified as priority sectors to position the country to become the next global apparel destination hub in Africa by 2025 (Qubay 2019). The Plan aimed to create 174,000 jobs and generate US$779 million in export revenue from the apparel sector by 2020, and to eventually create more than 300,000 jobs (NPC 2016). The architect of the industrial policy, Arkebe Oqubay, who was a minister and special advisor to the prime minister, claimed that it was the achievable plan that would transform Ethiopia into a new compelling sourcing hub for global brands, retailers, and their suppliers.

To achieve the underlying national vision of industrialization and structural transformation, Ethiopia has created enabling normative, infrastructural, and institutional environments for the development of the manufacturing sector. These include the Ethiopian Investment Commission (EIC), which oversaw the regulatory and licensing issues, the Investment Board for the strategic decisions and approval of the new national investment law. The government has also formulated industrial parks development policy and institution, and Industrial Parks Development Corporation (IPDC), which were directly accountable to the Prime Minister's Office. These normative and institutional instruments have, therefore, been designed to facilitate the country's industrialization efforts through various incentive packages for foreign and domestic investors. Furthermore, the country's activist industrial policy making emphasizes on those labor-intensive and export-oriented middle-level manufacturing firms, particularly for the garment and apparel sectors, thereby ensuring sustainable social and economic development.

As part of its late industrialization efforts, the Ethiopian government has also expanded export processing IP infrastructures to attract foreign investors (Nicolas 2017:4). Accordingly, seven

government-built IPs have been currently in operation in Bahir Dar, Bole Lemi 1, Hawassa, Mekelle, Jimma, Adama, and Kombolcha. A private industrial zone, Eastern Industrial Zone (EIZ), has also been operational in Ducum town. All these industrial sites focus on the garment and textile sector except for Adama IP and EIZ which also include investments in the pharmaceutical, cement machinery, and equipment sectors. Moreover, the country has recently implemented One-Stop Service (OSS) across various industrial parks of the country to ease running the business there through facilitating and coordinating all the basic services provision offices through one window service.

The garment and apparel sectors have been prioritized in Ethiopia's industrial policymaking. One key factor was that the country's abundant labor force has attracted the attention of global apparel suppliers and brands. The Ethiopian government openly advertised the availability of cheap labor as an investment incentive. Major apparel suppliers and their respective brand buyers such as PVH and H&M openly admitted that cheap labor was a major factor motivating them to invest in Ethiopia (Staritz, Plank, and Morris 2016:7). Besides, investors recognized the opportunity for supply chain upgrading (the potential to establish domestic backward linkages in the sector). Accordingly, the country has huge potentials for land suitable to cultivate cotton, which can be a rich source of raw materials for textile production. Besides, the country has been currently providing industrial park infrastructures with 24 hours uninterrupted and relatively inexpensive electricity. Another attractive factor for investors has been the opportunity to access the US and European markets since Ethiopia has been a beneficiary of the African Growth and Opportunity Act (AGOA) and the European Union's 'Everything but Arms' (EBA) preferential market access for apparel and textile products to U.S. and E.U. respectively (Staritz, Plank, and Morris 2016:7).

As a result of its comprehensive and well thought out industrial policy, Ethiopia has become a preferred destination for foreign investors in the garment and apparel sectors (Barrett and Baumann-Pauly 2019:1). The country was ranked as the first recipient of foreign manufacturing firms in East Africa and the second in Africa in 2017 (Qubay 2019). While the early investors came from China, India, and Turkey, the country has witnessed an influx of international investors from other parts of the world as well. Global apparel brands such as PVH, H&M, and The Children's Place have started to directly source from Ethiopia (Barrett and Baumann-Pauly, 2019:10). Consequently, the growth of Ethiopia's textile and apparel manufacturing has grown by 51 percent between 2011 and 2017. The sector's export has also increased from US$43 million in 2010 to US$130 million in 2016 (Staritz and Whitfield 2019). Addressing the national conference on the industrial park Development Corporation, Lelise Neme, CEO of (IPDC) also commended that a total of US$ 110 million have been secured from the sector.

Despite all the efforts taken by the government to promote industrialization, the manufacturing sector has played a marginal role in the economy. Part of the reasons was that the low levels of the process, product, and local supply chain upgrading challenges (weak vertical linkages) (Qubay 2018:2). Hence, the lack of skilled manpower, high employee turnover, low labor efficiency, and low foreign exchange reserves have been among the major barriers of the sector (Staritz and Whitfield: 2019).In this regard, the CEO of IPDC also admitted that high turnover

of employees, low wages and poor working conditions, poor linkages, peace and security concerns, frequent labor strikes, and damages on investments have been the existential challenges to promote industrial productivity across the various industrial sites of the country.

Specific to the labor sector, the underlying ideological and policy imperatives of the preceding strategic plans of Ethiopia's state-led industrialization give priority to the numbers of industrial job opportunities. As a result, foreign apparel firms at various IPs of the country have commendably been generating tenths of thousands of jobs. In this connection, the special advisor to the late Prime Minister, Arkebe Oqubay hypothetically praised Ethiopia's plan to achieve 60,000 direct jobs while Hawassa IP would be fully operational and achievable by the end of 2018 according to his prophecy. Also, the CEO of IPDC has recently been reiterating the performance of the country's industrial sites by disclosing the total number of jobs that reached 90,000 in the 2019/20 fiscal year. Although such an actual quantitative revival of social upgrading (90,000 jobs) signals to enable prospects in this regard, it has still been significantly lower than the national target to create 3000,000 jobs by 2020. Compared to the performance of some Asian and African countries, it has also been too early to celebrate Ethiopia's (the late comer) track records in the sector.

Ethiopia's State-Led Industrialization Ideology and Co-Opted Labor Institutions

Ethiopian People's Revolutionary Democratic Front (EPRDF) assumed political power following the demise of the Military regime in 1991. It is noted that the ideological antecedent of EPRDF had been resonated heavily from Marxism. Besides, the party's strong social-political bases stemmed from regional liberation movements and the mobilization of peasants in the country's rural area. As a result, its ideological and development policy imperatives were predominantly focusing on the rural population and the country's small-scale agricultural economy (Berhanu 2016). Accordingly, the industrial sector, urban dwellers, and the industrial proletariats did play marginal roles in the Ethiopia's political economy until 2005. Similarly, specific to the labor sector, the ideology had significantly affected the size of industrial jobs and it suppressed labor standards including the aspirations of workers for strong labor rights institutions (Markakis 2011; Hardy and Hague 2919).

Ethiopia's industrial policies since 1991 could be characterized by centralized and co-opted approaches to associational rights of workers and labor rights institutions. The country's activist industrial policy has prioritized the quantity of employment and skill transfer over labor standards. Consequently, Ethiopia's state-led industrialization has followed cheap and less-protected labor policies as part of its investment incentive packages to attract FDI, particularly in those labor-intensive garments and apparel industries (Hardy and Hauge 2019:1). From the vantage point of the global apparel manufacturers, the increasingly super competitive nature of the global apparel sector has forced them to find new production locations where cheap and less-organized labor force are found (Oya and Schaefer 2019).

Despite these internal and external policy challenges, Ethiopia's state-led industrialization has implemented various mechanisms towards disciplining and suppressing the collective voices of its local labor force. Weakening the powers and roles of the country's labor rights institutions have been among those repressive measures of the country's active industrial policy. In this

regard, the Confederation of Ethiopian Trade Unions (CETU) has been the primary target institution (Bersoufekad 2003; Hardy and Hague 2919).

The Confederation of Ethiopian Trade Unions (CETU), which replaced the All-Ethiopia Trade Unions in 1993, was the highest representative of Ethiopian Workers at the national level. Concerning its organizational structure, CETU has been serving at the top of the institutional hierarchy to deliberate on the national labor policy issues with the Ministry of Labor and Social Affairs (MoLSA) and the Ethiopian Employer's Federation. Below CETU, there are currently nine sectorial federations with different levels of responsibilities, followed by firm-level trade unions. In 2019, of 300,000 workers in factories, only 20,000(20%) have representative trade unions. This, in turn, entails that membership has been extremely low owing to the suppressive industrial traditions towards associational rights (Hardy and Hague 2919:14). Exceptionally, the worst is that the 45,000 workers who have been currently employed across the seven IPs of the country have totally been beyond the reach of the CETU, and their rights to freedom of association have been categorically denied.

In principle, institutions, such as CETU are required to effectively and independently channel workers' voices into improvements in wages and other working conditions by influencing government policies and actions. Unfortunately, the CETU has had a tangible influence on the overarching developmental plans of Ethiopia to improve the working conditions of workers. As a result, the country's industrial labor force has continued to suffer from the government's cheap and weak labor policies and practices (Yirgalem 2019). As the finding revealed, those global apparel manufacturers across the country's IPs still pay the least basic monthly salary in the world that ranges from 22 to 34 US$. This has forced local workers to struggle to get by, let alone save any money or send cash home to their families in the countryside (Barrett and Baumann-Pauly 2019). In practice, the CETU did not object to the wider objectives of the country's state-led industrialization. It is important to note that, in an interview, a senior CETU official described the organization as a mediator between the developmental objectives of the Ethiopian state and the interests of workers.

One of the government's strategies has also been the formal restrictions against CETU's access to workers at their workplaces to create awareness and train them to help improve their class conscience. In this regard, both the government and the employing firms claim that associational rights shall not be pushed by CETU or by any outside actors, but by workers themselves (Hardy and Hague 2919:14). In coordination with employing firms, the Ethiopian government frequently created negative impressions in the minds of workers who delegitimized CETU, the sectorial federations, and firm-level labor unions, thereby creating mutual distrust among workers and their representative institutions. Other institutional limitations of CETU and its affiliated labor representative institutions have been understaffed, poorly financed, and have had limited experience and skills to strongly face the repressive mechanisms of both the government and employers against the collective voices of workers.

The table hereunder demonstrates the 9 sectorial federations, their respective numbers, and sizes of unions.

Table1: Sectorial Trade Unions Number of Members and Basic Trade Unions

Name of Sectoral Federation	No. of trade union	No. of Members		
		Male	Female	Total
The National Federation of Farm, Plantation, Fishery, and Agro-Industry	215	91,820	50,666	142,823
Federation of Food, Beverage, Tobacco, and Allied Trade Unions	72	29,386	20,548	49,934
National Industrial Federation of Energy, Chemical and Mine Trade Unions	79	38,272	9,967	48,239
Industrial Federation of Textile, Leather, and Garment Trade Unions	82	22,261	24,921	47,182
The Ethiopian Industrial Federation of Construction, Wood, Metal, Cement and other Trade Unions	105	40,737	6,081	46,818
National Industrial Federation of Tourism, Hotels, and General Service Workers	261	13,886	10,134	24,020
Industrial Federation of Banking and Insurance Trade Unions of Ethiopia	7	12,540	8,808	21,348
Transport and Communication Workers Union Industrial Federation	31	16,296	4,805	21,101
Federation of Commerce, Technical and Printing Trade Unions	66	8,895	5,495	14,390
Total	918	274,093	141,425	

Source: Confederation of Ethiopian Trade Unions, 'CETU's Affiliated Industrial Federation and Trade Unions' (CETU 2015, cited in Hardy and Hague (2019)).

The other labor protection institutions which have been systematically weakened by Ethiopia's state-led industrialization have been the Ministry of Labor and Social Affairs (MoLSA) and its regional affiliates, Bureaus of Labor and Social Affairs (BoLSA). MoLSA and BoLSA are

government institutions with the power to monitor the enforcement of national as well as international labor rights including the collective labor rights of workers at workplaces. Nevertheless, as it was sufficiently testified from informants from workers and CETU experts, effective labor rights standards have not been enforced. Instead, ideological priorities of Ethiopia's state-led industrial development path (rapid industrialization and FDI promotion) have been emphasized over labor standards. As a result, the government has deliberately eroded the monitoring activities of these labor inspection institutions. It instead has used them to curb the collective voices of workers to attain its industrial development ambitions. On the other hand, according to discussants in the study sites, the government has promoted pro-investment agencies such as the Industrial Park Development Corporation (IPDC), Investment Commission (IC), and Ministry of Trade and Industry (MoTI) (Hardy and Hauge 2019).

As the key informants revealed, compared to other low enforcing institutions, MoLSA has been the least-financed and least-organized ministerial offices until the coming to power of Prime Minister Aby in 2018. Instead, it has empowered those pro-investment government agencies such as IC and IPDC to handle labor relations. For instance, the Industrial Peace Directorate Office, which is responsible for the Deputy-Commissioner of IC, has currently been formed to handle labor matters including labor strikes. It has also been only after 2018 that MoLSA and BoLSA have opened offices across the country's IPs following the various forms of 'wildcat' strikes at Bole Lemi 1, Hawassa, and Eastern Industrial zones.

Moreover, according to the key informants, the government co-opted MoLSA and BoLSA towards sharing and prioritizing the country's national vision of facilitating industrial catch-up over social upgrading. Finally, the repressive tactics of Ethiopia's active industrial policy have also extended to restrict other human rights organizations including the media. They prevented the media from visiting industrial workplaces and reporting the actual working conditions at the industrial parks. Reports about the labor conditions at the country's IPs have, therefore, been scant.

Ethiopian Industrial Parks: Spaces for a Regulatory Exception to Associational Rights

Literature regarding Industrial Parks (IPs) and the sector's actual trends plausibly witnessed the quantitative explanations of IPs (industrial upgrading, linkages, skill transfer, and export earning) over social upgrading including associational rights of workers (Gereffi and Frederick 2010). This has been demonstrated across those emerging and late-comer economies of South East Asia and few Sub-Saharan African countries. Likewise, Ethiopia's IPs policies have been direct emulations of the Southeast Asian model. The Ethiopian government has also expanded export processing Industrial Parks (IPs) infrastructures to attract foreign investors in the labor-intensive garment and apparel industries (Nicolas, 2017). Consequently, there are seven IPs, which are operating in the country and currently creating industrial jobs for 45,000 workers. This, in turn, plausibly infers that the Ethiopian government's IPs policy concerning the labor sector prioritizes facilitating job creations and industrial upgrading over decent work and working conditions. Hence, the quality of employment has not been the ideological and policy priority of Ethiopia's state-led industrialization, particularly concerning the country's IPs.

Ethiopia's state-led industrialization has promoted FDI in the country's IPs and labor-intensive apparel and garment sectors. In effect, as experts from both ILO and CETU clearly explained, as part of its ideological commitment to many emerging apparel manufacturing destination countries, the government of Ethiopia has incentivized multinational global apparel manufacturers and brands with a cheap and disciplined local labor force. Accordingly, the country's IPs have been appropriated in a manner that responded to the demands of these multinational firms to race to low production cost through accepting poverty wages. In addition to cheap labor, multinational companies wanted the Ethiopian government to ensure that country's IPs could be free from any forms of labor strikes or industrial protests which could disrupt their production process (Oya and Schaefer 2019). In response, the government employs *de facto* or *de jure* labor control mechanisms across the country's IPs to suppress the collective labor rights of workers such as freedom of association, right to collective bargaining, and the right to industrial actions.

As part of its repressive measures, the government has securitized and militarized the country's IPs and thereby put psychological and physical pressures against those workers who claimed their freedom of association. Furthermore, informants, who were victims of the police arrests and former employees at Bole Lemi 1, Hawassa, and Eastern Industrial sites, reported that the government employed its criminal justice system against workers who have allegedly engaged in the country's political protests and 'wildcat' strikes in 2017. To silence their voices, workers were arrested and encountered physical violence by the police and security forces across the country's IPs. These violations of rights had been the common mechanisms of the Ethiopian government particularly before the government's liberal political reforms of 2018. This, in turn, has prevented workers from freely deliberating to ensure better working conditions including associational rights. Besides, the government blocked all the possible institutional avenues through which workers could share their voices with external stakeholders and human rights organizations about their working conditions at the IPs.

Following the preceding national measures of Ethiopia's state-led industrializations towards the labor sector at the country's IPs, workers at these sites have been exceptionally deprived of their basic labor and human rights at work. Most importantly, their associational rights have been completely suppressed across the country's IPs, so it was impossible to find a single labor union formally registered. In this regard, such a categorical denial of associational rights of workers at the country's IPs has been exceptional to the experiences of workers outside the IPs. For example, most large textile and apparel firms operating outside the IPs such as Kombolcha Textile, Almeda, and AIKAADIS have already ensured the freedom of association of their employees. As a result, workers of these major apparel exporters outside the parks have exercised their rights to collective bargaining and have developed mutually agreed collective agreements governing their employment relations. On the contrary, workers across the country's IPs have still been denied of the above collective human and labor rights entitlement that has been exceptionally the worst experience.

The repressive measures against the collective voices of local industrial workers at the country's IPs have also been enforced by employing multinational apparel industries. First, they strongly contested all the external efforts either by CETU or by other labor rights

initiatives towards unionization of workers at IPs claiming that such external drives are unlawful acts of external intrusions into their internal human resource management. In connection to this, until the 2018 political reforms, the government shared employing firms' standing against any external initiatives towards unionization of workers at the IPs. However, this has been part of the systematic repression employed by employing firms against the workers' legitimate quest for strong and independent unions that could firmly stand for the improvements of their working conditions. Accordingly, as Oya and Schaefer (2019) plausibly explained, managers of multinational apparel industries in Ethiopia's IPs have emulated the experiences of their counterparts operating in Bangladesh and Mauritius by forming co-opted and artificial 'workers' councils'.

Nevertheless, the above-management-motivated 'workers' councils' as trade unions in some of the apparel industries in Ethiopia's IPs have been in violation of Ethiopia's international commitments, the country's constitution, and the labor proclamation since the manner of their formations have not been on the bases of free, active, and independent participation of workers. Similarly, workers did not accept the councils' members as their independent representatives questioning their legality and their poor track-records in representing workers' protections. Accordingly, although the firms' managers claimed that 'workers' councils' can better promote employees' interests than formally institutionalized trade unions, informants from workers testified otherwise. An additional account about their affiliation was that members of the councils as informants from the employing firms projected the poor treatments of workers at the sites (poverty wages and other non-wage conditions of work) to poor industrial culture, low efficiency of workers, and the limitation of government. From these accounts, it is plausible to infer that the 'workers' councils' stood for the firms' management rather than being the voices of workers.

Global apparel manufacturers operating across Ethiopia's IPs employed various repressive measures against the freedom of information, expression, and associations of their workers. In this regard, workers' exchanges of ideas with one another and with other third-party stakeholders about employment relations have been treated by employing firms as serious disciplinary offenses, for this attempt breaches the firms' secrets. As a result, workers were required to refrain themselves from exposing their working conditions including their associational rights to labor inspectors from human rights organizations, brands' labor auditors, and media. Only members of those affiliated and co-opted members of the 'workers' councils' have been allowed to communicate with external labor rights organizations and compliance auditors. Hence, firm managers often intimidated workers with wage deductions and termination of employment if they found them discussing problems and the solutions for their working conditions.

Nevertheless, from a human rights perspective, such a broader and restrictive confidentiality clause against workers by employers in the country's IPs is a gross violation of the human rights of workers as human beings to freely express their ideas, views, and aspirations. Furthermore, from a labor rights perspective, this infringes the associational rights of workers, which is protected by the Ethiopian laws, the international human and labor rights standards, and buyer codes. Finally, from the perspective of CSR of buyers, firms' action to prevent

workers from providing information to buyers essential to the meaningful enforcement of labor standards violates brands' codes of contact. Thus, such a broader restriction to freedom of expression and associational rights of workers seriously hampers the operation of buyers' monitoring programs that necessitate workers' involvement.

Similarly, although the Ethiopia's case is not an exception to this context, multinational apparel firms across the country's IPs deliberately overloaded workers through overtime works and secluded them in tight works. This, in turn, has put time constraints on workers to discuss their working conditions actively and collectively. Besides, firms' managers and supervisors do not allow workers to initiate their associational rights at the workplace and inside the IPs. Similarly, they rejected the CETU's initiative to organize workers at IPs claiming that the right to unionization shall not be from outside pressures. When workers organized themselves outside the park, they got recognition from BoLSA office, and finally their certificate was communicated to their employers although their employers were not willing to accept it. Instead, they imposed punitive and unlawful disciplinary measures against those employees who have been involved in the unionization process. Finally, as noted by the president of CETU, all the above direct and systematic restrictions to the associational rights and bargaining powers of local workers by the underlying employing firms have been performed tacitly with the realization of the Ethiopian government.

In a similar vein, global apparel brands, which have been sourcing from Ethiopia's IPs, are part of the violation of associational rights of local industrial workers. Although they accepted the fundamentals of associational rights of workers, they used to share employing firms' arguments. Hence, they also claimed that the drives for freedom of association and the right to collective bargaining of workers shall come from outside forces. As discussants from corporate responsibility and sustainable managers of major global apparel companies sourcing from Ethiopia's IPs unanimously claimed, questions of freedom of association shall come from within the workers themselves. Hence the initiative shall not be from MoLSA, CETU, and outside forces.

Discussants from ILO, CETU, MoLSA, and BoLSA sufficiently also added that brands' poor labor auditing practices have been part of the violation. They usually employ, among others, third-party labor auditing mechanisms, which enforce, short annual visits to the factories to monitor the enforcement of associational rights of workers. Moreover, the absence of meaningful consultation mechanisms with workers, a lack of transparency of the audit results, and failures to correct violations have been among the major limitations of labor auditing practices of global brands sourcing from Ethiopia's IPs.

The above explanations rightfully reflect the compelling argument of Anner (2015) that both global brands and their suppliers' firms did not want to see the enforcement of the associational rights of workers because of two major reasons. First, the existence of strong and independent unions inevitably is meant to consolidate the collective pressures of workers like collective bargaining and various forms of industrial actions including strikes. This will, in turn, necessitates employers to lose labor cost preferential since the organized and collective voices and actions of workers would force them to improve the existing poverty wages. Likewise, allowing associational rights of workers legitimizes and promotes various forms of industrial

actions that may disrupt the flow of firms' and buyers' production networks. Hence, as rightfully explained by Oya and Schaefer (2019), global apparel manufacturers and brands operating across Ethiopia's IPs could not consolidate the bargaining powers of their workers since the existing trends of GVCs which are hypercompetitive, uninterrupted, and just-in-time production systems could not allow them to do so.

As sufficiently explained by CETU, there has been a common track-record across the fast fashion apparel and garment industries. After exploiting the environment and the local labor force, multinational apparel manufacturers have been widely known for moving their production locations to other destination countries where labor standards are not policy priorities (Yirgalem 2019). In this regard, most garment and apparel companies operating across Ethiopia's IPs came from Bangladesh, China, and India after the recent rises in production costs, particularly of increasing wages, growing pressures for labor standards there (Staritz, Plank and Morris 2016). Reiterating this claim, brand representatives as informants clearly indicated that low labor cost and weak labor practice have been among their underlying incentives to invest in Ethiopia.

The preceding restrictions to freedom of associations have made workers across Ethiopia's IPs voice-less with no formally registered labor unions. However, this has not prevented them to informally organize and conduct various forms of 'wildcat' strikes. In this context, Workers at Ethiopia's IPs have not been exceptional to participate in various forms of informal industrial actions towards improving their working conditions. For instance, China experienced 127,000 incidents of industrial actions claiming for better wages and working conditions (Elfstrom and Kuruvilla 2014). Similarly, in Vietnam, the number of labor unrest that mostly targeted foreign manufacturers increased from 60 per year in 1995 to over 900 per year in 2011(Oya and Schaefer 2019).

In Ethiopia, various 'wildcat' strikes have been common across the country's IPs, particularly since 2014. These informal labor strikes were fertile grounds for the unprecedented wave of popular mobilizations in the country. Accordingly, workers in the industrial parks had been active across those popular protests particularly in Oromia Region that started from 2014 to 2018. According to informants from workers, the underlying questions of the popular protests have been to contest Addis Ababa Integrated Master Plan and against the government's repressive measures against political dissent. Furthermore, the government's policy of expropriation of farmlands to expand IPs without fair payment for compensation and questions of environmental standards have also been among the major demands of protesters including workers across the country's industrial sites. In sum, their major questions have been ranging from better working conditions (better wages, standard meal, measures against sexual harassment, and respect for freedom of association works at IPs) to broader national political demands including regime change (Admasie 2018).

These questions have also been common particularly at Hawassa and Bole Lemi 1 IPs, and Eastern Industrial Zone. Besides, the concentration of workers in large factories in the IPs which have been followed by the infiltration of opposition political party members, and political activists within the labor forces in the industrial sites have improved the class consciousness of local industrial workers (Anner 2015). As a result, despite the absence of

labor unions to coordinate their voices and the weak institutional supports from either CETU or MoLSA, workers across the country's IPs have been active participants in series of labor strikes and political protests which exploded throughout the country particularly from 2014 to 2018. Thus, various forms of repressive mechanisms employed by both the Ethiopian government as well as multinational apparel firms did not prevent workers across the country's IPs from calling various forms of informal labor strikes and political protests.

The recent protest politics in Ethiopia which started in 2014 and lasted in 2018 ultimately resulting in the demise of TPLF-led EPRDF leadership. Consequently, a new administration under the political leadership of Prime Minister Abiy Ahmed assumed the country's political power in April 2018. As part of its relatively liberal socio-economic and political reforms, the new administration has started to ease those repressive policies, has freed political prisoners, and removed restrictions on freedom of expression and associations. Consequently, a series of measures towards political liberation, and persistent strikes have been freely conducted in different factories in Eastern Industry Zone, Hawassa, and Bole Lemi 1 industry parks in 2018, 2019, and 2020. Workers were able to protest working poverty, suppressions of associational rights, the company's substandard meal services, and sexual harassment against female employees.

Lots of initiatives have also been implemented towards the associational rights of industrial workers. The current administration invites various independent labor rights organizations such as the Action, Collaboration, and Transformation (ACT), and ILO regional offices towards the associational rights as well as other protections of industrial workers. Furthermore, the administration has started to deliberate in compliance with managers of global apparel brands and firms operating and sourcing from various industrial parks of the country. Hence, it has started a new beginning towards mutually agreed solutions with various stakeholders to ensure inclusive industrialization through freedom of association, collective bargaining, social dialogue, and minimum living wages in the textile and garment industries of Ethiopia.

The new administration under Prosperity Party (PP) has come up with a more protective labor proclamation (Proclamation 1156/2019). The proclamation has provided the minimum wage setting mechanism for employees in the private sector for the first time. Furthermore, it has come up with an independent portion governing women's rights and sexual harassment principles. To promote the collective labor rights of workers, it maintains that the minimum membership level to form a first-level trade union shall be ten (Proclamation No1156/2019: Art. 114(2)). It still allows employees of small enterprises (whose total numbers are less than ten) to establish a general trade union together with workers in other small undertakings (Proclamation No1156/2019). Moreover, trade unions are entitled to jointly establish federations and the latter shall jointly establish confederation.

Peculiarities of Ethiopia's State-led Industrialization

Concerning the implication of state-led industrialization on collective voices of local industrial workers, Ethiopia's experience shares a common culture with the scholarship and actual performances of countries in both the East Asian and Sub-Saharan African regions. As such, the model has historically proved potent for achieving rapid industrialization though it has subdued the collective voices of workers. Yet, Ethiopia's state-led industrialization has its

peculiarities as structural limitations. It has to be clear that the initial conditions, which were instrumental for the successful economic returns of the ideology in the East Asian countries, were not fulfilled while Ethiopia launched state-led industrialization in 2005. These initial conditions include relatively high standard education, a high level of labor efficiency, meritocratic and effective bureaucracy, and well-developed infrastructures (Herms 1997). Most importantly, Ethiopia's state-led industrialization has also exceptionally failed to facilitate technology, skill, and knowledge transfers which are critical to the efficiency and productivity of the country's labor force (Startz and Whitfield 2019).

Similarly, while the East Asian states had been going through successful and rapid industrialization in those labor-intensive garment and apparel industries during the 1970s, 1980, and 1990, questions of labor standards were not pressing agendas in the international political economy (Gereffi and Frederick 2010). However, since the past two decades, particularly after the disaster at Rana Plaza in April 2013 in Bangladesh, which killed around 1,200 people, the quest for labor and human rights standards have increasingly become compelling reputational and corporate social responsibility requirements for global apparel manufacturers and brands to compete in the global market (Staritz, Plank, and Morris 2016). As a result, the wages and non-wage conditions have recently been significantly improved even in those leading global apparel supplier countries of South Asian countries. On the contrary, the conditions of Ethiopia's local industrial workers in various global apparel manufacturers have continued to remain exceptionally gloomy (Barrett and Baumann-Pauly 2019). Accordingly, Ethiopia's bold ideological appeal to the East Asian model of the 1970s, 1980s, and 1990s has failed to actively consider the current global initiatives towards labor and human rights standards and sustainable industrialization.

Ethiopia's suppressive labor practices against the associational rights of its industrial workers have also been accompanied by the country's poverty wages. Though the majority of East Asian states such as China, Bangladesh, and Vietnam have still been hostile towards associational rights, they have been significantly improving their minimum living wages (Oya and Schaefer 2019; Yirgalem 2019). For example, Bangladesh, which is a country with a cost of living comparable to Ethiopia, has been experiencing the lowest pay in the region. However, Bangladesh's average minimum wage (95 USD), which has been repeatedly protested by the country's union leaders, has been more than threefold of the average basic salary being paid to Ethiopian industrial workers (26USD) (Barrett and Baumann-Pauly2019). Accordingly, Ethiopia's state-led industrialization has exceptionally enforced double suppression against the conditions of industrial workers through its poverty wages and its repressive practice against associational rights.

IV. Conclusion and Recommendation

Since 2005, Ethiopia's overarching ideological and practical industrial policy imperatives for state-led-industrialization were the direct emulations of the experiences of East Asian countries. As a result, the Ethiopian government's adoption of PASDEP at the beginning of 2005 can be taken both as a policy and an ideological shift in Ethiopia's development policymaking. Ethiopia's ideological drive towards state-led industrialization was designed to

ensure structural and socio-economic transformation through rapid industrialization under the guidance of an activist and development-oriented state.

Nevertheless, the ideology has contributed to the predominantly co-opted and suppressive labor practices against the collective voices of workers particularly in those multinational apparel manufacturers across the country's IPs. Thus, the government and employing firms were used to enforce *de facto* or *de jure* suppressive labor control mechanisms against labor rights institutions and workers thereby repressing the freedom of association, the right to collective bargaining, and the right to industrial actions of local industrial workers.

Unless Ethiopia's categorically ideological commitment to the East Asian state-led industrialization of the 1970s, 1980s, and 1980s ends, the suppressive labor practices against the voices of local apparel industrial workers will continue to be pressing labor and human rights agendas in the sector. This is not, however, to suggest that Ethiopia needs to abandon the state-led industrialization development path given the current global dynamics towards standardization, corporate social responsibility, and social upgrading. It is rather to provide insights about the policy spaces through which the country's activist industrial policy could still strike a reasonable balance between facilitating industrial catch-up and ensuring labor standards inclusive, peaceful, and sustainable industrial labor relations.

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1.2. Effectiveness of Road Traffic Accident Mitigation Intervention in Adama City, Ethiopian, by Alemeshet Taye[1] & Yalgaesh Tilahun[2]

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Abstract

Road Traffic Accidents are a major global public health problem and its severity trends in Adama city was getting high during the past five years. The cause factors of these incidences which accounted to about 85% were related to drivers, followed by road, pedestrians, and vehicle factors. This implies that the number of people killed or injured as well as the loss of properties in the city within the years 2015-2019 was high. This study aims at identifying the trends and main causes, the practices of road traffic accident interventions and their level of effectiveness; and to give recommendations. Accordingly, 384 Questionnaires, 10 key informant interview, 2 FGD and personal observation were used to undertake the study. Aggressive driving behaviour, poor road access; absence of knowledge on road traffic safety; mixed traffic flow system; poor enforcement of road traffic laws; negligence of the pedestrians when crossing roads; sub-standard traffic light installation, poor signage, and signalization; and absence of coordination among concerned local government to design and effectively implement road traffic accident mitigation strategies have been identified as key determinants of the problem. Currently there are no clear cut integrated national and regional RTA mitigation policy to prevent the high severity level of accidents; however, there were some attempts started to develop strategies to be used for future road safety within the city. Thus, road traffic accidents were enormous problems of public wellbeing in Adama city. This requires a high level of political commitment; restrict enforcement of traffic laws, immediate decisions, and coordination, strengthening a capacity building for effective road safety as well as appropriate planning and implementation strategies to curb the growing problem. Otherwise, road traffic accident will get worse from day-to-day as motorization and population increase rapidly within the city.

Keywords: Road Traffic Accidents; major causes of RTA; Mitigation Strategies and Level of Effectiveness.

I. Introduction

Urban infrastructure and urban road safety management system are deals with complex decision-making process to respond to traffic crashes. Traffic accidents impose severe problems to the public in terms of human, economic, property damage and medical costs. Road

traffic collide is a rising incidences which threatening the public wellbeing, being responsible for 1.35 million fatalities and up to 50 million nonfatal injuries worldwide (Hirdes JP 2002).

As stated by Corbett 2007, it is a huge challenge particularly for low- and middle-income countries where 90% of the victims were found. Accident trends observed in developed countries witnessed the quick reduction over the last three to four decades, while a shocking increment reported from a number of developing countries including Ethiopia (Saha, 2016). The problem may grow further in the coming decades; due to the rapid rising of vehicle ownership associated with their economic growth.

Consequently, the aim of this study is to investigate the accident trends of Adama City between the years of 2015 and 2019 in terms of traffic accident causes, interventions taken to minimize the socio-economic and environmental risks resulted by the traffic accidents.

It is a general truth that accidents are relatively unpredictable but preventable incidents. Within cities and rural areas beyond their massive misery they cause, road traffic crashes derived a family unit into poverty as crash survivors struggled to cope with the long-term consequences. The events together with the cost of medical care and remedy and all funeral expenses and the loss of the family breadwinner are the major social and economic crisis caused by RTA (WHO, Global Status Report, 2004). Similarly, as the case of other cities of developed and developing nations, the widely acknowledged contributing factor deduces to road accidents involved in Adama city included human factor, vehicle factor, road, and environment factors (Quezon,; Wedajo, Mohammed, M. 2017)). As one of Regional Cities of Ethiopia, the city is accommodating a high jam of traffic with all road transport, such as HGVs and two wheeled vehicles.

Concerning road accessibility, highway networks are expressing way, the former Addis Ababa-Dire Dawa road, and other main roads are crossing the city. In additions, there are different inner roads of cobblestone, asphalt, gravel, earthen road, and the like are serving the local and other users. As of different studies indicate trends of Adama city, traffic crashes occurred during the previous times caused deaths of thousands of peoples, injuries, pain, disabilities, loss of productivity, grief, and material damages frequently. In the city the statistics of fatalities, injuries, property damage and economic as well as social lose is growing from time to time.

Statically 1949 road traffic accidents revealed on the study period 2004/05 to 2013/14, 264 were death, 283 were serious injuries, 359 slight injuries and 1043 were property damage (Teferi, 2016*)*. The contributing factors for escalating these traffic accidents in the city includes unfair communication among traffic police and drivers, pedestrians' behaviors, sub-standardized road infrastructures and others. At the driver side avoiding using of seat belt, driving under the influence of alcohol and drug, and calling and texting through mobile phone when driving is becoming daily problems identified by traffic police and the other road users. The roles of the pedestrians are also recognized cause of traffic accidents mainly when crossing roadside in proper way.

In addition to these factors' poor road geometry or poor vehicle condition as well as aggressive driving behaviors are significantly affecting the road safety management. Accidents due to human occur in many ways including perception and driving behavior varies with age, emotion,

belief, and attitude. Studies undertaken on similar issues depicted that traffic accidents in Adama town are not minimized as intended by the government and the road users. Poor management of road environment and human factors (drivers' and pedestrians') can activate an accident together with the manageable roadside areas are an unseen factor that infrequently been discussed among road safety researchers. The principal victims of road traffic accidents are the road users, such as drivers, passengers, and pedestrians though the degrees of their injuries vary among them. These serious and light injuries occurred as case of traffic accident brought a big social and economic crisis on government and the victims' parents as well as on the community at large.

Regarding the research gaps of the previous research on this area, despite they further described statistical data of fatalities, injuries and loss of property in millions with their causes; the level of interventions and their effectiveness along with the most responsible bodies in relation to causes and the consequences of the accidents were not clearly identified. Moreover, to this research gap identified above, road infrastructure planning, designing, construction, maintenance and restrict enforcements of traffic laws and regulation are not appropriately sustained to address the higher needs of the road users and the government expectations.

Thus, the road users or the traffic participants are always threatened to secure their daily life and mobility in their travelling situations as well as doing their business. This means the wellbeing and health of the road users are greatly affected by lack of appropriate road safety management system caused by diversified factors.

Therefore, the focus areas of this study were based on the purposively selected inner road which extremely congested and affected by high traffic accidents through times. Consequently, it is very important to assess the nature of the problems related to urban road safety and traffic accident mitigation interventions practiced in the city to bring sustainable, effective, and safe road safety management approaches to address the needs of the whole social groups of the communities and the local government. Thus, the questions are:

1. *What are the trends of RTA in the city between the years 2015 and 2019?*
2. *What were the major causes of RTA during the times?*
3. *What types of RTA mitigation interventions were implemented in the city?*
4. *How was the level of the effectiveness of the mitigation interventions?*

II. Methodology

Study Area Description

Adama was established in 1915 as an urban settlement whereas building of the railway from Addis Ababa to Djibouti. It is located 100 km to the southeast of Addis Ababa. The derivation of original name of city, Adama, there is diverse point of view but among this before century ago land a lord named Adama Buta lived in the area and the name of Adama was originated from that person's name (Girma, 2018*).*

Research Design

The study was based on descriptive research design. Thus, this research design is appropriate to describe situational condition of road traffic accident, mitigation interventions and their effectiveness.

Research Approach

Both qualitative and quantitative approaches (mixed approach) were used for this study. Quantitative approach was applied to conduct in depth analysis of quantifiable and empirical data through questionnaire. Qualitative approach was employed to conduct in depth analysis of data collected through interview, Focus Group Discussion (FGD) and observation in qualitative way about the issue under the study.

Population, Sampling Frame and Sampling Unit

Sampling is a method/plan or a process of selecting sampling units to be included in the study. According to CSA, 2015 Adama city has a total population of 325,000. However, the current data on a number of target populations could not be found. Thus, the sampling technique is based on infinite or unknown population formula to determine the sample size.

Sampling Techniques

Systematic random sampling techniques was used to draw sample units from drivers, government officials and experts and pedestrians in the city by using purposive sampling techniques to get depth information about the issue of the study.

At 95% level of confidence and 5% ME, Z= 1.96 P= 0.5, ME= .05 $n = \frac{z^2 * p\ (1-p)}{\text{where ME2}}$

Z= critical value P = is a proportion of sample size, for *primarily undefined p value= 0.5*

ME = Standard Error

$\frac{1.96^2 * 0.5^2}{}$

$0.05^2 3.8416 * 0.25/.0025 =$ n = (Sample size = 384)

Source: Amanda Hunn, (Sampling and sample size calculation), 2009

Table 1: Types of Population and Sample Size

No	Types of population	Sample Size
1	Questionnaire Respondents	
1.1	Employee Respondents	36
1.2	Drivers' respondents	338
	Total	384

Source: Researchers own design, 2019

Methods of Data Analysis

The quantitative and qualitative data collected were analyzed and discussed in the form of notes, tables, and percentage. The completed questionnaire was given code and entered into the computer using SPSS Software and the results were imported to Microsoft words and properly analyzed, interpreted and concluded. Finally based on the available information which was obtained from the analysis part, a conclusion and recommendation were made by considering the most important points related to the set objectives and problems of the study.

III. Review of Literature

Empirical Review of RTA and Their Causes

Over 85 % fatalities and 90% injuries of the world occur in low and middle-income countries despite the low number of the world's registered vehicles (48%) available in these regions. African regions, including Ethiopia, encounter with the highest road traffic fatality rate. In these regions, rapid urbanization, and motorization account for much of the rise and the rise is aggravated due to lack of appropriate road engineering and injury prevention programs (African Development Bank (2013).

Table 2: Road Traffic Death Rates Per 100 000 Population by WHO Region and Income Level

Region and income level	Country income level			
WHO region	Low	Middle	High	Total
Africa	21.2	27.8	11.4	24.1
America	14.0	19.2	11.0	16.1
Eastern Mediterranean	19.6	21.4	21.7	21.3
Southeast Asia	12.7	19.5		18.5
Europe	18.6	15.0	6.3	10.3
Western Pacific	17.2	20.1	7.8	18.5
The World	18.3	20.1	8.7	18.0

Source: injuryprevention.bmj.com, April 2013 DOI: 10.1136/injuryprev-2013-040775

The Middle-income countries continue to be particularly hard hit with death rates around 20.1 per 100 000 population while low-income and high-income countries have death rates of 8.3 and 8.7, respectively (see table 1). The risk of dying in a road traffic crash is highest in the African region and lowest in the European region, although there are significant disparities between countries in Europe. There are discrepancies around where people die, and who dies.

The Major Causes of RTA

The causes of road traffic accidents are multi-factorial. These factors are divisible into driver factors, vehicle factors and roadway factors. Accidents causative factors are a combination of these factors. Road traffic accident is caused by several factors related to traffic systems. The main factors are road users (human factors), road environment and vehicle (Teferi Abegaz, Samson Gebremedhin (2019). A main contributor to road collision in most of the world's nations is the fast increase of the number of vehicles, mainly motorcycles, which increase by 10% every year. Nearly half of the motorcycle riders are not licensed, and three quarters don't comply with traffic laws. Also, the development of roads and other transport infrastructure has not been able to keep pace with rapid economic growth.

Drivers Factors

Driver factors solely contributes to about 57 per cent of road traffic accidents and93% either alone or in combination with other factors Driver factors in road traffic accidents are all factors related to drivers and other road users. These may include driver behavior, visual and auditory acuity, decision-making ability and reaction speed. Drug and alcohol use while driving is an obvious predictor of road traffic accident, road traffic injury and death. Speeding, travelling too fast for prevailing conditions or above the speed limit, is also a driver factor that contributes to road traffic accidents Bedard M, Guyatt GH, Stones MJ, Hirdes JP (2002).

Pedestrians Factors

Pedestrian safety is a vital concern in all countries over the world. Different studies illustrate that 50 to 60% of traffic fatal accident sufferers in the country are pedestrians (Bonin, G.; Folino, N.; Loprencipe, G.; Oliverio Rossi, G.; Polizzotti, S.; Teltayev, B. (2017). The main consideration related to pedestrian crashes need to point out that in addition to the drivers, and the road and vehicles factors pedestrians themselves are the significant contributors of RTA incidences. In current years, there has been an improvement in measuring pedestrian exposure to risk in transportation. Regardless of searching their exposures to risk, little has been done to realize pedestrian contribution to traffic related risk factors in developing countries, mainly in Ethiopia (Persson A. (2008). In developing nations including Ethiopia pedestrians' responsibility to mitigate road traffic accident is very poor.

Vehicular Factors

Vehicular factors are divisible into vehicle design and vehicle maintenance. Some safety features of vehicles like seatbelts and airbags are likely to reduce the risk of death and serious injuries. A well-designed and maintained vehicle is less likely to be involved in accidents. If the brakes and tires are good and the suspension well adjusted, the vehicle is more controllable

in an emergency and thus, better equipped to avoid accidents (Quezon, E.T.;Wedajo, T.; Mohammed, M. (2017).

Road Factors

Road design and maintenance is also a factor that contributes to road traffic accidents. The causes of road traffic accidents are not just human error. Many road accidents occur on the municipal road network (66%), which covers four-fifths of all roads. However, 62% of fatal accidents occur on roads under the responsibility of the ministries of Transports, especially in rural areas, on provincial, regional and feeder roads, where the speedlimitisbetween80 km/hand 90km/h. Accidents resulting in serious injury areal so very frequent on this network (52%), in particular on roads where the speed limit is 50 km/hand vulnerable users are more prevalent, e.g. pedestrians, cyclists, rollers skaters and the elderly Biswas, S.; Singh, B.; Saha, A. (2016)

Road safety is an extremely complex question, on that involves several factors overtime. Moreover, the framework for intervention under pinning the Transportation Safety Policy– Road Component must cover the entire range of problems encountered. This policy sets out the guidelines and priorities that the transport sector and automobile insurance company have adopted to reduce the number and seriousness of road accidents, while maintaining the mobility of persons and goods. Many interveners have been consulted, among others, police departments, several municipalities and various government, public and private agencies, including a number of road transportation industry associations (Cafiso, S. D'Agostino, C.; Persaud, B. (2018).

Consequences of RTA

Economic: Millions more are injured; it is since policymakers mainly those in low- and middle-income countries persist to get these clarifications out of reach. In This study it is revealed that RTA mitigation strategies implementations have secured hundreds of thousands of lives in current decades in several high-income countries in Europe, Australia, Canada, Israel, Japan and New Zealand, among others Bonin, G.; Folino, N.; Loprencipe, G.; Oliverio Rossi, G.; Polizzotti, S.; Teltayev, B. (2017).

Social Losses*:* Recently RTA which is anticipated to be the ninth primary cause of death across the entire age cluster internationally, road traffic collision lead to the loss of over 1.2 million lives and cause nonfatal injuries to as several as 50 million people around the world annually, (Persson A. (2008).

Worldwide RTA Mitigation Interventions

A road traffic arrangement intended for safe, sustainable use road traffic deaths and serious injuries are to a big level avoidable, since the risk of acquiring injury in a collide is largely predictable and many countermeasures, verified to be effective, exist.

Reducing motor vehicle traffic efficient land use, safety impact assessments of transport and plans and implementation, providing shorter, safer routes, trip reduction measures where possible; such as making greater use of electronic means of communications as a substitute for delivering communications by road; encouraging more people to work from home, using e-

mail to communicate with their workplace, restrictions on vehicle parking and road use, encouraging use of safer modes of travel Cafiso, S. D'Agostino, C.; Persaud, B. (2018).

Giving priority in the road network to higher occupancy vehicles is also another strategy of RTA mitigation. According to world report on road traffic injury prevention, giving vehicles with many occupants' priority in traffic over those with few occupants is a means of reducing the overall distance travelled by private motorized transport – and hence of cutting down on exposure to risk. This strategy is adopted by many cities internationally. For instance, the high-capacity bus system in the city of Curitiba, Brazil, gives separated bus lanes, priority at traffic lights for buses, as well as safe and quick access for users Persson A. et al. (2008).

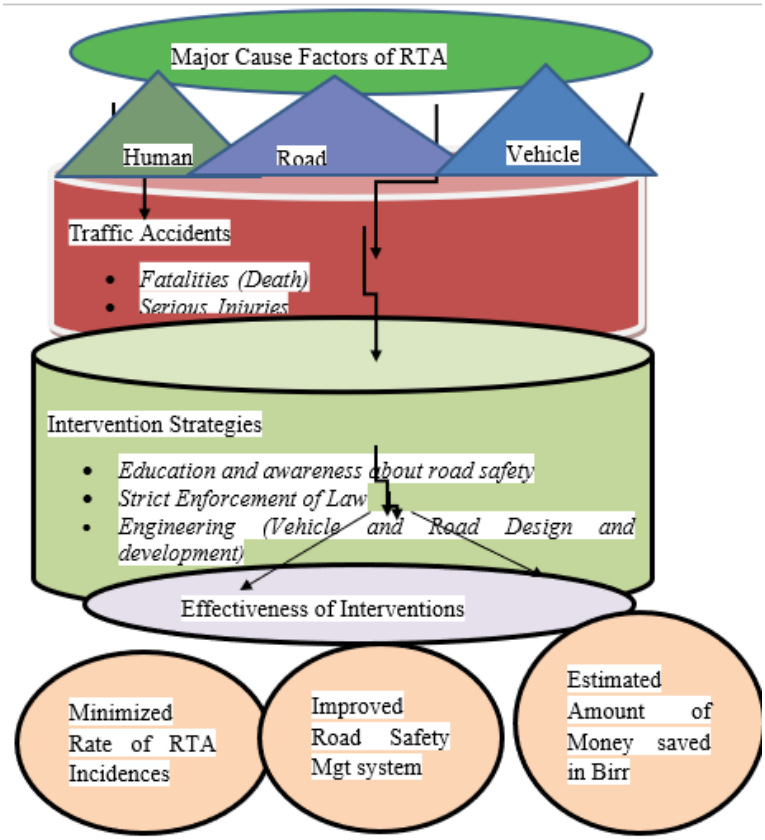

Fig. 1: Conceptual Framework Model

Source: Researchers own model, 2019

Thus, the above diagram was designed to conception of the possible sources of major causes, interventions, and their effectiveness to minimize the road traffic accidents in the city. Each proposed.

Human Factors

The major human factors which are causing chronic traffic accidents are Drivers' and pedestrians.

Drivers' Factors: Among the other causes of traffic accidents driver factors are the major ones. These include over-speeding, reckless driving, violation of rules, failure to understand signs,

fatigue, and alcohol consumption etc. Various Studies indicates that drivers take the higher share of accident causes of deaths, injuries, and property damages than injuries and fatalities caused by non-driver factors. In addition to these running a red traffic light or stop sign, tailgating, distracted driving, fatigue and driving without legal license plate are among the driver factors causing traffic accidents. American Association of State Highway and Transportation Officials (2010)

***Pedestrians Factors**:* Pedestrians factors include crossing outside the crosswalk, crossing against the traffic signal, walking along causeways, carelessness, illiteracy, crosses at wrong places moving on carriageway, jaywalkers etc. This might be sourced from the various pedestrians'' behaviors such as illiteracy, distract or alcohol or drug influences Teferi Abegaz, Samson Gebremedhin (2019).

Road Infrastructure Related Factors

The other contributing factor for accident occurrences is the effects of unsafe road or highway. These may include road geometry, curves, narrowness of the roads for driving, parking, loading-unloading, unmarked crossways, poor road construction design etc. are the major contributor of traffic accidents. Road conditions includes Potholes, damaged road, eroded road merging of rural roads with highways, diversions, illegal speed breakers and etc. are also the related factors for increasing the level of RTA (Usami, 2016).

Vehicles Factors: These include collapse of brakes or steering, tyres burst or split open, inadequate headlights, overloading, and other technical and mechanical vehicle factors are amongst the others.

IV. Results and Discussion

Soundness/Validity and Consistency of Scale Measures

The validity analysis of the measurement instrument was based on pilot study on 10 selected pedestrians and drivers. This was from minibus drivers and private automobile drivers as well as pedestrians from selected sites.

Gender Category

Among the 36 total respondents of Traffic Police Bureau and Transport Authority of the city 30 (83%) were male and the remaining 6(17%) were females. This indicates that the majority of the participants from both government organizations were male participants.

Age category

Out of the 36 total respondents of Traffic Police Bureau and Transport Authority of the city 21(58.3%) were in the age category of 18-30, 14(38.9) fall under the age category of 31-45 and the remaining 1 respondent was above 45 years. This indicates that the most respondents' age interval was falling under 18-30 and the significant numbers of respondents were at the age range of 31-45.

Educational Level

Of the 36 total respondents of Traffic Police Bureau and Transport Authority of the city 21(58.3%) have college diploma 11 (30.6%) BA Degree, 4(11%) 10/12 grade completed. This

indicates that the majority of respondents' educational qualifications was college diploma, and the very small number of participants completed their 10/12 grades.

Monthly Income

Out of the 36 total respondents of Traffic Police Bureau and Transport Authority of the city respondents' 6(16.7%) 2001-3000, 10(27.8%) 3001-4000, 11(30.6%) 4001-5000 and the other 8(22.2%) earned monthly income range of Ethiopian Birr. This précised that majority of respondents were monthly earnings were falling between 3001-5000 Ethiopian Birr.

Drivers Demographic Profile

Next to the government employees the questionnaire respondents were selected from the drivers reside in the city. The drivers were purposively selected from bajaj, non-bajaj taxies, private automobile and government owned vehicles drivers and the heavy goods vehicle drivers were excluded. Accordingly, the profiles of the drivers were indicated on the table 4.2 below.

Gender Analysis

Among the 338 total respondents of drivers within of the city 300 (88%) were male and the remaining 38(11.2%) were females. This indicates that the majority of the driver respondents were male participants, and the numbers of the female were very small relatively.

Age Ranges of Drivers' Respondents

Amongst the 338 total respondents of drivers 159(47%) were at age range of 18-30, 132(39.1%) 31-45 and the rest 33(9.8%) were above 45. This indicates that the majority of the drivers' respondents' ages were classified between the age ranges of 31-45 years which represented the middle productive age group participants.

Educational Levels of Driver Respondents

Regarding the educational level of the drivers, amongst 338 respondents 2(0.6%) were at level of 1-4, 23(6.8%), 114(33.7%) 9-10, 92(27.2%) 11-12 and the remaining 86(25.4) were at educational level of above grade 12. This indicates that the majority education level of the drivers' respondents varied between five grades and above grade 12 with the greatest numbers of drivers' participants were found at 9-10 grades level.

The organized questionnaire survey consisted of two parts the government institutions questionnaires survey participants those who were the traffic police and the road transport authority controllers and the drivers' respondents respectively.

Questionnaire Survey Analysis

Organizational procedures of the finding results were conducted according the set objectives. Objective One: Identification of the RTA Trends of Adama city from the years 2015-2019, Objective Two; Investigation of the major causes of RTA, Objective Three: Examining RTA Mitigation Interventions and their level of Effectiveness.

RTA Trends in Adama City from The Year 2015-2019

To investigate the trends of RTA of the city within the mentioned five consecutive years, secondary data obtained from ATPB annual statistical data were reviewed. The results of the RTA trends were demonstrated on fig.2 below.

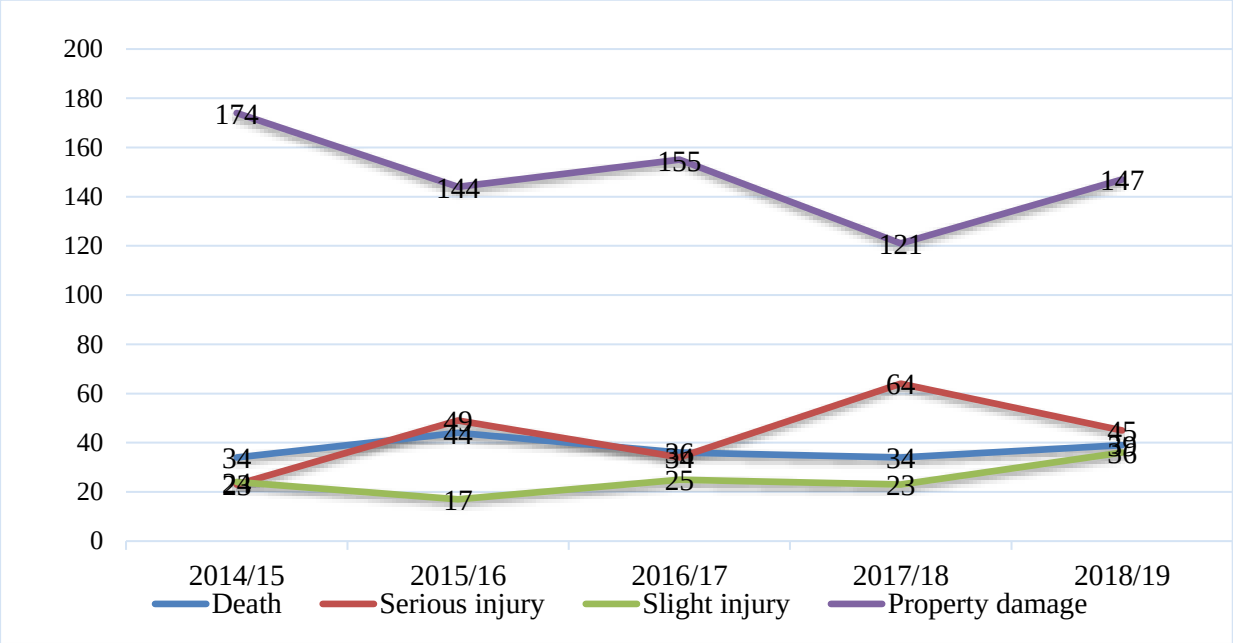

Figure 2: Trends of RTA in the city

Source: ATPB Annual Statistics Report (2015-2019)

As shown on the above fig.1 the overall road traffic accident trends were increasing in the city within the years. This indicated that the road traffic accident of the city was continuing to be a cause factor for the loss of human life, injuries, and property damage.

Table 3: Adama RTA incidence 2015-2019

Types of Injured	Types of Injuries			Total
	Fatalities	Serious Injuries	Light Injuries	
Pedestrians	149	134	100	383
Passengers	56	142	98	296
Drivers	28	15	12	55
Total	233	291	200	734

Source: ATPB Annual Statistics Report (2015-2019)

Severity Rates of Fatality During the Years 2015-2019

Number of fatalities of the pedestrians, passengers and drivers during the year 2015- 2019 were 149, 56 and 28 respectively. This indicated the highest number of vulnerable occupants were the pedestrians followed by the passengers. Accordingly, the rate of the accidents among the pedestrian, the passengers and the drivers were 0.64, 0.24 and 0.12 respectively.

Severity Rates of Serious Injuries During the Years 2015-2019

Number of serious between the pedestrians, passengers and drivers during the year 2015- 2019 were 134, 142 and 15 respectively. This indicated the highest number of vulnerable occupants were the passengers followed by the pedestrians. As a result, the rate of the accidents among the pedestrian, the passengers and the drivers were 0.46, 0.49 and 0.05 respectively.

Rates of Slight Injuries During the Years 2015-2019

Number of serious between the pedestrians, passengers and drivers during the year 2015- 2019 were 100, 98 and 12 respectively. This indicated that the highest number of vulnerable occupants were the pedestrians followed by the passengers. The rate of the accidents among the pedestrian, the passengers and the drivers were 0.48, 0.47 and 0.06 respectively.

The severity rates of the injuries among the types of the fatalities, serious and slight injuries during the years were, 0.32, 0.40 and 0.29 respectively. This means the highest rate of injuries among the types of the three injuries were incidences of serious injuries followed by fatality.

Therefore, the overall tendencies of the RTA incidence within the mentioned years were raising serious injuries. Consequently, this situation is demanding serious and effective mitigation measurement to prevent RTA.

To triangulate the reliability of these findings, the results of the qualitative data on the open-ended questionnaires, KII and FGD results were portraying almost the same results. This means the trends of RTA were increasing from year-to-year despite of some minor decline in sometimes. To compare the accidents' level of severity among the types of the RTA involved during the years, the rates of each accident were computed as follows.

Slight Injuries, Property damages, Insurance payment for Third party life insurance cost were the highest during the last five years. Therefore, the overall tendencies of the RTA incidence within the mentioned years were raising serious injuries.

To triangulate the reliability of these findings, the results of the qualitative data on the open-ended questionnaires, KII and FGD results were portraying almost the same results that the trends of RTA were increasing from year-to-year despite of some minor decline in sometimes.

The Major Causes of RTA of The City During the Years 2015-2019

According to the objective of the study next to the trends of the RTA events of the city the employee respondents were asked about the types of the major RTA contributing factors. As it was demonstrated on the conceptual frameworks of the study, the RTA contributing factors were classified into human (Drivers and Pedestrians), Road and Vehicle related factors. Among the major ***drivers*** related causes are, Braking Suddenly, Failures of the drivers to yield right of ways to pedestrians crossing Deliberate prevention of other drivers from passing running the Red Traffic Light Tailgating, Over Speeding and Parking on Traffic Lanes as well as Running the Traffic signs. The *road factors* are also the other RTA contributing factors. Consequently, the employees' and the drivers' responses to contributing factors related to road were, inadequate road Access for parking, shortage of road access for loading-unloading and unmarked crossways.

Pedestrians' related RTA contributing Factors were crossing outside the crossways, walking along causeways, and crossing with distraction

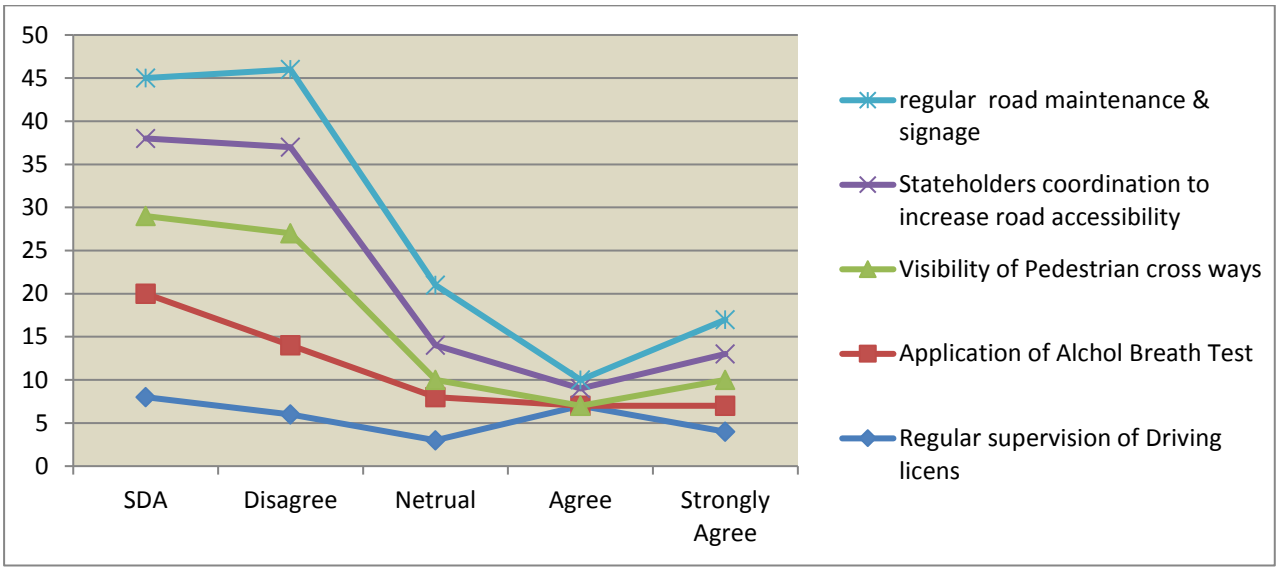

Figure 3: Types of RTA Mitigation intervention practiced in the city during the *2015-2019*

Source: field survey December 2019

The first employees' level of agreement measures on Road related traffic accident mitigation strategy was the availability of regular road maintenance and signage. As it was indicated on figure 3 above out of the 36 employee respondents 10(28%) strongly disagreed, 7(19.4%) disagreed, 7 neutrals, 4 (9%) agreed 2(4.5%) strongly agreed on the availability of coordination among stakeholders to increase road accessibility within the city. This shows that the majority of employee respondents disagreed on the regular road maintenance strategies practiced within the city even if minor numbers of them agreed on the existence regular road maintenance and signage of road traffic in the city during the previous five years. As a result, the local government along with the regional and federal government is expected to design appropriate RTA mitigation strategies related to signage installation and regular road maintenance.

Findings on the level of the effectiveness of the RTA mitigation strategies according to the employees and the drivers responses**:** to measure the level of the effectiveness of the RTA mitigation stratefies, were number of fatalities minimized, number of serious and slight injury minimized, and property damage reduced as well as on the overall road traffic safety system improvement. As a result, more than 58% of the employees' and 44% of the driver respondents disagreed on the improvement of the overall road traffic safety system within the city. The questionnaire findings were also triangulated with KII and FGD results which ascertain that the effectiveness of RTA intervention strategies applied during the mentioned five years did not brought the overall improvement of road traffic safety system within the city.

V. Conclusion and Recommendation

Conclusion

According to the study results of the entire data collection tools the RTA incidences of the city were increasing as the perceptions of the most study participants.

The RTA major contributing factors were human, road, and vehicle factors. The RTA mitigation interventions undertaken by the three different government sectors which include Adama Traffic Police, Adama Medical College, Ethiopian Insurance Corporation Adama Branch, Adama Transport Authority and Adama Municipalities and other concerned bodies have interned to implement different mitigation strategies to minimize the RTA incidences. Among the strategies undertaken the major ones were categorized as pre-accident, during accident and post-accident mitigation strategies. The pre-accident or preventions strategies include strengthening of the enforcement of road traffic law, application of information technology, training and awareness creation of the drivers and local community, training and assigning volunteer youth supporting pedestrians crossing at peak hours, signalization of the major roads, signage of pedestrian crossing (zebras), restriction of the traffic volumes by proscribing HGVs crossing the city and directing them to use the other alternative roads available when traveling to Djibouti, Diredewa and other areas, Restricting three wheels vehicle drivers to use the main roads and letting them to use the cobblestones and other substitutive streets, Resource mobilization for traffic light installation and fixing warning light on selected road sites. On the other hand, during and post-accident measures were the actions or lifesaving and minimization of the level of injuries. Even though there some attempts started to reduce RTA within the city, the level of the effectiveness of the mitigation strategies practiced in the city was very low.

All the problems and consequences of RTA mitigation strategies implementation in Adama city were initially the results of lack of restrict enforcement of traffic rules, absence of adequate capacity building for all road users, failures of the concerned bodies to prepare effective planning and implementation and the non-existence of consistent monitoring and evaluation strategies for road safety improvement measures.

Recommendations

To reduce the RTA within the city:

Restrict enforcement of road traffic rules and regulations indicates that the road users keeping within fixed limits of road traffic laws, policies and guideline enacted at national and international levels. Measuring of the effectiveness of the mitigation strategies is very important. Thus, to attain the success of RTA mitigation interventions such actions are recommended: Restrict Enforcement of Traffic Rules and Regulation Biswas, S.; Singh, B.; Saha, A. (2016).

Continuous Capacity Building Programmes for All Road Users towards Road Safety**:** which include on job training for drivers on vehicle technical and mechanical aspects as well as road safety, road traffic rules, and compliance procedures, adequate training for traffic police students and volunteer youth to help the pedestrians' crossing at peak hours and education and awareness creation for local communities on basic traffic laws

Regarding the enormous number of different techniques of RTA mitigation such as road safety programmes, road maintenance, signalization, and use of relevant technologies as well as local community mobilization towards safe mobility required to be prioritized.

In addition Appropriate Physical and Financial Planning and Implementation for upgrading road access, Improved Policy Formulation and Implementation, Application of Appropriate Technology, Sustainable Road Safety Protection Measures, Consideration of Vehicle Importation and regular inspection of their technical aspects, Consistent Monitoring and Evaluation of RTA performances, Classifying Roads according to their functions, and Setting Speed Limits suitable to the configuration of the city (WHO,(2009) Bedard M, Guyatt GH, Stones MJ, Hirdes JP (2002.

Generally, the policy direction of both Federal and regional Road Construction of Ethiopia the city government is responsible for providing safe, cost effective, and sustainable road access to the users. This means that city government along with the federal structures required providing:

An adequate, safe, cost-effective, and efficient road infrastructure within the boundaries of Adama as well as for facilitating cross city road communications with neighboring urban areas and other cities. These far-ranging responsibilities are the obligation to:

- Make sure that accessible roads are adequately maintained in order to provide appropriate level of service for road users
- Improve existing roads to necessary standards to enable them to carry prevailing levels of traffic with the required level of safety
- Provide new roads to the required geometric, pavement design and safety standards
- Appropriate implementation of the four Es of Road Traffic safety majors which include Enforcement, Education, Engineering and Environment. These elements must be applied by the concerned bodies as trust of RTA prevention and control across the city.

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1.3. Government Dealings and Strategic Communication Towards Consensus Building: Burayu City Administration, Oromia Regional State, by Amenu Bekele

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Abstract

Nowadays, peoples of this planet are different in attitudes, political ideology, religions, races, ethics, and identities; the expansion of this difference lead the peoples to develop different perceptions, feasibly stereotyping behavior and prejudices among the communities of different ethical compositions. Thus, this study was designed to undertake the different practices of local government officials and how they use effective strategic communication towards Consensus Building in Burayu City Administration of Oromia Regional State. Accordingly, the study employed qualitative approach; purposive and snowball sampling techniques were used to select the participants. In depth interview, focus group Discussions and content analysis were used as the tools of data collections. Four key informants from city administrations, three traditional leaders, and three religious leaders were selected for interview and 27 youth had been selected from the city for Focus Group Discussion. This study revealed the performances of local government officials and their accomplishments through effective strategic communication in building community relationships and exposed some challenges and constraints of communication and other factors to build consensus among the peoples of the city. Based on the respondents' suggestions, the study concluded that untimely communication events, more communicated but less in actions, ineffective way of communications, prolonged interest of the peoples, and political impacts are some core problems for the consensus. Finally, this research recommended that the government should create and facilitate open communication and dialogue that initiates holistic public participation among the communities; and the community ought to respect the identity difference and promote tolerance to feel a sense of humanity.

Keywords: Identity within Diversity, Communication, Trusts, Sense of Humanity, and Consensus

I. Introduction

Multi-nation building is a strategic process that involves various resources and policies, and communication is one of the most important of those resources. A nation exists by the consent of its people and by recognition of a common heritage that is communicated by various social practices. As it is cited in (Burkart, R. 2004. p. 144,) Philosopher, Habermas intends to make "understanding" (and thus consensus through communication) that discernable as a fundamental democratic process. By scholarly definition, Frandsen (2018) cited in his article that strategic communication is purposefully communicating in advance to create relationship; and also, latter redefined that 'Strategic communication is the practice of deliberate and purposive communication that a communication agent enacts in the public sphere on behalf of

a communicative entity to reach set goal" (Holtzhausen and Zerfass's 2013, p. 74). Therefore, it is unexpected to create Consensus without effective strategic Communication. Accordingly, strategic Communications need to be seen as essential and a key to peace and consensus building through the daily activities of local leaders to create awareness among the communities of the environment.

The reflective model of communication management sees strategic communication as "engaged in constructing society by making sense of situations, creating appropriate meanings out of them and looking for acceptable frameworks and enactments" (Van Ruler & Verčič, 2005, p. 266). Kent and Taylor (2006) emphasize the importance of public relations in a sense 'communication' to the successful implementation of the nation-building objectives and state: "communication as a tool for multi-nation building must be understood as that which creates and maintains relationships" (p. 357). This study explores the government dealings through operational strategic Communication in the process of consensus building among the heterogeneous peoples of Burayu City, government of Oromia regional state.

The issue of creating consensus and mutual understanding through strategic communication is intended to bring social relationships; as well as various government activities are significant for any the nations of this world. American Political Scientist Robert Putnam's studies have concentrated on democracy and society at large, and he argues that society today has seen a decrease in a sense of community. Despite technological development and the new media, and in fact partly because of them, people today have fewer interpersonal relationships than ever before. There has been a generational shift, and people have become isolated; they no longer belong to clubs and associations or do things together, but instead they even bowl alone (Putnam 2000). Putnam argues that people of today have lost a sense of community, which makes collaboration and relationships difficult to establish and maintain.

It is unquestionable that this world is mainly focusing and talking about their norms, promote their culture, and give values to their identity. That is blameless idea, and it should be encouraged positively. However, the problem is when one cannot understand the others interests and willingness equally with his/her own interests. And the availability of this kind of attitude is highly occurred and practiced everywhere in the worlds but particularly in Ethiopia; and the same is true for the selected area for this study (Burayu City). Today, our peoples of this planet are different in attitudes, politics, religions, races, ethics, and identities and this leads them to develop stereotyping behavior among the communities of different ethical compositions. It also creates ideally discriminated and hopeless peoples in their lives due to the expansion of hostility based on the diversity of perceptions and attitudes.

This research was designed to investigate the effective communication strategy and assess the practice of government relations meant to manage serious problems like; hatred, ethnic discrimination, as well as dissemination of hostility among the societies of the city and the study could indicate that how well-designed strategic communication that practiced in the daily life of community solve these conflicts and foster mutual relationship or consensus. Therefore, this study explored appropriate or effective strategic communications and assessed the practices and roles of government relations towards consensus building in Oromia Regional state Burayu City. The research questions are:

1. *What are the actions that government official's carryout for consensus building purpose?*
2. *How Strategic Communications is helpful to build consensus in heterogeneous peoples?*
3. *How much the Communications that used by Government officials are trustworthy to the communities?*
4. *What are the challenges that the Government encounters in practicing strategic communication to bring harmony among the peoples?*

II. Methodology

Research Design

In fact, this inquiry furthermore followed an Evaluative research type to assess and analyze deeply the roles of Local Government (LG) and applications of Strategic communication specifically for the purpose of consensus building. Accordingly, some scholars stated that "The policy, strategies, guidelines, rules and regulations and governing the operations of an institutions or organization and community can be studied through evaluative type of research design" (Belay and Abdinasir, 2015 p.78). Likewise, the study also administered through the theoretical framework of Social Capital and Communicative actions as well as in the sight of Public Sphere theory.

The qualitative research approach was employed in this study. Qualitative research today involves closer attention to the interpretive nature of inquiry and situating the study within the political, social, and cultural context of the researchers, the participants, and the readers of a study (Cress well, 2017). Hence, Qualitative research is all about exploring issues, understanding phenomena, and gaining insight into peoples' attitudes, behaviors, value systems, concerns, motivations, aspirations, culture or lifestyles.

Sampling techniques

Since this study employed qualitative research approach, sampling techniques should also be designed as it goes with qualitative research methods. So, purposive and snowball sampling techniques have been used in this research. According to (Cress well, 2017) purposive sampling Techniques can be used to select appropriate and valuable respondents and collecting the fact and first-hand information. In addition to Purposive sampling technique, the researcher used Snowball Sampling techniques for further study and to gain a reliable data. Snowball sampling techniques was also be used to get more relevant data which strength the study. Snowball sampling is a method of gathering information to access specific groups of people and it is a design process of selection data usually done by using networks to contact the key informants.

Sample size

It is impossible making all residents of Burayu city the participants of this study. The sample size decided for this research was thirty-seven (37) people. These people were purposively selected from the entire city. Those respondents were from local government officials (LGO), communication head office and experts, religious leaders, and traditional elders of the environment/city had been conducted an Interview purposively and by using snowball techniques, as well as three FGD which consisted of 8-10 individuals from each groups had conducted with youths of the city as a main part of the community. Contents analysis of the

plan of municipality office has been used to assess the implementation of strategic communication in line with plan on the paper.

Data Collection Procedures

In this research the methods of data collection are Interview, Focus Group Discussion (FGD) and Documents Analysis. Interview is a technique of generating primary data in which the interviewee gives the necessary information verbally. As Belay and Abdinasir (2015) explained in their book, the purpose of interview is to explore a certain behavioral phenomenon in depth and breadth using those few but focal persons who are closely related to the research agenda. The second tool of data collection is Focus Group Discussion. Focus group interviewing is a research strategy for understanding audience attitudes and behavior. The individuals or members were gathered according to their societal similarity and their own interest and creativity and motivation as well. The researcher and his assistants played moderator roles. Lastly, the researcher analyzed the written strategic Plan of the city administrations (Municipality office) and Government Communication affairs Office of Burayu city administration. In this document analysis, the issue of Consensus Building and applications Communication strategy had been focused on.

Data Analysis and Interpretations

The data were collected through different tools as it is mentioned in the data collection methods and the analyzing was also being processed according to similar idea gained from the participants. The data collected through Interview and FGD were analyzed and interpreted according to the similarities of the response given from the respondents are largely spoken by the local peoples of the city and later translated into English through verbatim transcription and explicitly interpreted by the researcher without any distortion of the idea. The codes have been given in order to virtually represent the actual key informants of FGD and Interview. After the data transcribed properly, analysis techniques were done by the researcher. All important issues were arranged under thematic topic and the results have been cautiously analyzed.

III. Results and Discussions

All respondents in this study are the most influential informants those who contribute for the success of the study. The results gained from respondents were discussed cautiously. The key and important point need to be studied in this research was categorized into thematic topic. The result of data collected from the interview and FGD have been properly transcribed, interpreted and analyzed with a given code for each respondent of interview (i'e I1, I2, I3,.. which means 'I' represent an 'Interviewee') and the same code applied to Focus Group Discussions (FGD A1, FGD B1,... here 'A/B' represents the number of FGD, '1' represents the an individual in the FGD).

Strategic Communication for Consensus Building

It is inevitable to think about the communication when we talk about consensus and agreement. Consensus can be improved and built through war and conflict. Some scholars emphasized that 'societies and social organizations are held together not by consensus but by constraint, not by universal agreement but by the coercion of some by others' (Onuoha, 2010, P.11). Even if

consensus is built by constraint and coercion its end may not be successful forever. Therefore, strategic communication is the best techniques that help to build consensus for long-lasting time.

While the researcher asked the participants about communication practices in the city to organize the community of the residence, three respondents who conducted an interview from different sectors were responded that the Local government is practicing very important tasks especially in unifying the societies of the city. According to the response given by 'I3' during interview, the main objective of this office is to create National consensus among the peoples of the city. When we say the peoples of the city, it is not only about a single specific community those who are identical in language and identity or cultures. It should concern all residents of different ethnic having understand about national consensus that needed to be implemented among all peoples (Personal Interview, 2019).

This emphasizes that the municipality office is actively working to create united society in their daily activities, as well as developing good rapport between the government and among the peoples themselves regardless of their language, ethnic and different ideologies. As the statement explained, the main goal of the organization is to bring the national consensus at nationwide, this implies that they are on the way to build nation which is one of the big responsibilities of the government. In contrast, other respondent from the community (I5) replied, the Government (LGO) did contribute nothing for the relationship of the community; many times, they focus on their political advantages. Their concentration mainly about the economic development, supporting political ideology of the ruling party but they have no space for the communication which strength national consensus. This contradicted idea with the first one when the first idea is given emphasis to building social connection, the second one stressed that there is a communication gap on behalf of the government to realize the vision of strategic communication in consensus building process. Additionally, according to other respondents reacted in their discussion during FGD, no Communication done before an incident happened last time in the city. If the people had strong communication cultures, that conflict would have not happened. In the same way, all interviewees from the part of community likewise agreed upon that the government only prepare the stages to discuss with local peoples during crisis happened. It is also intended to solve the problem but not to foster the future relationship of the community, they have only an option to use politician words to persuade at that time, to change the heartbeat of the audience and anyhow this is not helpful for long term solutions. The peoples' wishes are the sustainable relations with each other by developing the Consensus among everyone and understanding the culture, identity, values, and every societal principle. As it is cited in Rhee, Y. (2004) case study of a government organization, the Public Relations scholar Grunig (2006) was renamed the maintenance strategies as cultivation strategies, and he demarcated cultivation strategies as communication methods that public relations people use to develop new relationships with publics and to deal with the stresses and conflicts that occur in all relationships. Therefore, this point of view (relationship cultivation strategies) is just important for the communicators and LGO's of the city to sustain consensus.

The government officials were asked in interview about their strategic communication activities, and they replied that the office has top down structure, and relationship with the

stakeholders and households; this means they highlighted that the organization have a chain members from the top management to village level as an agents, those agents can deliver us the new idea, information or message if any problem happen in the community and this system enables the communication to smoothly disseminated.

Conversely, many respondents in their responses couldn't agree with this idea and they didn't believe that the communication strategy is functioned well between the community and as well as the government also. They told the researcher that, there are some that lack with the LGO in working on the relationship of the peoples and satisfying them by fulfilling some necessary criteria which join the peoples together. The society gets the stage after the conflict happened between Oromo and Dorze peoples. Therefore, the intention of the meeting was to manage the seriously conflict otherwise the strategic communication was not intended to create consensus between the two bodies. Even though there is a top-down structure of communication in the organization, it is possible to identify from the interviewees that there is low performance to bring consensus among the peoples. Relating to this, scholars also argued that communication is important to build relations than to use it only as conflict management. It was cited and paraphrased by Emma Wood (2001, p. 83), emphasizing Van Riel's corporate communication that, it is founded upon the notions of strategic management and relationship building; "corporate communication is an instrument of management by means of which all consciously used forms of internal and external communication are harmonized as effectively and efficiently as possible, so as to create a favorable basis for relationships with groups upon which the company is dependent" (Van Riel 1995, p. 26).

Government Dealings in Consensus Building (CB)

All respondents believed that the government must construct the sense of community by facilitating the atmosphere and creating the decision-making process in the form of the conference. Frankly speaking said one of the FGD members (FGD.B5) that are the local leaders (government officials) who are highly accountable for the community to attract and make them aware of the diversity and tell them how to tolerate each other. They must facilitate the condition for the peoples and treat them equally, and then the community can easily learn to love each other. The officials in this area are always passive in integrating the peoples, because they are too much busy for the tasks of politics.

Adding to this, one of the interviewees (I8) stated that: *The local governments officials don't care for the local community, but the society are taking care of their government in this local area. Even I can say the peoples are carrying the cargo of the leaders and the leaders are applying to use their authority rather than understanding the community's interest (I8 personal interview, April 15, 2019).*

Almost all participants agreed that there are many important topics which can open the opportunity for communication to close the gap between the societies and government, that is the issue of the basic social need that the community deserve to acquire from the ruling party like electricity power, water service, health center, schools and road and etc., these all things require effective communication, if these issues are communicated well and public interests are satisfied or their questions are answered at the right time, no need of blaming towards the government officials of the city (FGD.C conducted on April 21, 2019). Realizing from the

ideas that indicated in the above paragraph, we can understand that there are objectionable opinions between the leaders and society. The community were grumbled to the governors due to their low activities in serving the society, the effort to organize and unifying the communities was took place mostly in case of social grievances. Scholars confirmed and agreed that, 'indeed, decision making is a communication process in which meanings are constructed and reconstructed, and in which power is enacted and all kinds of communication roles are played. This varies from information and persuasion to dialogue and negotiation' (Ruler, 2004, p.123-143).

Trust and Transparency of the Government

Trust and transparency are the most important spice in building consensus. Whatever issue that you want to communicate with your friends is evaluated by the trust that you have for the message or information. If we lose the trust and transparency, we can also lose our individual respects or organization reputations as well. Hence, this study analyzed the trust and transparency that the government shows in their daily communications. The respondents also discussed and responded to the researcher's question openly. Relating to this matter, one of the interviewees from the government official was asked the question and responded that, 'in the previous time the local peoples or residents of this city have no trust from the government and LGO. However, recently after the reformation done at all levels by restructuring the government's strategy, the government start to listen to the peoples and the peoples are starting to put their trust on him, he said. As we all know, in the former government system (means before deep reform applied) the communication style was not smoothly symmetrical system' he added (Personal communication I5. May 5, 2019). Contrasting this argument, another interviewee (I9) gave details on this response as follows:

Normally I cannot say that the communication of LGO is smooth; because there is no guarantee for what is communicated to the public. It is preferable for the government to tell the peoples the truth on the ground which can build hospitality between the heterogeneity rather than propagating only their political view and try to persuade the peoples and divert their opinion for political agenda. I hope if the government apply and create stage for free discussion with the community of the environment all things would be expected to be improved very soon, and I wish the government officials to make deep reform from top to down at Woreda and village level, as it was started at higher governmental offices. Then the issue of the mobilizing the community to foster mutual understanding and harmony will be undeniably developed. To do this, just the government is still on the starting point and there is a framework but practically it has not been implemented well. Therefore, our expectation is beyond this (Interviewee I9; May 6, 2019).

Understanding the above contradictory arguments, the intention of first respondent was that there is a change between the former and the recent government practices in the city. It may be due to the current reformation from the government; so that the peoples started to believe them and put their trust on the government's accomplishments. In view of that, the respondent tried to give his own view in the statement that the government officials are also starting to pay their attention to the society after they engaged themselves in deep reformations of the regional government. In contrast, the second respondent was arguing against the first one saying that;

the government needs to performance to improve the behavior of telling the truth and showing the trust when communicate with the community; hospitality can easily be developed between the people. According to this informant the new reform hasn't be reached in the community to bring change.

Above and beyond this, other informant (I3) certainly exposed his idea and told the researcher, that in the city administration of Burayu**,** the communication between the local government officials and the community is not depends on truth. When the ordinary peoples want to communicate the local leader of the city or their staff members for some issue, it is impossible to get what they need from them through communicating; they need some money to solve their problem or to answer your question. So, that it based on relatives (kinsfolks) and money can do so many things in this city more than smooth communication (Personal Interview I3 may 8, 2019). Adding to this, the participants of FGD said; we don't believe that there is trust in the communication of the officials; the society itself is tiresome with communication of the government officials (LGO). That is because of their communication and their action/ practice are not relevant. Nowadays there are many cornerstones in our environment that put by the mayor of the city for the purpose of city development; but it is just only oral manipulation than implementation of what they promise to the people (FGD.B April 27, 2019). Even though the FGD participants and interview respondents are complaining the government officials for their mistrust, some interviewees from the sectors replied that delaying to answer for people's questions is not to deny them. The people need immediate response but the government needs to act according to its strategic plan. We encountered the challenges of peoples' misunderstanding for the reason of failure to responsiveness (Interview from the officials, April 12, 2019).

The statements of respondent I3 indicates that the officials were not serving the public fairly, and more of the services delivered based on the relationship between the customers and a form of reciprocal service practicing the local officials. The second (from FGD) also support this argument, and in addition to that, the FGD informants justified that the government is not as smart as its speech to applying what swore to his people and their communication has not been supported by action. Therefore, it causes despair to the community and fails to accomplish what make promises and again leads the community to become less interested in their participation. Johanna Fawkes (2016) also emphasized that 'your work has value to society, generally. The social value of public relations is often presented as enhancing democratic processes through skilled communication. However, there are many critics who see only propaganda and distortion in our work, particularly in the political fields' (p. 73).

Challenges in Consensus Building

The major challenges of community relation and obstacles to build consensus among the community was discussed with key informants and respondents. The respondents shared idea on the factors that affects consensus starting from their personal experiences. As well as they itemized the main challenges and obstacles one by one and argued on the issues seriously. Relating community relations in Burayu city administration, one of the group participants told that, the first reason for diversity is caused by demographic or geographical setting. This means the difference can found at least between the peoples of the same culture, identity, religion**,**

language and ethnicity as a result of the geographical scene. In this city also since these all peoples come from different are areas, their political ideology is also quite different, and it leads them to suspect each other due to the political system of this country has not been stabilized yet. In addition to this, respondents also explained that the history has also an impact on certain society to harm the current relationship as well as multiple party system can divert the mindset of the peoples in the area that affects their relationship even at national level. This view was mentioned by Putnam (2000) that social capital depends upon the past experience whether it is good or bad history. Informants' reflection in the FGD just enables the community to know that they have different culture, values, languages, norms, religions, and attitude especially ideology towards politics and everything in the life and just like that we must also respect all diversity in the city. Lastly, the respondents explained their future demands that; if consensus is successfully built among the society, the social relationship is much important for economic and technological development, sense of social cooperation; and contributes stabilized political phenomenon.

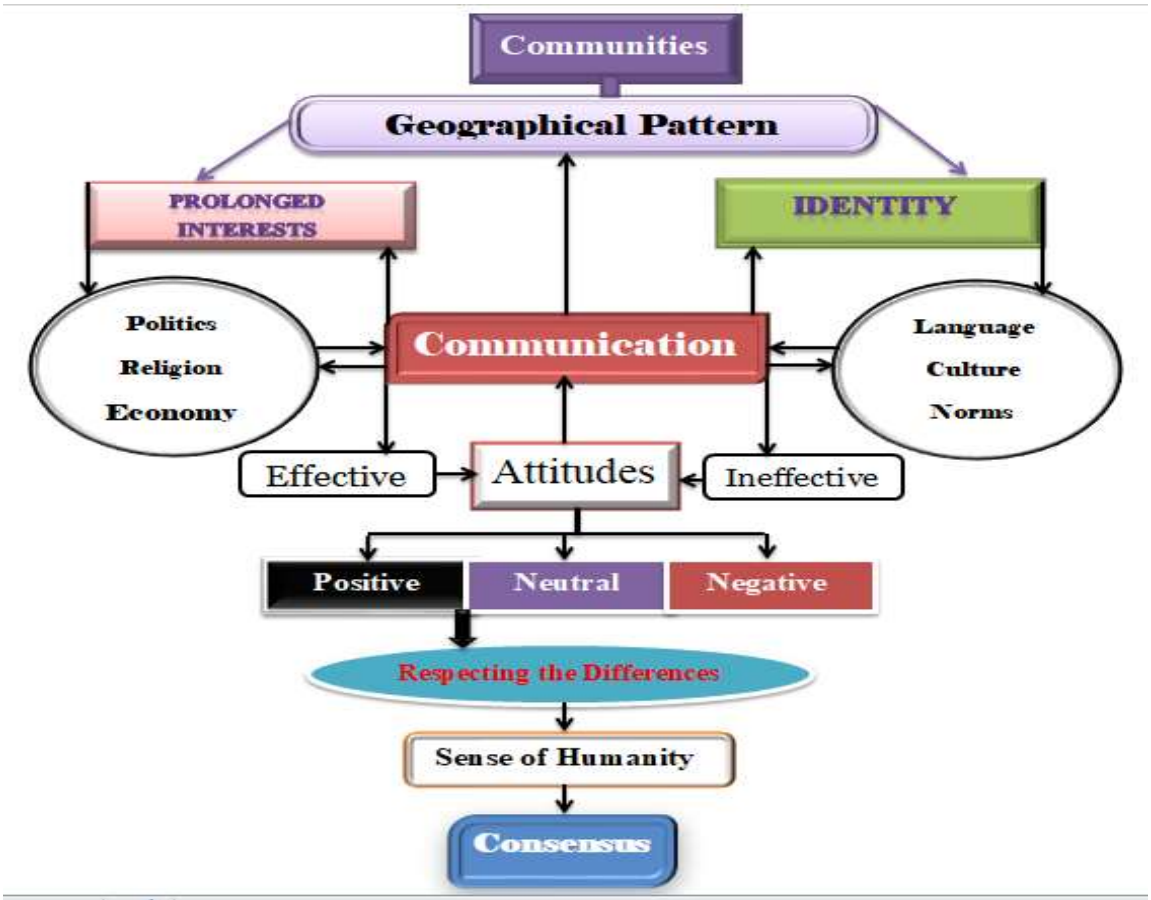

Figure 1: Influential Components of Consensus Building; framed by the researcher (2019).

The above frame shows that the initial point in the community relation is the Community themselves. These communities are dwelling in the different geographical areas. Therefore, the chart indicates diversity of peoples from all environments and how communication integrates them together. The first thing that differentiates the people is geographic pattern; peoples may be from different geographical features, having their own 'prolonged interest and identity' mainly. 'Prolonged interest' can be a collection of politics; religion, economic, different human

needs and wants and the 'identity' can also consist of languages, culture, norms, values and etc. The researcher compiled the necessary data and built the vivid and colorful block on how to build consensus in particular area of community and nation building at the nationwide. In the process building consensus communication is the central one and attitude is the debatable issue and thinking humanity (accepting every person that he/she is a human being) is and agreeable one to achieve consensus. The frame that shows the difficulties or opportunities in developing consensus was designed by the researcher based the data evidence here under. This frame is termed as an 'Influential Components of Consensus Building.' These components can successfully accomplish the consensus among the communities; if and only if the communication is effectively used and the peoples have well understood of the difference in the phenomena.

IV. Conclusion and Recommendation

Conclusion

This study aimed at assessing the government relations and strategic communication towards Consensus building and it employed the qualitative approach and as well as purposive and snowball sampling techniques in data collection procedures. The data collected by interview and Focus Group Discussion were successfully organized and Document analysis of the organizational plan was reviewed and analyzed well. Accordingly, the previous practice the government practices was not recognized and acknowledged as role player in building consensus among the residents. The study also pointed out some challenges for the community and government in creating relationship; these problems are improper use political propaganda and related issues by various media platforms, continuously act of unidentified body which stick to creating ethnic clash and intensifying identity-based conflict among the peoples. Accordingly, multiple party system and issues related with religious and environmental differences are some problems recognized in the study. The study also identified that there is lack of trustworthy in the daily communication of the government officials towards society despite their orally manipulated speech many times. This also showed that the Local Government Officials are shortfall of the truth for their communication and failure to apply the strategy. As it was voiced in the study, the current generations are truth seekers generation. They believe in unity and harmony, and they need someone who can understand their inner integrity for social integrations and develop cooperation by respecting their natural diversity.

Recommendations

Based on the study carried out and the data reported in this research, the researcher found some problems and tried to give tactical and operational endorsements on how to close communication gaps on behalf of both the government and the communities; that it need to be recommended to substantiate well societal relationship and liaisons for future generations.

- Well strategic communication which aimed at community centered approach must be implemented in the municipality and communication office of the city. Since the communication department is undervalued in building consensus and relationships at city level.
- Community's traditional associations should be encouraged by the government steadfastly and communication needs to be applied strategically.

- ❖ The government must prepare formal and participative stage of communication regularly to scrutinize the level of community relationship and rapport.
- ❖ The government should play pivotal roles in community mobilizations to reestablish and regenerate the unity that makes the society feeling as oneness and togetherness with all nations, nationalities, and variety peoples of the country.
- ❖ Interethnic relationship should transparently be established among or between each nation, nationalities, and peoples of the land; then the government should work on trust to the society.
- ❖ Everyone should have respecting the difference and having a sense of humanity rather than discriminating each other based on identity and cultural values. To live peacefully each society should understand and respect one's culture, norms, languages, and other social values.

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1.4. The Impacts of Polarized Political Parties on Transition to Consolidated Democracy in Ethiopia by Negera Gudeta

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Abstract

Political parties play a significant role in consolidating democracy especially in the country where plural politics is modes operandi of the state. Well-functioning of democracy depends on the well performance of political parties. The same holds true for Ethiopia. Ethiopia has short history of party system. It was the 1960's Ethiopian student movement which laid a foundation for birth of party system and party politics in Ethiopia. This study examines the impacts of polarized political parties on transition to consolidated democracy in Ethiopia. To this effect, the study employed qualitative research approach and the study is based on extensive review of literatures and desk review. The finding of this study disclosed that though political space was more open in in the early phases of political reforms in the political history of the Ethiopia than before, the political parties' contribution is not much visible in leading country to consolidated democracy. Additionally, this study found that, polarized nature of Ethiopian political parties is a threat to Ethiopia's transition to consolidated democracy. Moreover, this study found that, polarized political parties monetized or marketized politics which is an existential threat to the survival of the state. This study suggested that, Ethiopian political parties should come together and create coalition to realize the country's stalled transition to consolidated democracy. Moreover, the study also suggested that political parties in Ethiopia should develop tolerance, compromise political culture and positive sum game which serve as a bridge in transition to consolidated democracy.

Key words: Ethiopia, Political parties, De facto transition, democracy

I. Introduction

The advent of strong and courteous political parties is a common feature of democratic politics in modern day. For a democracy to function properly, it needs political parties to provide alternative political agendas and electoral competition. In other words, this is to mean no political parties no democracy (Kotzé H. and Garcia R., 2008). The role of political parties in a democracy includes but not only; criticizes, check, offer alternative policies, and replace the incumbent party. A multi-party system provides an outlet through which people can participate in their government and address the issues at hand (Mcmahon E., 2004; Wondwosen T., 2009).

Thus, political parties play a decisive role in realizing liberal democracy in the process of democratic consolidation especially by structuring electoral process and disseminating the important information to the public which serve as an alternative policies and political

programme. Lack of strong political parties impairs not only transition liberal democracy but also the efficiency of the incumbent government (*Ibid*).

In Africa opposition political parties mushroomed especially since 1960's post-independence period. However, African democracies rapidly began succumbing to authoritarianism. Political repression, single-party states and military rule became the political culture of the continent except few countries which managed to realize consolidated democracy. Lack of strong political party may impair transition to consolidate and liberal plural democracy and party in power efficiency and the fragmentation of political parties played a lion share role in backsliding democracy in most of African countries. A fragmented and un-stable political party is a serious threat to the consolidation of democracy in most of African countries.

Ethiopia, the oldest state in the world has short history of party politics like other African countries. The popular dissatisfaction with feudal political system which characterized is by assimilative policies open political debate in 1960's contributed to the birth of Ethiopian Student Movement (ESM) which in turn led to the birth of party system in the history of Ethiopian politics. Ethiopian Socialist Movement (MEISION) which created in 1968 and Ethiopian people revolutionary party (EPRP) which created in 1972 were two direct offspring of Ethiopian Student Movement. Since then, polarization has been the defining features of political parties in Ethiopia which holds down the country's transition to democracy. Basically, this study will answer the following research questions; What are the challenges that fractured and polarized political parties poses to Ethiopian transition to consolidated democracy? How Ethiopian polarized political parties contributed to backsliding of democracy Ethiopia?, How can institutionalized political parties contribute to Ethiopian transition to plural liberal democracy?

II. Review of Related Literature

Political Parties, Polarized Party System: Operationalizing the Concepts

There is no universal, cogent, and elegant definition provided for political parties by experts of the area. Political party constitutes a group of people who come together for promotion of a common vision by aggregating interests around a common agenda and formulating informed polices to implement when they get a chance to assume power. Political parties aim to capture state power and control the public policy-making process within the confines of the constitutional and legal framework of the given country (Merera G.2007) and Political parties are crucial actors in bringing together diverse interests, recruiting and presenting candidates, and developing competing policy proposals that provide people with a choice (Chege, M. 2007).

Political party seeks influence in a state, often by attempting to occupy positions in government, and usually consists of more than a single interest in the society and so to some degree attempts to aggregate interests (Boafo-Arthur 2003 as cited in Merera, 2007).

Additionally, political parties also play a significant role in democratic process, inter alia they formulate political and policy agendas, select candidates, conduct election campaigns, monitor the work of their elected representatives, link citizens and the government, providing a means

by which people can have a voice in their government, mobilize voters on behalf of a common set of interests, concerns, and goals (Akhtar N.2011).

Political party gives channels for citizens' participation in government decision-making processes, and they are significant conduits and interpreters of information about government and the role of an opposition party in democracy is to criticize, check, offer alternative policies, and replace the incumbent party (Wondwossen T.2009). Political parties in opposition are the most effective means of creating checks and accountability in hybrid regimes and, therefore, the most important prerequisite for democratic deepening (LeBas A. 2003 as cited in Wondwossen T.2009).

In the nation where, democracy is mode of operation states daily activities, political parties in opposition play significant role in deepening democracy. They promote the vertical accountability of the government via linking government and the people, criticizing the ruling party's policies, ideas, and programs, and offering alternatives as they serve as the government in the waiting.

According (Kiiza, J. 2005), in democratic system, political parties perform the following functions: Political parties are important organs for aggregating the interests of the political community, promotes national conversation and pushes democratic discussion to a higher level of political development and maturity, hold the government to accountable for its actions and reactions, present a viable alternative to the incumbent government by designing alternative ideas, principles and policies for governing society and strengthening the culture of democracy within the party and the political community in general (Kiiza, J. 2005).

However, only strong political parties are fit to these performances. Polarized political parties are ineffective to perform these functions. Polarization of political parties is one of the defining features of modern political party system. However, experts of the area defined it differently. There is no consensus among the scholar of the area on operationalizing it. A polarized party system is defined as ideological distance between parties and aggregated ideological differences between parties (Schmitt J., 2016). According Frazmann, S. and Schmitt J., there are three indicators of party system polarization inter alia, existence number of extreme parties, ideological rage and vote share weighted standard deviation (Frazmann, S. and Schmitt J., 2016).

Party polarization is defined as ideological distances among political parties in left- right ideological continuum (Young L., 2003). Graham D. and Epstein D. defined polarized party politics as growing divergence among the political parties and division of ideologies which include wide range of issues like political programme, social policies, and economic policies and more than mere disagreement, but it is also not as dire as two sides engaged in an all-out battle for supremacy (Graham D. and Epstein D., 20007). Thus, in polarized politics, opposition political parties focus on their difference more than things they share together which in turn impair the nation's democratization project.

Polarized party system also implies distances in policy stances or attitudes between groups of people, parties, or specific representatives (Lauka A.,et al, 2018), as the distance grows and

views become more polarized, the distribution of policy stances or ideological positions shifts from centripetal to centrifugal position (Sartori, 1976) cited in Lauka A., et al, 2018).

Generally, polarized party politics is the ideological relationship that exists among parties and more specifically to the ideological distance between parties and prevailing patterns of political coordination and competition among them and political parties are far removed from one another in ideological terms. Accordingly, political polarization takes a fairly simple form in two-party systems, i.e., the political parties are moving away from one another and taking increasingly distinct ideological positions that are perceived to make compromise difficult (Indridi I., Kam Ch., et, al. 2017).

The History of Party Politics and Party System in Ethiopia

Ethiopia has short history of party politics despite its long history of statehood and state formation both in Africa and in the world. Ethiopia entered the era of party politics only at the eve of the revolutionary upheaval of 1974 that ended the country's monarchical regime. However, the democratic upsurge of 1974 which ended an out-of-date autocracy that used to claim the mandate of heaven and promised a new era of revolution and prosperity quickly ended in a bloody military interlude that decimated the cream of one dynamic generation (Solomon G., 2014, Merara G. 2007) and in Ethiopia party politics could be traced to the emergence of a vibrant **o**pposition to imperial rule since the 1960s pioneered by the Ethiopian Student Movement (ESM), which advocated radical changes in the political landscape and state-society relations (Kassahun B., 2009). Those opposition political forces differed in their orientation, tactics, and strategies whereas some of these were organized o non-ethnic basis like the Ethiopian Peoples' Revolutionary Party (EPRP) and the All-Ethiopian Socialist Movement (*meisone*), others such as the Tigray People's Liberation Front (TPLF), the Oromo Liberation Front (OLF), and the Ogaden National Liberation Movement (ONLF), among others, espoused ethno-nationalist aspirations that were centrifugal in nature (Ibid).

After the coming to power of the EPRDF in 1991 a number of ethnic-based political parties mushroomed in Ethiopia. The EPRDF, as an ethnic-based party coalition, encouraged the formation of political parties along ethnic lines and tacitly discouraged non-ethnic parties or other pan- Ethiopian parties (Wondwosen T., 2009).

The change of regime in 1991 and the charter that followed it promised yet another era of peace and prosperity by creating a nation state of equals and multi-party democracy (Solomon G., 2014). However, de facto one-party system was defining Ethiopian party politics for last two and half decades and the regime was using carrot and stick as modes of operandi to fragment existing political parties in Ethiopia (Merera G. 2007) and as a result, Ethiopian political parties are characterized by lack of developing credible alternative political programs and clear ideological orientation to influence dominant party system which allows the perpetual existence electoral authoritarianism in Ethiopia (Solomon G. 2014).

The topple of military regime in 1991 heralds the de jure multiparty politics in the political history of the country which followed by flourish of plethora political parties with varying orientation and programme of actions (Kasahun B. 2003) which in turn customize the using election as the sources of legitimacy and political mandate though it remains rhetoric (Ibid)

which resulted from unwillingness of the ruling party (EPRDF) to open political space and give a room for opposition political parties and lack of democratic governance within opposition political parties which prevent opposition political parties to form coalition so as to challenge the ruling party and polarized the relationship existing between and among political parties (Ibid).

Nevertheless, despite rhetoric and theoretical assumption which allows and invite opposition political parties to take part in making democratization process real, de facto one-party system remains the defining feature of Ethiopian party politics since 1991 to date except the 2005 general election where a coalition of opposition won the ruling party in landslide. This was resulted from unwillingness of EPRDF regime to allow other political parties play their part in politics due political culture of the ruling party which founded on revolutionary democracy which is the core doctrine of the party and the structure and organization of the opposition political parties which is de-institutionalization and polarization of opposition political parties (Gudeta, K. and Alemu, K., 2014).

The EPRDF government was also structured and operates based on legacies of armed struggle and imperatives of war to peace struggle (Lyons T., 2019) and the ruling party demonstrated a disciplined, authoritarian, vanguard party organized around the principles of democratic centralism which is top-down decision-making system and keep opposition political parties at distant from democratization process (Ibid).

Since the regime change in 1991 Ethiopia has fitted the description of a hybrid regime. The country has a democratic constitution and a form of multi-party elections normally linked to liberal democracies, but its practices are highly authoritarian and basic human rights are undermined (Aalen L., & Tronvoll K. 2009) and multi-party elections are largely a means to sustain the incumbent regime's own power. Free competition between parties is not allowed and voters have been under severe pressure to vote for the ruling party (Ibid). However, despite the adoption of a multi-party system and liberal economic policies, the ruling party (EPRDF) paradoxically reaffirmed the ideological line rejecting parliamentary democracy and defending democratic centralism based on a vanguard party (Bach, J. N. 2011).

Once again, much of the promise made has become empty and consequently, the country and its people continue to wallow under what seems to be an all-round crisis that has led millions to despair and hopelessness. Despite, the mushrooming of political parties in the country, the freedom of opposition parties to operate had been so circumscribed that none of them even had the slightest chance of competing with the EPRDF (Wondwosen T., 2009).

De Facto Political Reform and Party Politics in Ethiopia

In Ethiopia multiparty system was introduced as fundamental elements of democracy after the topple of military regime by Ethiopian People Revolutionary Democratic Front (EPRDF) which some cited as the victory of ethnic movement over multi-ethnic political force (Merera, 2011 cited in Shimalis H., 2018). Post 1991 witness the mushrooming of different political parties with different program, policies and strategies including the state structure they want to apply if they manage to win the election. With this regards Ethiopian political parties classified into spectrums, pro unitary state structure political parties and pro federalism political forces.

These two groups remain active in Ethiopian political land scape from 1960's to date and led to the perpetual existence of polarization the defining features of party politics in Ethiopia. This has not merely wreaked havoc to Ethiopian democratization process but also aborted the political reforms in the country several times (Shimalis H., 2018).

Liberal democracy is the result of healthy relations between and among political parties as, it creates an environment conducive to effective functioning of parliaments and the deepening of multi-party democracy. Nevertheless, in Ethiopia, interparty relations tend to be marked by mutual suspicion. The political parties view each other antagonistically and as 'blood enemies' rather than as responsible political actors and worthy partners in nation and practice the zero-sum game than positive sum game which holds the democratization process of the country (*Ibid).*

January 2018, the ruling Ethiopian People's Revolutionary Democratic Front (EPRDF) declared that it would pursue reforms in response to intensifying antigovernment protests that began in November 2015. That was followed by selection of Abiy Ahmed as the chairman of EPRDF government who undertook various political and economic reforms in breath taking speed including lifting a draconian state of emergency, releasing political prisoners, revising repressive laws and proclamation such as Anti-terrorism proclamation, civil society law and media proclamation, terminating two decade period of deadlock between Ethiopia and Eritrea, ending government monopolies in key economic sectors, including telecommunications, energy, and air transport, returning the exiled opposition political parties leader and deepening of political space (Yoseph B. and Jon T., 2018).

This in turn amounted to mushrooming over hundreds political parties at different levels political programme, conspiracy, and political intrigues. However, Ethiopian political parties are known by lack of legitimate representation, and alternative political agenda and orientation since introduction party politics to date. Polarization and fraction are also other defining feature of currently flourishing opposition political parties in Ethiopia.

This polarization of political parties contributed to the backsliding of democracy, erosion and decay of the principles of democracy because polarized political parties are used to work on the division of society into different blocks and cleavages and this in turn threaten transition to consolidated and plural democracy (Murat S. and Jennifer M., 2018).

In the same vein the existence of polarized political parties polarization exacerbates division among society as it resulted in the multiplicity of differences in a society increasingly align along a single dimension, cross-cutting differences become reinforcing, and people increasingly perceive and describe politics and society in terms of "us" versus "them" which in turn escalate cross-cutting cleavages, and dividing society and politics into two separate, opposing, and unyielding blocks (Somer, M. and McCoy, J., 2018). Polarized party amounted to unrelated divisions, emasculating cross-cutting cleavages, and dividing society and politics into two separate, opposing, and unyielding blocks (Somer M. and McCoy J. 2018). Polarized political parties use polarization in a conscious effort to unite their own and to weaken their opponents and polarization contributing to democratic backsliding and decay and democratic crisis (Ibid).

Party polarizations pose serious problems to democracy. Polarization contributes to democratic breakdown, economic decline, division of mass based on parties' ideologies due to mass partisanship and corruption (Murat S. and Jennifer M., 2018). Moreover, polarized political parties allow underperforming incumbent to win the election which affects the function of democracy in return by monopolizing the position.

Therefore, polarized political parties is danger for the country aspire to have liberal democracy and make it norm and political framework through which the government run the activities of the state as it encourages social division based on the ideologies of parties. The current status of Ethiopia is also not out of this fact, polarized party politics is threatening Ethiopia's undergoing de facto political reforms since opposition political parties are working on the division and segregation of the society based on their political agenda for their political benefit.

III. Conclusion and Recommendation

Conclusion

For a democracy to function properly, it needs an opposition political party to provide alternative political programme, agendas, and electoral competition. In other words, this is to mean no political parties no democracy. The termination of colonial era in 1960's amounted to birth of quest for liberal democracy in most of African countries. The same holds true for Ethiopia. Popular dissatisfaction with feudal system ignited the youth and mass to create Ethiopian Student Movement (ESM) in 1960 which provides a basis for Ethiopia's journey toward democracy and introduction party politics which amounted to birth of MEISION (Ethiopian Socialist Movement) and Ethiopian People Revolutionary Party (EPRP) in 1968 and 1972 respectively. This was followed by 1974 revolution in which Ethiopian military office joined popular uprising and leaded the revolutionary. However, the democratic upsurge of 1974 which ended an out-of-date autocracy that used to claim the mandate of heaven and promised a new era of revolution and prosperity ended in 1991.

Military regime (Derg) which has been leading revolution from 1975 to 1991 failed to walk its talk especially in terms of answering the identity, self-determination and equality questions and finally ousted by EPRDF which promised people to realize liberal democracy in Ethiopia but failed to dare to walk its talk instead made revolutionary democracy which characterized by democratic centralism modes operandi of states' political activities and government operation. This resulted in popular dissatisfaction and youth resistance against EPRDF regime specially since November 2015 which urged the party to reform itself and committed to move the country toward consolidated democracy through undertaking multi-spectral reforms (political, economic and social) reforms.

Ethiopia is under the state of de facto political transition since April 2, 2018, by undertaking both economic and political reforms including deepening political space by removing terrorism law, revising repressive laws such as civil society proclamation, mass media proclamation and terminating government monopolies on key economic sectors such as telecommunications, energy and air transport to realize plural democracy and consolidated democracy. This amounted to mushrooming number of political parties in Ethiopia.

However, political parties in Ethiopia are characterized by polarization and fraction which amounted to the decay and erosion of democracy, and backsliding of democracy by its nature instead of contributing to transition consolidated and plural democracy. Thus, though much reforms (political and economic) are undergoing in Ethiopia today than ever before, the contribution of political parties in opposition is not visible in making reforms achieve its goal and realizing Ethiopian transition to plural democracy. Thus, bringing political parties with similar political agenda together and creating coalition is the only way of forward to make Ethiopian transition achieve its goals and democracy in Ethiopia. Political parties in opposition in Ethiopia are less institutionalized and un-consolidated which impair Ethiopian transition to consolidated democracy. Polarization is the defining feature of Ethiopian political parties since the introduction of party politics to know which contributed a lot in making Ethiopian transition remain stagnant.

Recommendations

The finding of this study revealed that, institutionalized party systems play a significant role in realizing consolidated democracy in each nation as they provide policy alternatives and political progrmme to incumbent government. Polarized and fractured party system is a threat to nations move towards liberal democracy because it resulted in the division of the society into different blocks and cleavages. Polarization is defining features of Ethiopian political parties since the introduction of party politics to now and made landing democracy in Ethiopia tough. The same is true under current reform undergoing (de facto) in Ethiopia which in turn impair Ethiopia's move toward plural democracy. Thus, if consolidated plural democracy is to be achieved and plural democracy is to be landed in Ethiopia, political parties in opposition in Ethiopia should take in to account the following recommendations.

- ✓ Ethiopian Political parties should be institutionalized so as provide alternative policies and political agenda by walking more than blaming the incumbent government.
- ✓ Political parties with similar political agenda and programme should come together and create a coalition to make Ethiopian transition achieve its goals which is transition to democracy.
- ✓ Political parties in Ethiopia should develop tolerance, compromise political culture and positive sum game which serve as a bridge in consolidating democracy.
- ✓ Political parties in Ethiopia should capitalize the culture of developing alternative policy programme, political agenda, and orientation to challenge incumbent party and keep Ethiopian *de facto transition to democracy on its rail.*

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1.5. Politics of Land Ownership in Ethiopia: Towards Improved Land Rights and Land Tenure System, by Negera Gudeta

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Abstract

Land is central to the lives and livelihoods of people in Ethiopia. It's not merely an economic issue but also tied with people's rights, culture, and identity. This study examines the land rights and land tenure system in Ethiopia under different regimes focusing on questing for improved land rights and land holding system. The study employed qualitative research approach as the research methodology. The finding of this study revealed that, Ethiopia is known by its complex land tenure system and land holding system prior 1974 revolution and communal land tenure system since 1975 land reform to know which threaten land rights of the local community which hampered their development rights in turn. The finding of the study also disclosed albeit EPRDF governments (re-branded prosperity party) have made various economic and political reforms after toppling the military regime, it inherits land policy from its predecessors which failed to make real food security and national development of the country. The finding of this study suggested that Ethiopia should reform its land policy if food security and national development is deemed to be achieved. The government should privatize land tenure system to secure landholding system and land rights. Furthermore, the study also suggested that if economic growth, food security, property rights and natural resources management is aimed to be achieved, the government should reform its land tenure system.

Key words: land rights, land tenure system, Ethiopia

I. Introduction

Land is the fundamental and basic natural resource which can realize human development. It provides the physical space in which all human and non-human family lives, primary means of production used to generate livelihoods and the main assets to accumulate wealth. Throughout the history of mankind, land is considered as a primary source of wealth as well as the foundation for shelter, food, and other economic activities (Semahagn G., 2012). Securing land rights and improving land use is playing a significant role in the agricultural development and improvement of national economy of given country (Dessalegn R. and Taye A. 2006).

Land is multifaceted issues for human family. More than the economic, political, and social worth it have, land is also issue of human rights for human being. In Ethiopia it is also not outside of this fact. Land rights and land holding system remains mainstream political and economic issue in Ethiopia since the formation of modern Ethiopian empire to now due to unsecured land holding system and denial of private ownership of land by successive regimes

and the question of land continues to be a major theme in socio-economic and political discussion till today. In Ethiopia land policy has been one of the controversial issues since the dethrone of the Der'g regime to today (Wibke C. and Korf B., 2008).

The government needs to revisit and reform the land holding system and land rights if rapid economic growth and poverty alleviation are aimed to be achieved. From the time of immemorial to now land have been controlled by elite, government, and religious institutions in Ethiopia. Private land ownership hardly known Ethiopia, the Ethiopian people had been struggling for centuries with the inequitable land holdings system that lead to popular uprising against the feudal system with "land to tiller" slogan and finally amounted to dethrone of feudal system in 1975 (Daniel W., 2009).

Before 1975, land holding was based on a feudal system where land was concentrated in the hands of absentee landlords and the church, tenure rights were highly insecure, and arbitrary evictions took place (USAID, 2004). Following the overthrow of the Imperial system in 1974, Derg (Military Council) transferred ownership of all rural land to the state for the distribution of use rights to cultivators through local peasant associations. But, the further transfer of land rights was highly restricted, because transfer through sales, lease, exchange, or mortgage was prohibited, and inheritance was severely restricted (Ibid).

Though many reforms have been undertaken after the downfall of military regime in 1991, but, nothing was done with regard to land rights and land holding system in Ethiopia. Derg regime land policy on land administration continued with its problems. FDRE constitution enshrines public and communal land ownership and the inalienability of landholdings.

Article 40(3) states "the right to own rural and urban land as well as natural resources belongs only to the state and the people. Land is an inalienable common property of the nations, nationalities and peoples of Ethiopia and shall not be subject to sale or to other means of transfer". Despite, various reforms have been undertaken after the topple of military regime, there is a little move regarding land rights and land ownership, even the FDRE constitution failed to secure farmers property rights regarding land since insecure use rights, complicated registration procedures, legal gaps in the legal system, and compensation being paid to expropriation of the land is very limited (Beyene Ch., 2017; Semahagn G., 2012).

Albeit the communal ownership of the land provides the usufruct for the farmers, it is failed to realize productivity in agriculture, poverty reduction and food security, instead it amounted to the proliferation of large-scale agricultural land acquisition for investment purposes which in turn affects the livelihoods and lives of the local people by displacing them from their homes and home lands which further impoverish the social and economic aspects of their life. Beyond holding down the agricultural productivity of the country communal land ownership infringed the land rights of the local people which in turn hampered their development rights (Ayalneh B., et *al* 2008).

In January 2018, the ruling Ethiopian People's Revolutionary Democratic Front (EPRDF) declared that it would pursue reforms in response to intensifying antigovernment protests that began in November 2015 as a response to Addis Ababa master plan which intended aggravate the land grabbing. That was followed by selection of Abiy Ahmed as the chairman of EPRDF

(re-branded prosperity party) government who undertook various political and economic reforms in breath taking speed including lifting a draconian state of emergency, releasing political prisoners, revising repressive laws and proclamation such as terrorism proclamation, civil society law and media proclamation, terminating two decade period of deadlock between Ethiopia and Eritrea, ending government monopolies in key economic sectors, such as telecommunications, energy, and air transport and sugar corporations (Yoseph B. and Jon T., 2018).

However, nothing was said about land tenure system and land ownership policy which was the historical quest of Ethiopian people, and which lifts down the agricultural development of country almost for centuries in Ethiopia. Although extensive studies were undertaken by different scholars of the area, none of those studies scrutinized the quest for reforming land holding system so re-structure state-society relations and respond historical land rights of Ethiopian people. Therefore, this study is intended to fill this literature gap. Hence, the objective of this study is to pinpoint on the relevance's of improving land policy and land governance which in turn improve the land rights and land holding system in Ethiopia.

II. Methodology

This study is based on qualitative approach. The data was collected from both primary and secondary sources. The secondary data was collected from books, journal articles, and legal documents and published and published materials. To substantiate the data collected from secondary sources, primary data was collected empirical studies on land ownership. Given the data collected from primary and secondary sources are qualitative in its nature, qualitative method of data analysis method was employed in this study.

III. Results and Discussion

Ethiopian Land Tenure System; Appraisal Under Three Regimes

Ethiopia has experienced different land tenure system throughout the history. However, freehold (private land ownership) land tenure system wasn't exercised except in rare case for selected few during the reign of Emperor Haile Selassie. So, this section presents Ethiopian land tenure system under three different regimes namely pre-1974, from 1974-1991 and post 1991 land tenure system.

Pre-1974 period was characterized as a feudal and agrarian land tenure system where a mixture of private, government, church and communal land holdings coexisted. These land tenure systems had various kinds of landholding arrangements. The country's geographical, ethnic and cultural diversity and its historical background were shortlisted among those factors that made Ethiopian land tenure system complex in the world during the then time. Inter alia, *rist*/kinship, communal, *gult*, private, state, and church tenure system were used by during imperial regime (Yigremew A. 2002). The major problems with imperial regime land tenure system are exploitative tenancy, land concentrations, fragmentation of holdings and tenure insecurity which amounted to food insecurity, low agricultural development performance and overall weak economic development progress (Adenew B., et al, 2003).

In a nutshell, the land policy and land tenure system of Ethiopia during imperial regime was one the most complex land holding system of the then time which tenant-landlord relationship was defining traits of land holding system in the country, whereas communal, *rist* system, which was based on ancestral claim and customary law was tenure system of the day in Northern part of the country, *gult*, communal and private ownership was usual holding system in the Southern parts of the country. Other tenure systems such as church ownership (*samon*), state ownership (*mengist*) for agricultural purposes and madeira land granted mainly to government officials, war veterans and patriots in lieu of a pension or salary was also the landholding system of the then time. This has raised resistance against the regime with ‘‘land to tiller’’ slogan by students, farmer and civil servant which finally dethroned the emperor by eruption of revolution in 1974.

The topple of Haile Selassie regime by Derg (Military council) in 1974, has brought dynamism in land governance and nullified tenant-lord relationship in utilization of land and gave the usufruct rights for the landowners though prohibited the mortgage, sale and exchange by other means of land. The reform was designed in terms of distribution of private land to the tiller; prohibitions on transfer-of-use rights by sale, exchange, succession, mortgage, or lease, except upon death and only then to a wife, husband, or children of the deceased (Anteneh T. and D. Grover, 2006).

In 1975, the socialist Derg regime that had overthrown the imperial regime profoundly altered the agrarian structure and the mechanisms of access to land. The “Public Ownership of Rural Land Proclamation” nationalized all rural land and set out to redistribute it to its tillers and to organize farmers in cooperatives, thereby abolishing exploitative landlord-tenant relations so pertinent under the imperial regime (Crewett, W. and Bogale, A., 2008). Under the slogan ‘‘land to the tiller’’ the military regime came to power and nationalized all rural and urban land, allowed the peasants were allowed to hold a maximum of 10 hectares but prohibited land sale, lease, donation, mortgage, and inheritance to non-family member (Ambaye, W., 2012; Gebeyehu, Z. 2013).

After the dethrone of military regime, many international observers expected that in the process of ‘post-socialist transition a move towards privatization and registration of land titles would follow, which was regarded to increase productivity of Ethiopia’s small-holder agriculture. However, these expectations weren’t came to true. Transitional government which installed after dethroning of the military regime became reluctant with regard to reforming the land policy despite its commitment to liberalize economy based on neoliberalism mode of operandi proposed by international financial institutions such as World Bank (WB) and International Monetary Fund (IMF). This made the continuation of the Derg land policy with its problems which holds down agricultural productivity of the country (Crewett, W., and Korf, B. (2008).

Land continued to be considered "public property" where land users are entitled to merely usufruct right, land marketing and permanent land transfers by any means including sale, mortgage and others are prohibited by FDRE constitution.

Article 40 of FDRE constitution stipulated that

The right to ownership of rural land and urban land, as well as of all-natural resources is exclusively vested in the state and the peoples of Ethiopia. Land is a common property of the nations, nationalities, and peoples of Ethiopia.

However, unlike the military regime land reform proclamation, the constitution allows temporary leases as tools of land exchange. It also guarantees the rights of peasants and pastoralists of free access to land and the right of individuals to claim compensation for improvements they made on land, including the right to bequeath and transfer (FDRE Constitution Art. 40(4)). The Proclamation No. 89/1997 Federal Rural Land Administration Proclamation also strengthens the communal holding system of land and prohibited the exchange of land through sale and other means of exchange.

Land is a common property of the Nations, Nationalities and Peoples of Ethiopia shall not be subject to sale or to other means of exchange (Proclamation No. 89/1997 Federal Rural Land Administration Proclamation, Art. 4). Based on the provision of the FDRE constitution, the state council of nine national regional states has promulgated their respective rural land administration and use regulations which are an extension of the provisions of FDRE constitution and Proclamation No. 89/1997 Federal Rural Land Administration Proclamation.

Thus, the land policy of Derg regime continues during EPRDF with its problem despite some changes which allows renting land for fixed period. This rigid land policy not merely affects agricultural productivity of the small-holder farmer but also infringed the socio-economic and political rights of the local community as violating property rights to land violates other numerous human rights such as human right to life, the right to food, the right to housing, the right to property, the right to development, and livelihoods rights in general. This has made land policy of Ethiopia controversial among scholars, political parties, and donors since dethrone of Derg regime to now.

Contending Discourses on The Current Ethiopian Land Tenure System

Since the dethrone of military regime, land policy of Ethiopia remains sticking point and controversial issues among political elite, opposition political party and donors. Public versus private of ownership of land resource became mainstream debate for last three decades. The discourses over land policy where predominantly revolves around private ownership and state ownership of land.

State ownership propagators pointed out that privatization of land facilitate land concentration in the handful wealth people by crowding out poor and impoverishes families out of their land and the state is mandated to protect the displacement of people from their land by wealth people. The government position is to maintain egalitarian principle with regard land rights and believe that, state ownership deemed as the best means to prevent the rural peasantry from the negative effects of market forces (Crewett W. and 2008).

The governments maintain its state ownership position by claiming that, it averts the accumulation and concentration of land in the hands of a small number of urban and bourgeois landowners, who acquire large tracts of land through distress sales by poor peasants and protect from selling or mortgaging their land, thereby safeguarding them from the grabbing hand of few wealth people which amounted political unrest (Ibid).

On the other hand, the propagators of private ownership of the land, pointed out that, privatizing land ownership will further securitize land rights of the local people which in turn hold up the agricultural productivity of the rural households. Furthermore, the privatization of land holding system improves productivity and sustainability of land use and encouraging accumulation of land in the hands economically successful farmers, thereby increasing productivity which in turn amounted to realization of food security and economic development of the nation. Additionally, they positioned themselves as the supporters of private ownership of land as it prevents eviction of the poor farmers out of their land by large scale land acquisition for agricultural investment and limits heavy intervention of the state in the land (Beyene Ch. 2016).

The opponents of communal ownership of land again stated that, state ownership of land is reflection of a centralized and top-down approach, which has not taken into consideration the need of the farmers, local communities, and civil societies. However, the Ethiopian Government argued that free property rights including sale of land could lead to distress migration of the poor to urban area which in turn aggravate the unemployment rate in the country (Zemen H. 2013).

Implications of Reforming Land Rights and Land Holding System

Land rights can be conceptualized differently by different scholars. It is often defined as rights to employ, manage, transfer, alienate or power to acquire the income or rent of the land for once own personal benefits. Especially how land held, used, and exchanged.

Property right to land include right occupy, enjoy, and use; to restrict others from entry or use; to dispose, buy, or inherit; to develop or improve; to cultivate; to sublet; to realize financial benefits; and to access services in association with land. Property rights can also include ideas and designs (copyrights, patents, and intellectual materials), as well as rights over "moveable property," for example, cars, cows, mobile homes, and wildlife (USAID, 2013).

On the other hand, land tenure is defined as the relationship which individuals have with land resources, it defines the ways in which land are allocated, transferred, used, or managed in a particular society. The right to land as a human right is recognized under several binding and non-binding international human rights instruments (Schutter, 2010 as cited in Hussen A. 2018). Tenure systems define who can hold and use resources, for what length of time, and under what conditions and securing land rights mean a lot to human being, as it amounted to enjoyments of other human rights such as right to livelihood, the right to housing, the right to property, and the right to development (Hussen A. 2018).

In secured land ownership and land rights not merely infringed and violate human rights to livelihood, housing and property but also hamper the agricultural productivity and economic development of the nation (Yigremew A. 2002). Securing land rights and land ownership will promote economic growth, food security, and resources management, economic and political development. On the other hand, communal and state ownership of land allows the heavy state intervention in unfair land allocation and without in secured property rights, farmers do not feel emotional attachment to the land they cultivate, do not invest in land development and will not use inputs efficiently (Hussein J.2004: Tenaw, S. & Parviainen, T. 2009).

Furthermore, securing land rights amounted to poverty reduction since it made the rural communities to build more confidence on their property which further motivate them to produce and sale of crops and other products to generate household income (Meinzen R., et al, 2009).

According to USAID report on land tenure and property rights framework (2013).

Effective land tenure systems and securing property rights to land play a central role in supporting balanced and sustainable economic growth, encouraging investment for improved agricultural productivity, limiting conflict and instability, enhancing democratic governance and human rights, and improving natural resources management and biodiversity conservation, including through effective climate change adaptation strategies

Reforming land rights and land holding system has significant impacts in Ethiopia. Among others it reduces the occurrences of land dispute, increase investment flow, improve, the environmental conservation, increase land rental market and increasing productivity of the land and reduces the land related displacement and land grabbing and many others.

Thus, if sustainable development, economic growth, peace and stability, and environmental sustainability are deemed to be achieved, the Ethiopian government should reform its land policy and secure land rights and land holding system of the public in general.

Securing land rights and land tenure system also initiate the farmers to invest in land and potential to increase natural resource management (Securing and improving land rights and land holding system will improve the productivity of land, mitigate land related conflict improve food security and nutrition, land market and eradicate poverty (Befikadu A. et al, 2017). Public and communal ownership of the land made rural householders vulnerable to livelihood shocks and food insecurity and gave more power to the government and political elite to exclusively determine land issues which authorized the government to promote urbanization and private investments at the expense of the poor and vulnerable smallholder (De Zoysa, R. 2013).

This has made the land grabbing and eviction of rural and semi-rural households the custom of the day under the roof of large scale land acquisition for agricultural investment purposes which negatively affected the lives and livelihoods of the community and ignored the property rights of the local communities because though investment holds promise for increasing agricultural productivity, job creation, knowhow and capital, achievement of these outcomes in practice has been mixed and livelihoods of the poor and disadvantaged have sometimes been threatened. In secured land policy amounted to arbitrary expropriations and land grabbing, which induce an economic marginalization of small holder's farmers in the country (Hussen A. 2017) and its obstacle for farmers' interest to conserve the soil and other natural resources which associated with lands.

On the other hand, securing land rights and land holding system amounted to positive results, inter alia eradication of poverty, ending hunger and ensuring food and nutrition security and achieving sustainable development goals including the achievement of peace and security and the reduction of inequalities in terms of land ownership. Furthermore, securing land rights may result in a tendency to enhance economic growth, reduces environmental degradation, and

plays a key role in poverty reduction, and good governance and democratization (Brightman G., 2017) and securing land rights strength property rights of farmers; sustainably conserving and development of natural resources and for rural residents who depend on land for livelihoods and income generation.

Therefore, reforming and improving the land holding system is so important for agrarian societies like Ethiopia to realize food security and agricultural productivity which in turn boosts the national economic development. Reforming land holding system connotes a lot for Ethiopians more than responding historical economic questions of the people it will re-structure the state-society relations.

IV. Conclusion and Recommendation

Conclusion

Land is the fundamental and basic natural resource which can realize human development. It provides the physical space in which all human and non-human family lives, primary means of production used to generate livelihoods and the main assets to accumulate wealth. In a country like Ethiopia where agriculture employs most of the population, land is an important economic resource for the development of rural livelihoods and income generation for households.

This study examines the land rights and land tenure system of in Ethiopia under different regimes and quest for improved land tenure system and land holding system. The finding of this study revealed that Communal and state land ownership not merely holds down agricultural productivity and food security of the country but also infringed people's right to land which in turn violates the right to development. Improving the land holding system could secure land rights which play a significant role not only improving land investment and other natural resource management but also in realizing the food security and agricultural productivity. The study also concluded that, reforming land tenure system limits the heavy state intervention in the land which exacerbates the eviction of the local communities from homelands under the roof of large-scale land acquisition for investment purposes which impoverish the livelihoods of the local community.

This study also disclosed that, reforming land policy and securing the tenure of the land is paramount to improve agricultural performance and food security of the country as securing land rights improve land markets and land investment. Finally, the study concluded that if economic growth, food security, property rights and sustainable natural resources management is aimed to be achieved, the government of Ethiopia should reform its land tenure system and privatize its land policy to make secure the land rights of the local community which in turn boosts the land market and land productivity.

Recommendations

Based on the findings of the study, the following recommendations are forwarded to the government.

- The government of Ethiopia should reform the land holding system to meet the growing land needs due to demographic pressure through land distribution.

- The government should secure land rights and land holding system of the people to encourage rural resident to work and invest on land and realize agricultural development and economic growth.
- If economic growth, food security, property rights and natural resources management is aimed to be achieved, the government should reform its land tenure system and the government should privatize its land policy to make secure the land rights and land tenure of the local community which in turn boosts the land market and land productivity.
- *The government should reform its holding system to respond historical land questions, shift the state-society relations and to limits heavy intervention of the hands of the government in the issues of the land.*

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1.6. Road Safety Measures: Their Effects in Improving Road Traffic Accident in Addis Ababa, by Azeb Solomon

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Abstract

Road traffic crashes now represent the eighth leading cause of death globally. They claim more than 1.35 million lives each year and cause up to 50 million injuries and developing countries take the larger share. Therefore, this study sought to assess the effects of road safety measures in reducing road traffic accidents in Addis Ababa. Cross-sectional descriptive study design was employed for this study and data was collected using structured questionnaire. The study engaged 384 respondents which include 204 pedestrian and 180 drivers. Also, 10 years road traffic accident data from 2010 to 2019 was collected from Addis Ababa police commission crime and traffic accident prevention department. Quantitative data was analyzed using SPSS Version 21+ software, while qualitative data was organized and analyzed thematically. The traffic data analysis result shows that the number of traffic accident in Addis Ababa is increasing for the last 10 years. But, using the standard accident measurement index which considers increase in human as well as vehicle population, the fatal accident/100.000 population of the city for the same year is nearly constant but fatal accident per 10,000 vehicles shows reduction from 2015 to 2019. And it is believed that the reduction in the number of fatalities is associated with road safety measures taken by the city. Based on the result, the study recommended that road safety campaigns should be frequently organized to aware road users about the major and important traffic signs, rules, and regulations and to influence road user behavior. Also, to strengthen traffic enforcement, traffic police should be equipped with the necessary equipment like speed camera and alcohol tester. Since road safety is a multifaceted problem, stakeholders should work together to improve road safety in the city's road.

Keywords: Comprehension, Disobeying, Drinking, Safety, Speeding

I. Introduction

Road transport plays a significant role in the development of the country's economy. It has the lion's share in transporting passengers and goods within the country (90-95%). The sector shows improvement in the road construction and maintenance. I.e., in 19 years from 1997 to 2018 Road network length increased from 26,500km to 121,171km and Road Density from 24.1 to 102.8km/1000sq.km respectively. Vehicle growth is exceeding road expansion index. Its average annual growth is 15% as compared to average road growth of 10% in the country since 2004. There are around 1.2 million vehicles in the country and the share of Addis Ababa is around 52.5% (Abiye, 2020).

Although road transport system is the most important means of transport in developing countries and particularly in Ethiopia, the government and the public are concerned about the safety of the system. Road traffic accident (RTA), defined as "an accident that occurs on a way or street open to public traffic; resulting in one or more persons being killed or injured, and at least one moving vehicle is involved (STEPS, 2015).

According to WHO (2018), annual road traffic deaths have reached 1.35 million. Road traffic accident is now the leading cause of death for children and young adults aged 5-29 years. More than half of global road traffic deaths are amongst pedestrians, cyclists and motorcyclists who are still too often neglected in road traffic system design in many countries. Road traffic accidents cause damage and destroy assets and human capital, increase stress to health facilities, and death of family members and societal and communal settings without strategies to stem the causes (Osoba, 2012). In terms of traffic safety, even though Ethiopia is at a least status of vehicle ownership (density), the fatality per vehicle in other side is among the highest in the world (fatality of 4352 persons/year, which is 26.7 persons per 100,000 population) (WHO, 2018).

Death and injuries resulting from road traffic crashes remain a serious problem globally and current trends suggest that this will continue to be the case in the foreseeable future. Accelerating progress can, however, be achieved through an integrated approach that includes putting in place and enforcing effective measures such as safety standards for roads and vehicles, legislation to mitigate high-risk behaviors such speeding as well as insuring timely access to professional emergency care. Key to this approach is the availability of comprehensive and reliable data on the burden and risk of traffic crashes, injuries, and deaths to target and monitor progress (WHO, 2018).

Ethiopia is facing huge road safety problems. Each year thousands of road users are killed and injured and majority of them are economically active population. According to the estimate of the WHO (2016), the incidence of road traffic fatality in Ethiopia was 26.7 per 100,000 populations and the rate is among the highest in the world. Addis Ababa, the capital city of the country is experiencing an average of 400 fatalities per year and 88% of the fatalities from 2010-2015 were pedestrians (Addis Ababa road safety strategy, 2017). According to (AATPR) 2018, the following were depicted as major causes of road traffic accident: driver's error, pedestrian error, car conditions, road condition, and other. Nearly 74% of the accident was attributable to the driver's error. Addis Ababa which has around 70% of the country's vehicle is a city who carries the majority of the road traffic accident.

Particularly, the situation is very serious in Addis Ababa. When we see the data from traffic police, road traffic accident every year is not showing a significant reduction. For example, the number of fatal accidents, heavy injury, Light injury and property damage in 2013 was 367, 1336, 1263, and 12849 respectively but

after five years in 2018 it becomes 459, 1903, 1074 and 24928 respectively, which shows an increase in the total RTA. At the same time the city transport office in collaboration with different stakeholder is working to improve the road environment and reduce road traffic accident. Measures like speed limit, child restraint, drink-driving, seatbelt, helmet use,

infrastructure design change and many more were undertaken to improve the situation even though the result is not pleasing.

Ministry of transport has approved transport policy of Ethiopia in 2020 to address problems seen in the transport sector of the Country. One of the problems that initiate the ministry to coin the policy is high rate of traffic accident. And to reduce the situation traffic management is considered as a road safety measure which includes addressing issues related to engineering, education, enforcement, and incident management (Ministry of transport, 2020). In the same way, Addis Ababa city administration in collaboration with Addis Ababa transport office prepared a road safety strategy which is being implemented from 2017-2030 (Addis Ababa Road Safety Strategy,2017). The strategy has a target to halve the number of deaths and injuries from road traffic crashes by 2023 and to provide access to safe, affordable, accessible and sustainable transport systems for all by 2030. Also, Addis Ababa transport office is working with different NGO‟s like World Resource Institute, and develops sustainable measures for road safety, like traffic calming measures, mass transport corridors, good footpath and safe crossing and land use transport integration to reduce the need for vehicle travel.

This study is significant as it analyzes traffic data to understand the traffic accident trend of Addis Ababa for the last 10 years. And collect and analyze data from road users (drivers and Pedestrians), to know their adherence to traffic laws and their understanding of different traffic rules and regulations as it is believed by the researcher that knowing the problem is a route to the solution. And to understand the problem, the study sets research questions

- *What does traffic accident in the city looks like?*
- *To what extent do road users comprehend road signs, signals and markings and know traffic rules and regulations?*
- *What are the effects of road safety measures on road traffic accident?*
- *Why RTA in the city does not show improvement?*

II. Methodology

Participants

A total of 380 road users (180 drivers and 204 pedestrians) who were randomly selected had participated in this research work. They were male and female; (126 male and 54 female drivers) and (83 male and 19 female pedestrians) whose age ranged from 18 to 46 years. Also interview is made to Addis Ababa transport officials who are day to day active in the management of the city's transport. Secondary data is also collected from traffic office to understand the actual traffic accident data.

Procedure

The study considers road users in Addis Ababa which includes passengers as well as drivers. There are around 3.4 million trips in Addis Ababa and the total vehicle population in the city is assumed to be around 500,000 (ERA,2016). Size of participants is determined using Kothari formula for population more than 10,000.

After knowing the size of the sample, questionnaire is distributed to respondents randomly by trained data collectors who can assist them if they face difficulty understanding questionnaire.

Interview is made by the researcher using recorder. The collected data is analyzed using SPSS for quantitative data and the recorded interview is transcribed and analyzed thematically.

To ensure validity of instruments, initially the instruments were prepared by the researcher and validated by some experts in the field to ensure that the instrument contains all the aspects of the subject matter. Reliability is improved by writing items clearly, making test instructions easily understood, and training data collectors and making the rules for scoring as explicit as possible. To check reliability, before the distribution of actual questionnaire for collecting reliable data which is important for the study the researcher conducted a pilot test from 20 drivers who are not participate in the final data collection process. Moreover, reliability is tested using Cronbach Alpha coefficient and the result show a coefficient of more than 0.8 for all factors which indicated the reliability of the instrument.

In the study, seat belt use, mobile phone use, drunk driving, speed limit, use of child restraint, adherence and comprehension of traffic sign and signals are considered as independent variables that can influence road safety which is the dependent variable.

III. Literature Review

Risk Factors for Road Traffic Accident

Traffic crash results from a combination of factors related to the components of the system comprising roads, the environment, vehicles, and road users, and the way they interact. Some factors contribute to the occurrence of a collision and are therefore part of crash causation. Other factors aggravate the effects of the collision and thus contribute to trauma severity. Some factors may not appear to be directly related to road traffic injuries. Some causes are immediate, but they may be underpinned by medium-term and long-term structural causes. Identifying the risk factors that contribute to road traffic crashes is important in identifying interventions that can reduce the risks associated with those factors (WHO, 2006). Mobile use, driving under the influence of alcohol, speeding and non-use of seat belt are among risk factors to road traffic accident.

Road Safety Rules and Regulations and Their Effect on Road Traffic Accident

On a study undertaken by Nicole et al., (2018) on eleven developed countries, it is found that the risk of any major injury was significantly lower in belted passengers compared to unbelted passengers (RR 0.47; 95%CI, 0.29 to 0.80; I2 =99.7; P = 0.000). When analyzed by crash types, belt use significantly reduced the risk of any injury (RR 0.35; 95%CI, 0.24 to 0.52). Seatbelt use reduces the risk of facial injuries (RR = 0.56, 95% CI = 0.37 to 0.84), abdominal injuries (RR =0.87; 95% CI = 0.78 to 0.98) and spinal injuries (RR = 0.56, 95% CI = 0.37 to 0.84). However, we found no statistically significant difference in risk of head injuries (RR = 0.49; 95% CI = 0.22 to 1.08), neck injuries (RR = 0.69: 95%CI 0.07 to 6.44), thoracic injuries (RR 0.96, 95%CI, 0.74 to 1.24), upper limb injuries (RR = 1.05, 95%CI 0.83 to 1.34) and lower limb injuries (RR = 0.77, 95%CI 0.58 to 1.04) between belted and non-belted passengers.

Speed has been identified as a key risk factor in road traffic injuries, influencing both the risk of a road crash as well as the severity of the injuries that result from crashes. Distracted driving

is a serious and growing threat to road safety. With more and more people owning mobile phones, and the rapid introduction of new "in-vehicle" communication systems, this problem is likely to escalate globally in the coming years. However, to date there is insufficient evidence on the risks associated with different sources of distraction, and what interventions can be put into place to reduce their impact upon road traffic crashes (WHO,2004).

Road User's Comprehension of Road Safety Signs and Signals

The comprehension of traffic control devices by drivers is very important factor in enhancing maximum safety on the roads (Makinde, 2014). On a study undertaken by Maharaj S.2017, to measure the awareness and Practice of Road Safety Rules among Secondary School Students in Jaipur, the study finding shows that the correlation between awareness and practice score of road safety rules revealed that there was a significant positive correlation ($r = 0.334$, $p<0$ .001) between awareness and practice, which indicates that as awareness level increases practice level also increases.

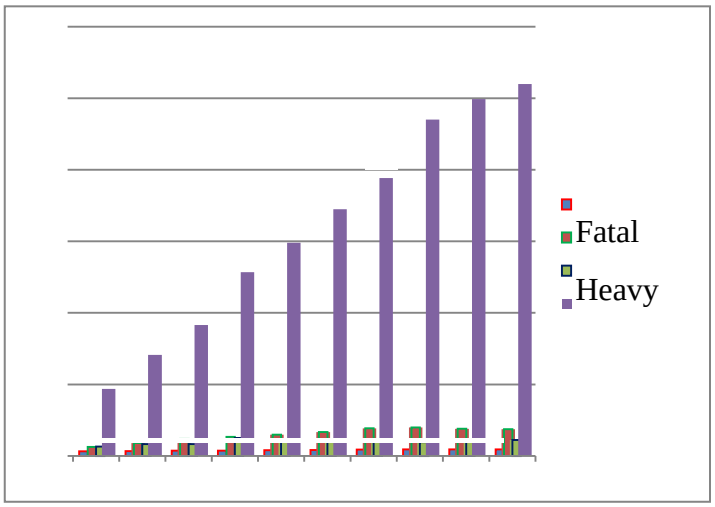
Also, study by Maharaja, 2018, to assess the awareness and practice of road safety rules among secondary school students in Jaipur, Rajasthan, findings of the study showed that majority of secondary school students i.e., 68.7% had average awareness and only 25.3% had good awareness. The same study revealed that the correlation between awareness and practice score of road safety rules was a significant positive correlation ($r = 0.334$, $p<0$ .001) between awareness and practice, which indicates that as awareness level increases practice level also increases.

IV. Results and Discussions

Characteristics of Traffic Accident in Addis Ababa

Traffic Accident by Type

Figure 1: Road Traffic Accident in Addis Ababa



As it can be seen from Figure 4.1 above, in the last 10 years (2010-2019), the number of traffic accident is increasing. In 2010 the number of fatal accidents was 318; it progressively increased each year and in 2019 it reaches 458 which is an increase of 140 deaths. The number of heavy

injury, light injury and property damage is also increasing for the last 10 years. In 2010 it was 626, 652 and 4689 respectively but after 10 years it reaches 1875, 1115 and 2600 which is an increase of 1249, 463 and 21311 correspondingly. There was variability in some years where there was decrease in fatality, heavy injury, and light injury, but the variations are not large. Heavy injury has shown decreasing trend since 2017.

Change in Population and Traffic Accident

Table 1: Fatal Accident per 100,000 Populations

Year	Population	Fatal Accident	Fatal Accident/100,000 Population
2010	3,126,000	318	10.17
2011	3,263,000	332	10.17
2012	3,405,000	369	10.84
2013	3,554,000	367	10.33
2014	3,709,000	391	10.54
2015	3,871,000	416	10.74
2016	4,040,000	439	10.86
2017	4,216,000	463	10.98
2018	4,400,000	459	10.43
2019	4,592,000	458	9.97

As can be seen in table 1 above, in 2010 the population of Addis Ababa was population was 3,126,000 and there were 315 fatal accidents but after 10 years in 2019 the population increases to 4,592,000 and the fatal accident at the same time increases to 458. When we see the raw data, it shows an increase of 140 fatalities; but we have to compare it with an increase of population in that same time using standard accident measurement index. In general, Addis Ababa city population increases by 1.466.000 from 2010 to 2019 and the fatal accident/100.000 population of the city for the same 10 years is nearly constant, but shows a slight reduction in 2019.

Change in Vehicle Population and Fatal Traffic Accident in Addis Ababa

Table 2: Fatal Accident/10,000 Registered Vehicle

Year	Vehicle Population	Fatal Accident	Fatal Accident/10,000 Registered Vehicle
2010	348927	318	9.11
2011	350756	332	9.46
2012	359493	369	10.26
2013	372169	367	9.86
2014	388111	391	10.07
2015	410529	416	10.13
2016	447669	439	9.8
2017	510343	463	9.07
2018	553938	459	8.28
2019	596034	458	8.27

As illustrated in table 2 above, from 2010-2019 the number of vehicles in Addis Ababa increases from 348,927 to 596,034 with addition of 247,107 and in the same time range fatal traffic accident increases by 140. To measure the real increase in the number of fatal traffic accident compared to increase in the number of vehicles in the city, it is important to calculate Fatal Accident/10,000 Registered Vehicle. The computed result in the above table shows that even though there is an increase in the number of vehicles within 10 years, the fatal accident per 10,000 vehicles shows reduction from 2015 to 2019 which can be a result of different measures taken by government and different stakeholders.

Comprehension of Traffic Signs, Signals and Markings by Various Road Users

Drivers Traffic Sign Comprehension

Table 3: Item Wise Traffic Signs Comprehension (Drivers)

No	Sign	Correct		Incorrect	
		Count	Percent	Count	Percent
1	 No right turn	120	66.7	60	33.3
2	 Maximum speed limit	129	71.7	51	28.3
3	 No overtaking	87	48.3	93	51.7
4	 No U turn	34	18.9	146	81.1
5	 Roundabout	62	34.4	118	65.6
6	 Dangerous double bend	141	78.3	39	21.7
7	 RoadHump/Uneven Road	109	60.6	71	39.4
8	 Two Way Traffic	120	66.7	60	33.3
9	 Parking	120	66.7	60	33.3
10	 Give way a head	93	51.7	87	48.3
11	 Pedestrian crossing	105	58.3	75	41.7
12	 Yellow Light Ready to stop or move	141	78.3	39	21.7

As can be seen in table 3 above out of 12 traffic sign test-of-knowledge questions 9 signs and signals; No right turn (66.7%), Maximum speed limit (71.7%), Dangerous double bend (78.3%), Road Hump/Uneven Road (60.6%), Two Way Traffic (66.7%), Parking, (66.7%) Give way a head (51.7%), Ready to stop or move (78.3%) and Pedestrian crossing (58.3%) are understood by more than average respondents. But for the rest 3 signs and signals No overtaking (48.3%), No U turn (18.9%), and Roundabout (28.3%) are understood by small (below average) number of respondents. Generally (58.38%) of the respondents comprehended signs, signals and marking correctly whereas (41.63%) do not comprehended.

Pedestrian Traffic Sign Comprehension

table 4 below illustrates a total of 4 questions were asked for pedestrian respondents and 3 of the signs; Maximum speed limit (64.2), Zebra crossing (61.3%) and Ready to stop or move (75.5%) are understood by majority of the respondents. But 1 traffic sign; pedestrian crossing (14.7%) is comprehended by below average respondents. Generally (53.93%) of the pedestrian respondents comprehended traffic signs, signals and marking correctly whereas (46.07%) do not comprehended.

Table 4: Item Wise Traffic Signs Comprehension (Pedestrian)

No	Sign	Correct		Incorrect	
		Count	Percent	Count	Percent
1	 Maximum speed limit	131	64.2	73	35.8
2	 Zebra crossing	125	61.3	79	38.7
3	 Yellow Light Ready to stop or move	154	75.5	50	24.5
4	 Pedestrian crossing	30	14.7	174	85.3
5	 Pedestrian crossing	30	14.7	174	85.3

Comprehension of Road Safety Rules & Regulations by Various Road Users

Drivers

As sown in table 5 below, among the 180 driver participants 147 (81.7%) recognize that children under 8 years of age are not allowed to sit in front chair whereas the 33 (18.33%) do not. 94 (52.2%) of the respondents understand use of mobile phone while driving is not possible in non-congested areas whereas 86 (47.8%) of the respondents don't. Only two traffic signs; When traffic lights turn Red it means give way for the pedestrian and Zebra crossing are markings obeyed only by pedestrian are found to be least understood by drivers with a percentage below average (15%) and (48.9%) respectively, Overall, drivers have shown average and above average level of understanding of traffic signs (51.1% to 81.7%) on rest of the questions.

Table 5 Comprehension of Road Safety Rules and Regulations by Drivers

No.	Item	Correct	%	Incorrect	%
1	Speed limit in central Addis Ababa is set at 30km/hour	98	54.4	82	45.6
2	Drivers should use hand signals and blinkers while taking turns	135	75	45	25
3	Driversshould give way/wait for the pedestrians while crossing the zebra line	118	65.6	62	34.4
4	Use of mobile phone while driving is not possible	85	47.2	95	52.8
5	The maximum allowed alcohol level for drivers is 0.08g/dl.	92	51.1	88	48.9
6	Seat belt is used by person who seat at front to reduce serious injuries	141	78.3	39	21.7
7	When traffic lights turn Red it means give way for the pedestrian	27	15	153	85
8	Zebra crossing are markings obeyed by pedestrian and drivers	88	48.9	92	51.1
9	Seat belt should be used always while driving	95	52.8	85	47.2
10	Children under 8years of age are not allowed to seat in front chair	147	81.7	33	18.3

Pedestrians

As illustrated in table 6 below, out of these four questions, pedestrian crossing signs are only found near schools is understood by most (95.1%) respondents followed by zebra crossing are markings obeyed only by drivers (79.9%), foot bridge is specifically designed for passengers road safety purposes (75.5%) and when crossing a road, pedestrian should use zebra crossing points (72.1%). When traffic lights turn green, it means give way for the pedestrian (15.7%) is among the least comprehended rules and regulations. Out of 204 pedestrian respondents, 55.54% respondents comprehended the traffic rules and regulations correctly whereas the rest 45.54% do not.

Table 6: Comprehension of Road Safety Rules and Regulations by Pedestrian

No.	Item	Correct	%	Incorrect	%
1	Pedestrian crossing signs are only found near schools	194	95.1	10	4.9
2	Use of mobile phone while crossing a road is possible	89	43.6	115	56.4
3	When traffic lights turn green, it means give way for the pedestrian	32	15.7	172	84.3
4	Foot bridge is specifically designed for Passengers' road safety purposes	154	75.5	50	24.5

5	Zebra crossing are markings obeyed only by drivers	163	79.9	41	20.1
6	When crossing a road, Pedestrian should use zebra crossing points	147	72.1	57	27.9
7	Pedestrian always must obey traffic lights	86	42.2	118	57.8
8	Pedestrian must cross the road when vehicles are at a safe distance.	123	60.3	81	39.7
9	Pedestrian should always walk at the opposite direction of the traffic flow	57	27.9	147	72.1
10	While crossing the road, passengers should always avoid talking/reading	56	27.5	148	72.5

Causes of Road Traffic Accident

Drunk Driving

There is very limited registered death caused by drink driving for the last 8 years (2010-1017); 3 deaths in 2018. Considering heavy injury, light injury and property damage which is caused by driving under the influence of alcohol, the data shows fluctuation. In some of the years it increases and then decrease again and vice versa. But property damage in 2011 (750), 2012 (451), 2014 (608) and 2018 (170) shows very high increase. In general, the above table 4.11 depicts that even though there are fluctuations in the number of registered accident due to drink driving for the last 9 years, the absolute number of accident is not reduced in all four types of traffic accident.

Over Speeding

The number of deaths caused by over speeding increases from 2010- 2018; it was 1 death in 2010 but it reaches 70 deaths in 2018. In the same manner, even though there are fluctuations, it can be clearly seen in the above table that the number of light injuries, heavy injury and property damage has increased in the same time range; (from 2 in 2010 to 139 in 2018), (from 5 in 2010 to 112 in 2018) and (from 57 in 2010 to 2420 in 2018) consecutively. Subsequently it can be concluded that over speeding is the second major cause of traffic accident in Addis Ababa and for the last 9 years (2010-2018), traffic accident caused by over speeding shows tremendous increase a total of increase from 65 to 2741.

Not Obeying Traffic Signs, Signals and Regulations

Disobedience of traffic signs, signals and regulations is the main reason for traffic accident from 2010-2018. The number of deaths increases slightly except a drop in 2011 (207) and very high increase in 2012 (319). But it drops by more than half in 2018 (156). Heavy injury, light injury and property damage caused by disobedience of Traffic signs, signals and regulations has the highest share of traffic accident and it also shows increase from 2010 to 2018. Heavy injury and

property damage has shown a slight decrease in 2018. Generally, traffic accident caused by disobeying traffic rules and regulations is the major cause of traffic accident in Addis Ababa and shows tremendous increase in the last 9 years, from a total of (2466) traffic accidents in 2010 to (9908) in 2018.

Reasons for weak improvement in the City's RTA

Most of the vehicles operating on the road are old as there is lack of maintenance and most of the imported vehicles are used vehicles. The annual vehicle inspection is done only once in a year. And at that time of inspection, owners who have old cars will borrow some parts of the vehicle which have problem from friend's car and fix the problem when they go for inspection and then they will return the part back. And when those cars having parts which are not functioning well are used on the city roads, probability of being involved in car accident increases.

Poor quality drivers training, and corruption exists in the city. In some cases, drivers obtain their license without attending the proper training programs. Also, the existing speed control is very weak and limited to some parts of the city and due to these drivers tend to drive above the assigned speed limit.

The road construction quality and maintenance is weak in most parts of the city for example newly constructed roads do not have quality pedestrian walkway and pedestrians are forced to enter to the main road that make them vulnerable for traffic accident. Moreover, pedestrian crossings are positioned at longer distance in major roads like ring road and LRT (light rail transit) lines and pedestrians will violate the rule to get short cut to crossings. Implementation of traffic rules and regulations by traffic police is limited to the city centre and disobedience of drivers to traffic rules and regulation in the absence of traffic police is visible.

V. Conclusion and Recommendations

Conclusion

For the last 10 years (from 2010 to 2019), generally, road traffic accident is increasing in Addis Ababa. But when the number of traffic fatality is compared with the increase in human as well as vehicle within the same year using standard indexes (fatal accident/100,000population) is nearly constant and (fatal accident/10,000 vehicle) shows slight reduction. The result is the same with the report of WHO (2018) which states that the numbers of road traffic deaths continue to climb reaching a high of 1.35 million in 2016. However, the rate of death relative to the size of the world population has stabilized and declined relative to the number of motor vehicles in recent years. Despite the increase in absolute numbers, the rate of road traffic deaths has remained constant around 18 deaths per 100,000 populations over the last 15 years.

Majority of the road users (58.38% drivers) and (53.93% pedestrians) understand road traffic signs, signals and marking correctly. This result is similar with the result of Ramya (2017) which concludes that majority of the study participants (99.2%) were aware of traffic signal rules. But in

this study, the percentage of respondents who understand road traffic signs, signals and marking correctly is smaller than the study result of Ramya (2017).

Traffic accident caused by disobedience of traffic rule and regulations has increased in the study period and the effect of the introduced traffic safety rules and regulations in reducing traffic accident is recognizable as it curbs the increase in traffic accident and makes it almost constant. The fatal accident/100.000 population of the city for the study period is nearly constant but shows a slight reduction in 2019. Also, the fatal accident/10,000 vehicle shows slight reduction and is similar with the result of Abegaz et al. (2014, p.4) that the study found there is a statistical significant reduction in non- injury crashes and fatalities after the implementation of the improved road safety regulation in the Oromia regional state.

Traffic accident caused by disobeying traffic rules and regulations is the major cause of traffic accident in Addis Ababa and shows tremendous increase in the last 9 years, from a total of (2466) traffic accidents in 2010 to (9908) in 2018. And over speeding is the second major cause of traffic accident in Addis Ababa and for the last 9 years (2010-2018), traffic accident caused by over speeding shows tremendous increase a total of increase from 65 to 2741.

This study tries to examine only particular part of the RTA, which is contribution of safety measures in improving road traffic safety. Moreover, the study identifies the major causes of traffic accident in the city and the reasons why traffic safety is not improving as expected. Multiple causation theory explains that for single accident there may be many contributory factors (ILO, 2012). Also as explained by (Haddon, 1972) transportation is a system and needs comprehensive treatment to the whole system and once multiple factors associated with a crash are identified and analyzed, countermeasures can be developed. Similarly, (Underwood & Waterson, 2013) clarifies that understanding accidents and defining the appropriate measures require the study of the system, rather than considering its parts in isolation. In this respect, the researcher suggests further research on pre-crash, crash and post-crash responses to road traffic accident, traffic law awareness creation to road users.

Finally, the findings indicate that to promote and enhance road safety in Addis Ababa, traffic laws should be more strictly enforced and continuous traffic education should be provided for all road users. Besides, traffic polices should be provided with the necessary equipment and materials that can strengthen their control of traffic law enforcement.

Findings from the present study would help Addis Ababa transport office and traffic authorities in better understanding causes of traffic accident in the city as well as identify areas where traffic enforcement should be strengthened. Moreover, it can indicate the need to continually educate all road users the existing as well as newly introduced traffic rules and regulations.

In terms of future research, the researcher suggests research on pre-crash, crash and post-crash responses to road traffic accident, traffic law awareness creation to road users as well as analysis of road infrastructures to investigate their quality to bring safety on the city roads.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made:

- Refresher traffic safety education and testing should be given for drivers.
- Road safety campaigns should be frequently organized to aware road users about the major and important traffic signs, rules and regulations and to influence road user behavior as well as to show the bad part of road traffic accident.
- Pedestrian facilities/sidewalks should be provided to old as well as new roads.
- Traffic police control should be supported through provision of the necessary speed camera and alcohol tester.
- Pedestrians should be separated from vehicles on high-speed roads, in front of schools, bus stops, parks and commercial areas.
- Speed cameras should be placed on the accident-prone roads to make driving safer as drivers tend to be conscious on roads with camera.

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2. ECONOMY & DEVELOPMENT

2.1. Comparative Assessment of Effects of Urban Productive Safety-Net Program on Livelihood of Poor People in Addis Ababa, Ethiopia, by Kassa Moges

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Abstract

Ethiopia started urban productive safety-net program since 2017 to reduce poverty and income inequality in urban. This research aimed at reviewing economic effects and progress of urban safety-net on income and livelihood of poor people. It investigated whether effects are more significant or not compared to scenario of before program, non-beneficiaries and women using mixed research and comparative approach. About 560 sample of program beneficiary and non-beneficiary households were selected through a multi-stage sampling for household survey and primary data collection through questionnaires. Quantitative data were analysed using paired & unpaired samples T-test, regression, and thematic analysis for qualitative data. Findings showed that this program showed acceptable coverage of the poor, women and wide-ranging effects like better income, savings, expenditures, and seed money. Because of cash transfers current income of beneficiary people become significantly larger. In post-financial transfer household expenditure and savings become better including women. Evidence also revealed that this urban safety-net is satisfactory in its effects towards income and livelihood improvement of the poor. However, delays and reducing size of cash transfers and weak intervention are program limitations. In conclusion, the public works sub-program represents key components of the overall productive safety net program that make significant contributions and progress towards income and livelihood enhancement objectives. Policy considerations are proposed to scale up the program, improve size and predictability of transfers and conduct regular business training and supervision.

Keywords: Urban SafetyNet, Comparative analysis, Performance indicators, Household Income and Livelihood enhancement

I. Introduction

These days poverty rates in the world and developing countries are higher mainly urban poverty rates are quite high in large cities. Like many countries of the developing world, in Ethiopia urban-rural poverty rate differential is low in comparison to other countries. The total national poverty headcount in 2011 was 29.6% (30.4% in rural Ethiopia and 25.7% in urban areas). The poverty gap index is estimated to be 8 percent in rural and 6.9 percent in urban Ethiopia (World Bank [WB], 2015).

Poverty, food insecurity and income inequality have remained a major global issue in the post-Millennium Development Goals era. Ending these problems has continued to receive more attention for its extraordinary contribution to the progress of Sustainable Development Goal (SDG) targets (Haddad et al., 2015 and Welteji, Mohammed, & Hussein, 2017). This remains true in Ethiopia, where poverty, food security, and low income mainly among women remain a central problem. About 27% of women of reproductive age are chronically malnourished (CSA & ICF International, 2011 and Devereux et al. 2014).

In Addis Ababa city poverty rate was as high as 28.1%. From 2005 to 2011, consumption growth was negative for the poorest 15 percent of the urban population. For majority of households in Addis Ababa wages did not increase to compensate households for the rising food prices. In large cities like Addis Ababa, poverty has been falling, but not as fast as in rural areas and smaller urban centers. One-fifth of Ethiopia's urban population lives in Addis Ababa and reducing poverty rates in this city is a key priority (WB, 2015 and 2018).

To alleviate this problem, the Government of Ethiopia developed the Urban Food Security Strategy (UFSS) in 2015 through safety net programs. The objective of the strategy is to alleviate urban food insecurity and tackle the increasing levels of vulnerability, inequalities, and poverty. This is expected to be achieved over a long-term period through a gradual roll-out plan in different phases starting with big cities that have a population of over 100,000 people (Productive Safety Net Program [PSNP], 2014). In Ethiopia, productive safety net programs are started a long time ago and achieved these goals mainly in rural parts (Camilla, Alemu and Jesper, 2011). However, such programs are relatively new for urban areas and have been implemented recently in 2017 (PSNP, 2014 & Shigute et al., 2017). In this regard, Ethiopia's PSNP has a critical role in advancing toward improved food & nutrition security and livelihood mentioned under SDG-1 mainly for vulnerable communities such as women, elderly, and people with disabilities, and children (Burchi and Strupat, 2016 & FAO, 2017). Urban Safety Net Program which is the first of its kind in urban areas is a five-year phase by phase Government program targeting 11 major cities in Ethiopia. This Program Implementation Manual (PIM) has benefited from the country experience in delivering rural productive safety net over the last 10 years. It is designed to facilitate the implementation and management of the program and to provide guidelines and operating procedures that will assist the key implementing institutions mainly the Ministry of Urban Development and Housing (MoUDH), Urban Job Creation and Food Security Agency (UJFSA), the Ministry of Labor and Social Affairs and other relevant agencies, regional and city administrations and municipalities (Gilligan, Hoddinott and Taffesse, 2008).

Urban safety net program is being implemented in several developing countries including Ethiopia to benefit individuals and households who are food insecure, unable to work, or experience a temporary decline in purchasing power by providing them with income. Such programs include cash transfer programs, subsidies, and labor-intensive public works (MoA, 2014, WB, 2015 and GoE, 2016). Urban safety-net program is started with intentions to enable poor households to generate seed money to open business or involve in small enterprises. It is significant

to examine whether productive safety-net enhances income and livelihood of program beneficiaries, particularly urban poor, and women. Evaluation of effects of urban productive safety-net program is done through comparative approaches using economic parameters. This study evaluated the effects and progress of urban safety-net programs on income and livelihood of poor in the city of Addis Ababa, Ethiopia.

II. Methodology

Research Setting

It was important to identify the site where the research work could be undertaken, and this study area was selected to obtain knowledge about the effects of urban productive safety net program in their naturally occurring states. By considering data availability, PSNP mainly the financial transfers provided by the public works sub-program which started operation since 2017 in Addis Ababa city, capital of Ethiopia, seemed to be an ideal site for this research.

2.2 Comparative Approach

It is hard to evaluate the socio-economic effects and roles of urban safety net program. Economic impacts can be best evaluated through quantification, assignment of values to outcome variables, calculation, and comparative approaches. The effects and roles financial transfers of public works sub-program were compared with a scenario that would have existed had this project not been undertaken. To this end, temporal comparison techniques were applied using pre and post-transfer scenarios (i.e. before and after 2017) and Multi-criteria Evaluation (MCE) such as monthly income, saving practice, seed money, and consumption or expenditure capacities such as housing and food expenditure capacity.

Besides, a comparison between program beneficiary Vs. non-beneficiary households and women Vs. men beneficiaries was done on program performance indicators. The methodology of this study properly considers a large amount of uncertainty and subjective judgments which are commonly included in such an evaluation approach through expert consultation and some modifications. The coverage of poor, beneficiary incidence and benefit incidence is compared among income quintile groups. Generally, this comparative approach could help to adequately determine and compare safety net program performance and its impacts and progress towards the enhancement of income and livelihood of poor households.

2.3 Sample Size Determination, Selection and Data Types

Through multi-stage sampling and stratified proportional sampling technique a city of Addis Ababa which accounts about 2/3 of urban safety-net beneficiaries is purposefully chosen from about 11 cities. From 10 sub-cities of this city Yeka and Bole sub-cities as well as 4 ‘weredas’ from each sub-city are randomly selected. Accordingly, an adjusted sample size of 324 households (HHs) were selected from a study population of about 2045 beneficiary households of Yeka sub-city using a 95% confidence level and formula provided by Anthony, (2014). Thus, proportional quotas of households from 4 *weredas* were randomly selected. The households from Bole sub-city

(equivalently poor but not included in the program) were used for the purpose of comparison with program beneficiaries. Due to lack of sampling frame, the author decided to select the same 280 poor households through quota and snowball sampling techniques from randomly selected 4 *weredas* of Bole sub-city. Finally, a total of 560 household surveys and 28 key informants were conducted for pertinent primary data. For analysis a data with 97.8 percent response rate and secondary data were used through careful document review of various sources.

2.4 Data Analysis Methods

Data were quantitatively analyzed using inferential statistical tools and descriptive statistics such as mean, median, and variance as well as qualitative analysis tools. Paired sample T-test was used to analyze mean differences before-and-after PSNP financial transfer observations on the same subjects i.e., program beneficiaries. Independent-samples t-test was employed to compare the mean difference between PSNP beneficiaries and non-beneficiaries as well as women beneficiaries versus men. Linear regression was employed to assess the existence of a significant relationship and predict the effect of PSNP financial transfer as predictor variable on the selected economic and social benefits as outcome variable mainly monthly income of beneficiaries. Accordingly, this model could estimate the amount of percentage of variance or change on the monthly income of beneficiaries that is explained or predicted by monthly financial transfer. These could help to measure the real effects and progress of financial transfers of PSNP. Besides, thematic analysis was used to answer research questions related to coverage, effects, and constraints of the program using qualitative data.

III. Results and Discussions

The findings concerning the effects and progress of particularly financial transfers provided by public works sub-program towards income and livelihood enhancement are presented as follows:

Significance of PSNP Effects in Post-PSNP Transfer Compared to Pre-PSNP Period

Monthly Income of Beneficiary Households Before and After PSNP Cash Transfer

Table 1: Income of Beneficiaries Before Vs. After PSNP Cash Transfer (in ETB): Paired Samples T-Test

	Paired Differences				t	df	Sig.
	Mean	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
Average monthly income before PSNP cash transfer - Average monthly income after PSNP cash transfer	-983.33	26.68	-1035.85	-930.80	-36.85	269	.000

Source: Computed using survey data (2020)

To measure the real effects and progress of the program considering the basic outcome variables such as monthly household income, current income status of beneficiary households (i.e. in post-financial transfer period) was compared to the pre-financial transfer scenario. In Table 1, a Paired Samples T-Test indicates the mean difference between the monthly income of beneficiary households before and after PSNP cash transfer has statistical significance. The Null hypothesis (H_o) which says monthly income of program beneficiaries before and after PSNP cash transfer are equal, is not accepted at p<.001. On average, participants showed that mean monthly income before PSNP cash transfer (m=702.04 ETB) is lower than mean monthly income after PSNP cash transfer (m=1685.37 ETB) by about 983.33 ETB, t=-36.85, p<.001, two-tailed. It is imperative to bear in mind that monthly income throughout this survey refers to the overall income of households from various direct and indirect sources including the financial transfer in return for public works and other additional income.

Monthly Income of Households Participating Vs. Not participating in PSNP

Table 2: Income of Households Participating Vs. Not participating in PSNP: Independent Samples T-Test

Levene's Test for Equality of Variances				t-test for Equality of Means				
							95% Confidence Interval of the Difference	
		F	Sig.	t	Sig.	Mean Difference	Lower	Upper
The monthly average income of respondents in ETB	Equal variances assumed	102.2	.000	30.7	.000	1089.5	1019	1159
	Equal variances not assumed			30.8	.000	1089.5	1020	1158

Source: Computed using survey data (2020)

In Table 2, Independent Samples T-Test indicate the Ho which says average monthly incomes of both households participating and not participating in PSNP is equal, is rejected at p<.001. The mean difference between the monthly income of households participating and not participating in PSNP is statistically significant. On average, participants showed that mean monthly income of program beneficiaries in PSNP (m=1690.25 ETB) higher than mean monthly income of non-beneficiaries (m=600.74 ETB) by about 1089.5ETB, t= 30.8, p<.001, two-tailed.

How Does Cash Transfer Affect and Predict Income of HHs Participating in PSNP

As indicated in Table 3 linear regression was calculated to predict monthly income of program beneficiaries based on monthly financial transfer in ETB, b=1.57, F (336.68), t=18.34, P<0.001. The Ho which says the coefficient is equal to zero as well as the monthly financial transfer has no relationship and no effect on the monthly income of program beneficiaries is rejected.

Table 3: How Does Financial Transfer Affect and Predict Income of Households: Linear regression model

Coefficients[a]

Model		Unstandardized Coefficients		t	Sig.	95.0 % Confidence Interval for B	
		B	Std. Error			Lower Bound	Upper Bound
1	(Constant)	519.52	66.68	7.79	.000	388.22	650.82
	Cash transfer (in ETB)	1.57	.08	18.34	.000	1.41	1.74

a. Dependent Variable: Monthly average income of respondents (in ETB)

Source: Computed using survey data, (2020)

Thus, a significant regression equation was found F (336.68), t= 18.34, P <0.001, with an R^2 of .558. From the Pearson correlation model, it is found that monthly financial transfer is positively and strongly correlated with monthly income, R=.74, and P<0.001. Besides, a model summary shows that 55.8% of the variance or change on monthly income is explained or predicted by monthly financial transfer. According to the interviews made with key informants on the effects and contribution of this safety net program, one major reason for its recognition is safety net program mainly public works sub-program directly tackle a shortage of income and vulnerability. Subsequently, the effects and benefits of this program are immediate and evaluated as positive and indirectly, by addressing income inequalities and making economic growth more inclusive among the poor.

Monthly Housing Cost of Beneficiaries Before & After Taking part in PSNP

Table 4 Monthly Housing Cost of Beneficiaries before and after Participating in PSNP

Dependent Samples T-Test

	Paired Differences				t	df	Sig.
	Mean	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
Average housing cost before participating in PSNP - Average housing cost after participating in PSNP (in ETB)	-194.1	6.29	-206.56	-181.78	30.86	265	.000

Source: Computed using survey data (2020)

A Paired Samples T-Test in Table 4 indicates that the mean difference between the monthly housing cost of beneficiaries before and after participating in PSNP has statistical significance. Null hypothesis (H_o) which says affordable housing cost of program beneficiaries before and after PSNP benefit are equal, is not accepted at p<.001. On average, participants showed that the mean monthly affordable housing cost before PSNP benefit (m=273.87 ETB) is lower than the mean monthly affordable housing cost after PSNP benefit (m=468.05 ETB) by about 194.17 ETB, t= 30.86, p<.001, two-tailed.

Level Of Purchasing Power Of Households Participating In PSNP Vs. Households Not Participating In PSNP For Housing Cost

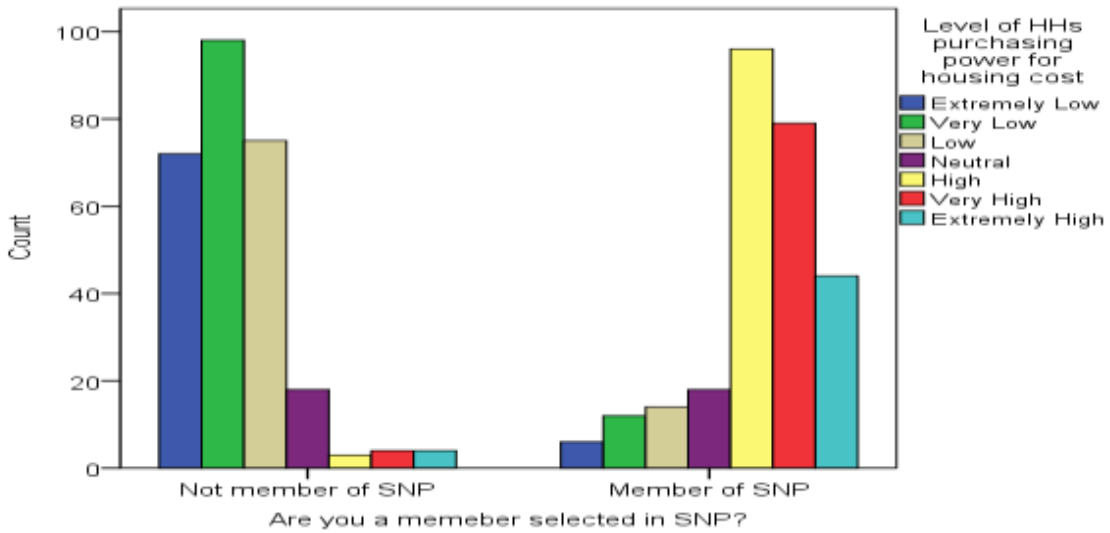

Figure 1. Level of the purchasing power of households participating in PSNP Vs. households not participating in PSNP for housing cost

Source: Computed using survey data, (2020)

As indicated by Figure 1 the housing purchasing power of households participating in PSNP is greater than the housing purchasing power of households who are not participating in PSNP. The housing purchasing power of 35.7, 29.4, 16.4, 6.7, 5.2, 4.5, and 2.2 percent of 269 households who are members of PSNP is High, Very High, Extremely High, Neutral, Low, Very Low and Extremely Low respectively. On the other hand, the housing purchasing power of 35.8, 27.4, 26.3, 6.6, 1.5, 1.5, and 1.1 percent of 274 households who are not members of PSNP is Very Low, Low, Extremely Low, Neutral, Very High, Extremely High, and High respectively.

Significance of PSNP to Women Beneficiaries Compared to Their Counterparts

The significance of effects particularly to women households is analyzed compared to men. Effects of the program on gender-related results and how outcomes differed according to the gender of program beneficiaries are analayzed as follows:

Proportion of Cash Transfer Going to Female Beneficiaries Compared to Male

Table 5 The proportion of Cash Transfer Received by Female Vs. Male Program beneficiaries: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	Sig.	Mean Difference	Lower	Upper
How much cash transfer received per month (in ETB)?	Equal variances assumed	.026	.872	1.92	.056	55.03	-1.38	111.4
	Equal variances not assumed			1.92	.055	55.03	-1.18	111.2

Source: Computed using survey data, (2020)

In Table 5, Independent Samples T-Test indicates that the null hypothesis which says average monthly cash transfer going to both female and male households participating in PSNP is equal is not rejected at $p<.056$. The mean difference between monthly cash transfer going to female and male households participating in PSNP is not statistically significant. On average, participants showed that the mean monthly cash transfer received by female and male program beneficiaries is 767.75 and 712.72 ETB respectively.

The mean monthly cash transfer difference between women and men program beneficiaries is only 55 ETB, t= 1.92, p<.056, two-tailed. As one key dimension of gender-based analysis is whether cash transfers are targeted to women or men, and is there a significant difference between the main recipients? Thus, it is found that women program beneficiaries are receiving a good amount of cash transfer or benefit as men beneficiaries per month.

Monthly Income of Female Beneficiaries Compared to Male Beneficiaries

Table 6: Monthly Income of Female beneficiaries Vs. Male beneficiaries: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	Sig.	Mean Difference	Lower	Upper
Monthly income of respondents in ETB	Equal variances assumed	7.68	.006	2.08	.038	125.22	6.93	243.52
	Equal variances not assumed			2.12	.035	125.22	9.08	241.36

Source: Computed using survey data, (2020)

In Table 6, Independent Samples T-Test indicates that the null hypothesis which says the average monthly income of both female and male households participating in PSNP is equal is rejected at p<.035. The mean difference between the monthly income of female and male households participating in PSNP is statistically significant. On average, participants showed that the mean monthly income of female and male beneficiaries is 1760.48 and 1635.26 ETB respectively. The mean monthly income difference between women and men program beneficiaries is 125 ETB, t= 2.08, p<.035, two-tailed. Thus, it is found that in the post-PSNP period monthly income of women program beneficiaries is higher than the income of their men counterparts by about 125 ETB. Here monthly income refers to the overall income of households from various direct & indirect sources including the cash transfer in return for public works and additional income.

Constraints and Challenges of PSNP Implementation

This part is about the factors affecting implementation, contribution, and impacts of safety net program based on key informant interviews.

- *Majority of beneficiaries receive cash transfer and inputs for public works activities such as uniform clothes, shoes, work equipment and safety materials not fully on time*

- *For the majority of households' financial transfer is characterized by reducing trend in its size or value in the last 2-3 years in comparison to the current cost of living, local market, and periods of shock such as novel COVID-19 pandemic impacts.*
- *Lack of supply-side supplementary services and support by concerned bodies*

IV. Discussions

The results about the effects and progress of urban safety net mainly public works sub-program on income and livelihood of urban poor are discussed as follows.

Size of Financial Transfers: Measured by Adequacy of Benefits and Generosity

According to ASPIRE, World Bank (2015), generosity and adequacy of benefit is a quantitative measure of benefit level of a program. Saavedra and Garcia (2012) revealed that more generous transfers were positively and significantly associated with more positive effects. Davis et al. (2002) and Handa et al. (2009) also indicated that a higher level and amount of financial benefit is linked to bigger impacts on expenditure and poverty reduction compared to a smaller level of financial benefits.

Similarly, findings of this study indicate that share of PSNP financial benefits or cash transfer out of the total monthly income of beneficiaries in almost all of the quintile groups is more than 40 percent which is a greater share. More importantly, the share of program financial benefits out of the monthly income of households falling in the first quintile is still larger (with generosity level of about 45.5 percent) in comparison to other quintile groups. Since aggregate generosity level of the program is beyond 42 percent beneficiary households are receiving fairly generous cash transfer benefits relative to their monthly income in the post cash transfer period. This means above 40 percent of the monthly income of beneficiary households in the post cash transfer period is attributed to financial benefits provided by PSNP. Thus, it is possible to conclude that this public work sub-program is progressing towards the provision of more adequate and generous financial benefits. This large-sized and large level financial transfer is significantly playing a larger role in the enhancement of monthly income and seed money even for beneficiary households in the poorest quintile. This in turn may have a significant effect on beneficiaries' overall livelihood or wellbeing including investment and household purchasing capacity directly and indirectly.

On the other hand, Arnold et al. (2011), Saavedra and Garcia (2012) and Sarah (2013) showed that if cash transfer values remain low relative to local prices or market value, it will limit the scope for impacts on a range of outcomes. It is also cited that PSNP in Ethiopia shows a limited impact due to low levels of transfers or financial benefits (Gilligan et al., 2008).

Though financial transfers account for the larger share of a monthly income of beneficiaries, findings of this study also show that the actual amount or levels of financial benefits provided to beneficiaries have smaller value and not equivalent in relative to the increasing trend of cost of living and local prices. Beneficiaries are even not made aware of the reducing nature and trend of financial benefits from year to year. There are still no adjustments and arrangements for increasing payments in the last 2-3 years. The smaller size and value of cash transfer may negatively affect

and limit the scope for impacts on a range of outcomes. Since generosity is the indicator that more significantly helps to make sure that safety net programs assist in reducing the shortage of income and poverty by providing adequate support to beneficiaries; greater attention still needs to be given to increase the level, size, and share of monthly cash transfer support going to beneficiaries.

The Significance of PSNP Effects in Post-PSNP Transfer Period in Comparison to Situation in Pre-PSNP period

Monthly Income of Program Beneficiary HHs in post-PSNP Cash Transfer period relative to both Pre-PSNP Transfer period and Non-beneficiary Households

Bourguignon et al. (2004) and Arnold et al. (2011) indicated that by improving income of households in the short term and human capabilities in the long term, financial assistance given by public work sub-program to poor households may increase the affordability of food, health care, or education. Blattman et al. (2013) and Green et al. (2015) also found that significant increases in expenditure for both male and female recipients, in comparison to non-recipients.

To measure the real effects and progress of the program by this survey one of the basic outcome variables i.e. current monthly household income of program beneficiaries was compared with their income before the start of the program and against income of non-beneficiary households. Likely, this study found that the monthly income of beneficiary households in the post cash transfer period has increased by about 983.33 ETB compared to monthly income in the pre cash transfer period mainly because of the financial support provided by the public works sub-program. This means financial assistance provided by the program could make a change of about 140 percent increase on the monthly income of beneficiary households before they are selected for public works sub-program.

Besides, pieces of evidence also showed that there is a significantly different impact across program beneficiary and non-beneficiary households for impacts on household income. Overall current monthly income was substantially higher for those program beneficiaries receiving a financial transfer compared to the monthly income of poor households not participating in the program. This means the current monthly salary of those poor households who are not participating in the program is far lower; because they are not selected by the program to receive a financial benefit. By considering an equivalent poverty level between both groups of households, it is found that monthly income difference of about 1089.5 ETB or more than 100 percent is because of the monthly financial benefits going to poor households participating in the safety net program. This evidence generally reveals that the largest share in the increase of income of program beneficiary households in the last 2-3 years is linked and attributed to financial benefits provided by the public works sub-program. This financial assistance going to poor households is making a significant change in the improvement of monthly income. Thus, it is easy to understand that as planned this public work sub-program is showing positive progress and effects on the income of the poor by significantly increasing the size of monthly income. The enhancement of household income in turn has its implication and contribution to better household expenditure, seed money, and livelihood.

How Does Cash Transfer Affect and Predict Income of Beneficiary Households

Gilligan and Sarah (2013) confirmed that financial benefits provided to poor households and individuals have wide-ranging outcomes such as better income, savings, and expenditure. Additionally, Bourguignon et al. (2004) and Arnold et al. (2011) indicated that financial assistance going to poor households from public work sub-program may increase the affordability of food, health, or education by enhancing their monthly income in the short term and human capabilities in the long term.

Correspondingly, based on pieces of evidence obtained from linear regression analysis of this study one can know that monthly cash transfer is a good predictor variable for monthly income. This is because; the regression coefficient shows that for every additional one ETB in financial transfer, income is expected to increase by 1.57 ETB on average. If the monthly financial transfer is zero, monthly income is expected to be 519.52 ETB on average. Accordingly, in the post-PSNP financial transfer period, above 50 percent of the increase in the monthly income of program beneficiaries is due to financial transfer. This evidence generally reveals that the lion's share in the increase of income of beneficiary households in the last 2-3 years is attributed to financial benefits provided by the public works sub-program. Thus, it is possible to infer that the implementation of PSNP is showing significant progress and effect on the advancement of income and livelihood of poor households.

Monthly Housing Cost of Beneficiaries Before & After Taking part in PSNP

A survey made by Francesca, et al. (2018) revealed that there is a comparatively large evidence base connecting financial/cash transfers to an increase in household total expenditure including expenses on housing and food and poverty reductions. An increase in total household expenditure is associated with all kinds of financial benefits such as an increase in per capita monthly total expenditure and 15%increase in total monthly consumption expenditure for urban households (Attanasio et al., 2005 and AIR, 2014).

Braido et al., (2012) and Perova & Vakis (2012) also showed the range of increase from a 5.3 percentage point change in total per capita expenditure to a 33 percentage point change in total expenditure respectively.

To evaluate the real effects and progress of the program housing expenditure capacity was considered as an outcome variable and performance indicator. Accordingly, the current housing expenditure capacity status of beneficiary households (i.e. in the post-financial transfer period) was compared to their status before 2017 (i.e. pre-financial transfer scenario). Similarly, evidence of this survey about the impact of cash transfers on housing expenditure shows that the mean monthly affordable housing expenditure capacity of beneficiary households has comparatively increased in the post-PSNP financial benefit period. The monthly affordable housing expenditure capacity of households in the pre-PSNP financial benefit period has shown a change of about 71 percent increase mainly because of the financial benefit provided by the program. Considering the generally increasing nature of housing cost in the city of Addis Ababa from time to time, the largest

share in an increase of housing expenditure capacity in the last 2-3 years of post-2017 is attributed to financial benefits provided by the program.

Therefore, it is possible to conclude that the safety net program through its financial assistance is progressing towards positive outcomes as planned. Financial assistance going to poor households is making a significant change in the improvement of their housing cost expenditure capacity. It is producing significant contributions to the enhancement of housing expenditure capacity of poor households by increasing their monthly income. This positive outcome in turn has its implication on the improvement of housing, other household expenditure, and life of households.

Level Of Purchasing Power of Households Participating in PSNP Vs. Households Not Participating in PSNP for Housing Cost

Although financial supports were underutilized, they have wide-ranging outcomes mainly on economic and social conditions of poor households and individuals such as better expenditure or consumption capacities when measured and compared to food aid (Gilligan & Sarah, 2013 and ASPIRE, World Bank, 2015).

Bourguignon et al. (2004) and Arnold et al., (2011) also showed that financial assistance improves socio-economic outcomes and makes food & housing more affordable by enhancing household income in the short term and human capabilities in the medium and long term.

In this section of the study level of monthly purchasing power was analyzed and compared between program beneficiary households against non-beneficiary households. Likewise, as findings of this study witness even if the poverty level of both categories of households is equivalent, their expenditure capacity level is significantly different. Evidence indicated by figure-2 also shows that as a result of financial benefits provided by PSNP the level of purchasing power of households participating in PSNP is generally higher compared to households not participating in PSNP. The level of housing purchasing power of the poor households who are not participating in PSNP is found to be lower because they are not receiving financial transfer or benefit from the program. Among the various sources of purchasing power, financial transfer provided by PSNP accounts for the largest share or percentage for the majority of poor households participating in the program. Whereas, for poor households not participating in the program the dominant sources of purchasing power are Beggary and Help from kith & kin.

Thus, it is possible to infer that by enhancing the monthly income of poor households, the public works sub-program is playing significant and positive roles in the city through its financial transfer. Consequently, these financial benefits provided by safety-net programs could make a difference and help poor households in enhancing their housing expenditure power.

Significance of PSNP to Women Beneficiaries Compared to their Counterparts

To promote and supplement the evaluation of the effect and progress on income and livelihood of program beneficiaries, its significance particularly to women is analyzed compared to men. Thus, this survey reviewed the effects of safety net programs on gender-related results and how outcomes differed according to the gender of program beneficiaries.

Proportion of Cash Transfer Going to Female Beneficiaries Compared to Male

Concerning eligibility and targeting performance of safety net programs surveys by Haushofer and Shapiro (2013) and Francesca et al. (2018) showed that men and women benefited in different ways and significant differences between the main recipients. Green et al. (2015) and Hagen-Zankeret et al. (2017) showed women households received financial assistance and benefited as much as men.

Eligibility criteria and beneficiary targeting mechanisms may have an important mediating effect on the effects of financial/cash transfers made by safety net programs (Yoong, Rabinovich, and Diepeveen, 2012). Due to this reason, the actual benefits and progress of the public works sub-program towards women households were further evaluated by this household survey considering the proportion of cash transfer going to the main recipients. Hence, the proportion of household headship and monthly cash transfer was compared between women and men beneficiary households. Similarly, concerning participation, since the majority of households participating in the program are found to be female-headed and male-headed in their respective sex, women are well targeted by and participated in the program. Moreover, evidence from statistical tests shows that the aggregate number of financial transfers going to women is slightly higher compared to men households. Since the difference is only 55 ETB and not statistically significant, one can recognize that women beneficiaries received financial assistance as much as men. The public works sub-program is providing women as a good amount of financial assistance as men ones per month in the last 2-3 years. This has its implication and contribution in reducing inequalities between men and women poor with basic income sources. In general, based on these pieces of evidence it is possible to conclude that eligibility criteria and targeting mechanisms of this public works sub-program are gender-sensitive and inclusive as planned.

Monthly Income of Female Beneficiaries Compared to Male Beneficiaries

Concerning the impact of the financial transfer on the monthly income of beneficiaries of both sexes' studies by Blattman et al. (2013 and 2014) and Green et al. (2015) revealed a statistically insignificant positive effect of financial transfer for women i.e. no increase in expenditure and income for female beneficiaries compared to male. On the contrary, Haushofer and Shapiro, (2013) and Francesca et al., (2018) found that men and women benefited from safety net programs in different ways and significant differences between main recipients.

In this study, the current overall monthly income of women beneficiary households was compared against men beneficiary households. Accordingly, a statistically significant difference in the monthly income of female and male beneficiary households. Regardless of equivalent cash transfers received by both categories of beneficiaries in post-PSNP, the overall monthly income of women beneficiaries is found to be bigger by about 125 ETB compared to their men counterparts. Even though this amount of income difference may not be substantively larger enough considering the current local market value, such differences are created when financial transfers are either spent or invested. As per the opinion of most of the key informants indicated while financial transfers are often spent on monthly expenses by men beneficiaries, financial transfers are not only spent

but also saved up and invested by women beneficiaries for additional income-generating businesses. If not the only, financial transfers for these women households are the dominant source of income which also indirectly helped them as means of seed money to take part in other supplementary income-generating activities in their free time. However, male beneficiaries are relatively weaker in taking part in supplementary income generating activities other than the financial transfer they receive from the safety net program.

Since women households are relatively more vulnerable groups of the urban community, it is fair and acceptable to benefit them as well as enhance their income through such types of financial transfers. Although another detailed assessment is required to show more statistically significant differences in outcomes for both sexes, the available evidence of this study indicates that women households are not just participating in the program well but also getting as much as benefits compared to men. As planned public works sub-program is significantly contributing to the enhancement of income and livelihood of poor women households in the city.

Constraints and Challenges of PSNP Implementation

Although PSNP particularly public works sub-program is significantly contributing and progressing towards the enhancement of income and livelihood of beneficiary households, there are factors affecting implementation of this safety net program. The program shortcomings that negatively influence implementation of PSNP include: first, the provision of financial transfer and inputs for public works activities such as uniform clothes, shoes, work equipment, gloves, and safety materials are often delayed and postponed for an unknown time.

Second, the monthly financial transfer being provided since 2017 is lower in its size or amount and characterized by reducing trend in its value as compared to the current cost of living. Such unintended effects and problems resulted from the rigidity nature of the benefits system and are often magnified by the influences of unexpected periods of disasters such as increasing inflation and recently the state of emergency due to novel coronavirus (COVID-19) pandemic. Third, although this program is generally pro-poor, there is the inclusion of some non-eligible beneficiaries as well as the distribution of beneficiaries and benefits that are not adequately targeted on the poorest quintile groups of program beneficiaries. Lastly, a lack of supply-side supplementary services and support by concerned bodies such as training, supervision, and follow-ups may hinder the complete achievement of program objectives and contributions. Through improper waste disposal practice of local communities on public work sites, roads, walkways, and drainage canals, lack of adequate awareness and cooperation from the residents' side is also another program constraint.

V. Conclusions and Recommendations

In general, the study highlights that the public works sub-program represents key components of the overall productive safety net program that make significant contributions and progress towards income enhancement and sustainable livelihood objectives. However, it investigates unintended effects and shortcomings of financial transfers which resulted from challenging factors that affect

program implementation and helpful outcomes. This includes delays in the disbursement of financial transfer and material inputs. The size and value of financial transfer are reducing from year to year particularly relative to an existing local market and increasing cost of living or inflation rates in urban areas. Such problems are often magnified by the influences of unexpected disasters such as increasing cost of living, inflation, and COVID-19 pandemic.

To address program constraints, shortcomings and take full advantage of outcomes of these safety net program potential solutions are suggested such as scaling up this safety net program and expand its coverage to include additional poor households. Increase the size of monthly financial transfer, additional aid in cash or kind to more vulnerable households mainly in periods of disasters such as inflation and COVID-19 pandemic. Give more attention to program beneficiaries in the poorest quintile group as well as provide complementary services and interventions like follow-ups, training, and information constantly. It is also good future research to focus on wider scope by including other cities in Ethiopia and indicators.

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2.2. Challenges and Opportunities of Public Private Partnerships in Electricity Service Delivery: The Case of Prepaid Electric Metering in North Addis Ababa, by Yikber Yimesgen

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Abstract

Public Private Partnerships has been acknowledged as a remedy for inefficiencies of public-sector in-service delivery and the Public Private Partnerships were institutionalized as key instrument of service delivery in various areas. The researcher commenced the study through exploring empirical gaps in prepaid electricity metering service delivery Public Private Partnerships in Ethiopia. The study assessed challenges, operational constraints, and opportunities of public private partnerships in prepaid metering electricity service delivery in North Addis Ababa. A mixed research approach was utilized for the study. About 398 households were selected through simple random sampling method for the study. Data was collected through household interview schedule, key informant interview, and focus group discussions. The researcher utilized mean, standard deviations for data analysis and triangulated it with qualitative data. The study indicated that Public Private Partnerships have operational constraints such as: network difficulty for recharge, long queues at payment centres, and failure to process payment data on time. The main challenges of Public private partnerships were lack of access to finance, absence of good governance and poor risk sharing and risk allocation system. The main opportunities of PPPs in electricity service delivery were enabling legal and policy framework, the existence of interested private partners and political support from the government. Working on good governance, integrating the PPPs in the FDRE financial structure, and making a thorough risk analysis and risk allocation procedures could reduce the challenges of Public Private Partnerships in electricity service delivery. Furthermore, to enhance the opportunities of PPPs in electricity service delivery, sector specific PPP policy should be developed; and integrating the PPPs framework at all governmental levels is also crucial.

Key Words: Public Private Partnerships, Electricity, Prepaid Metering, Service Delivery

I. Introduction

There is a growing trend of interest in international policy discourses towards the Public Private Partnerships (PPPs) for service delivery though the Public sector was perceived as a prime provider of public services (Chowdhury, *et al*, 2016; Yilma, 2019). Especially, starting from the 1980s there was a shift for involving the private sector in infrastructure and social services (Associates, 2017). The PPPs was institutionalized as key instruments of public policy and service delivery across the world (Nilufa A. Khanom, 2010). PPPs involved in public service delivery in various countries. Provision of better quality services has become among the main objectives for pursuing the PPPs (Associates, 2017).

Based on World Bank (2017) public private partnerships are defined as a contract between a private party and a government entity, for providing a public service, in which the private party bears significant risk and management responsibility. The European Commission (2003) defined PPP as a partnership between the public sector and private sector for delivering a service traditionally provided by public sector.

In developing countries there have been increasing usage of PPPs for service delivery in 21st century (Associates, 2017). Various countries arranged payment mechanisms in which the private party can be paid by collecting fees from service users or by the government or by a combination of the two with the common, defining characteristic that payment is contingent on performance (World Bank, 2017). The developing countries engaged with PPPs for enhancing service delivery (UNDP, 2015); they pursue PPPs to provide quality of services, to use private sectors efficiency, to access improved technology and to ensure service coverage (Associates, 2017).

PPPs involve at various sectors for service delivery in Ethiopia such as: Addis Ababa city exhibition center, municipal solid waste management and prepaid metering electricity services (Gebreselassie, 2017; Yilma, 2019). The Prepaid metering electricity provided by PPPs was initiated in the major cities of Ethiopia starting from 2013 (UNDP, 2015). However, there is a limited knowledge on challenges and opportunities of the PPPs in electricity service delivery in Ethiopia. Thus, this study was intended to assess challenges and opportunities of PPPs in prepaid metering electricity service delivery.

Although the public private partnerships as an approach for service delivery gained attention, the challenges and opportunities of the Public Private Partnerships in Electricity service delivery were not yet well studied in Ethiopia. Nevertheless, there are studies on challenges and opportunities of PPPs in service delivery in Ethiopia in other sectors. For instance, Mesfin & Kidanemariam (2016) investigated factors and constraints for the implementation of PPP in utility billing which encompasses telephone, sewage and electricity services. Similarly, Gebreselassie (2017) and Gudissa (2016) identified challenges and prospects of PPPs in telephone, electricity and water utility payments. Challenges of PPPs in E-governance initiatives of Ethiopia were investigated by Belachew & Shyamasundar (2013).

The HEPCAPS2 (2015) assessed the Public Private partnerships in health care services in Ethiopia. Likewise, Hurissa (2016) investigated the context in which PPP programs are taking

place in the Ethiopian heath sector and examines the extent to which the health service PPPs are implemented in Ethiopia by taking the health sector of Addis Ababa as a particular case. On the other hand, Mossisa (2016) assessed the private-public universities partnership in Ethiopia with particular reference to the public and private universities.

Reviews of these studies indicated that challenges and opportunities of PPPs in service delivery are sector specific. These gaps motivated the researcher to assess challenges and opportunities of PPPs in prepaid electric metering service delivery for a thorough understanding on the issue. The research questions are:

1) What are the operational constraints of public Private partnerships in prepaid metering electric service delivery?
2) What are the main challenges of the public private partnerships in prepaid metering electric service delivery?
3) What opportunities do the Public Private Partnerships have in prepaid metering electric service delivery?

II. Methodology

Research Design

The research approach was a mixed research. Both qualitative and quantitative data were utilized for data triangulation. Quantitative and qualitative data were integrated to add value to arguments and to address research objectives. The research was a descriptive study. For the research, data were collected at one point of time.

Description of the Study Area

The research was conducted in Addis Ababa city. The geographic location of Addis Ababa city is between 9º1'48"N 38º44'24"E and 9.03000ºN 38.74000ºE. The electricity service provision in Addis Ababa City is divided in to four districts: namely the North Addis Ababa, South Addis Ababa, East Addis Ababa and West Addis Ababa districts. The customers of Ethiopian Electric Utility (EEU) in Addis Ababa city is very wide, due to this the researcher selected North Addis Ababa district from four districts found in Addis Ababa. The North Addis Ababa electric utility district provides services for the Gullele, Arada and Addis Ketema Sub-cities.

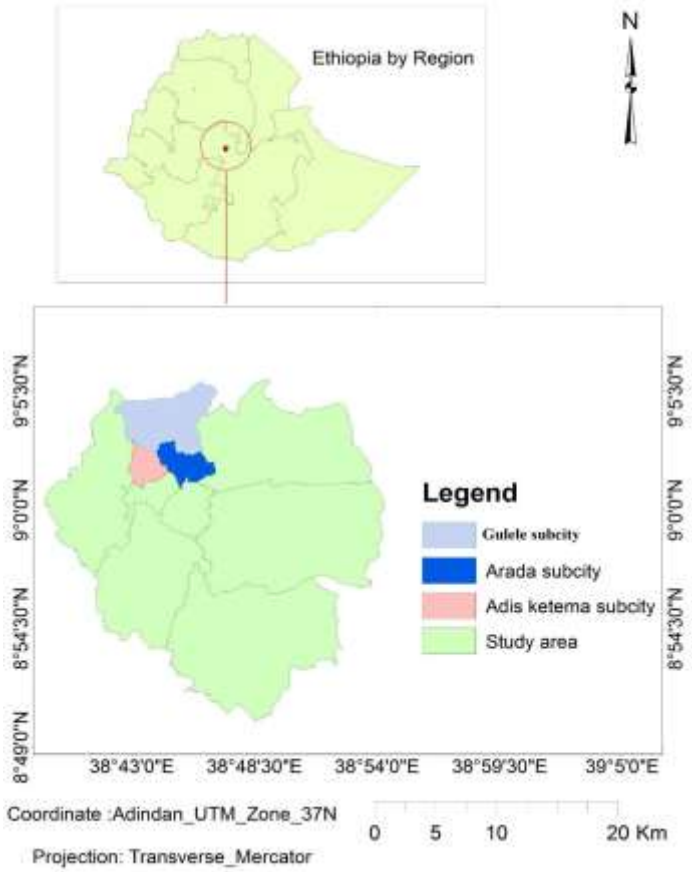

Fig 1: Map of the study area

Sampling Methods and Procedures

Both probability and non-probability sampling procedures were implemented in the study. The Research was conducted in Addis Ababa city; the study area was selected purposively considering that sufficient data could avail there since the prepaid electric metering PPP was implemented in the city prior to other areas of the country. The researcher selected North Addis Ababa district from four districts found in Addis Ababa. North Addis Ababa electric utility district provides services for the Gullele, Arada and Addis Ketema Sub-cities. Prepaid electric metering customers samples were taken through simple random sampling from *Gullele*, *Arada* and *Addis Ketema* sub cities. In 2019 about 125, 002 households were prepaid electricity metering customers in North Addis Ababa. The study samples were selected from these populations through Yemane sampling formulae (Yemane, 1967).

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

Where, n is sample size; N is total population; *e* denotes sampling error at 95% confidence level and 5% margin of error. Accordingly, samples were 398 households. The Key informant interviews and the focus group discussions participants were selected purposively.

Data Type and Sources

Primary and secondary data were collected for the study. Primary data was collected from prepaid metering service users, professionals, and service providers in the PPPs. Secondary data was collected from annual reports of Ethiopian Electric Utility and public private partnership agency, PPP laws, policies, and strategies of the FDRE government.

Methods of Data Collection

Household Interview Schedule

Household interview schedule was utilized which helped to gather primary data from households. The researcher arranged a pre-test for about 10% of samples. It helped to check validity of instrument, and to ensure that all questions were understandable. The household interview schedule focused on the constraints and challenges of the PPPs in prepaid electric metering services.

Key Informant Interview

The researcher conducted key informant interview (KII) to triangulate the data. The interviewees were selected from the Public Private Partnership Agency, professionals from PPPs, Ethiopian Electric Utility senior employees. The data collection from the Key Informants was completed when it reach saturation point. About Seventeen individuals interviewed. The KII emphasized on challenges and opportunities of PPPs in prepaid metering service delivery.

Focus Group Discussion

The researcher conducted FGDs to collect qualitative data. Participants of FGDs were household heads that utilize prepaid electric metering and other stakeholders. About four FGDs were conducted; totally twenty eight individuals participated. The FGDs used to know challenges and opportunities of PPPs in prepaid electric metering service delivery.

Methods of Data Analysis

To analyse the operational constraints of PPPs in prepaid metering electric system, a three-point likert scale frequency (1= never, 2= sometimes and 3= always) was utilized using SPSS software. Mean and standard deviation results were used. Mean values utilized to categorize practical constraints. Mean values with ≥ 2 were regarded as practical constraints and mean values < 2 were regarded as not practical constraints.

To identify challenges of PPPs in service delivery pair-wise ranking was applied. Challenges identified by FGD participants and KII participants were presented in pair wise matrix with scores and ranks. The opportunities of PPPs in electricity service delivery were analysed through thematic analysis. Qualitative data collected through FGDs, and KII was narrated in each thematic area.

III. Results and Discussion

Operational Constraints of Public Private Partnerships in Prepaid Metering Electricity Service Delivery

The prepaid electricity metering system was provided by *Lehulu Kifya,* in public private partnership with the Ethiopian Electric Utility Starting from 2013 to 2019. The PPP arrangement between *Kifiya Financial technology* and Ethiopian Electric Utility was based on Build, Operate and Transfer (BOT) PPP model to deliver bill payment services. *Lehulu Kifiya* payment centers were established as one-stop shops for various utility payments in Addis Ababa. *Lehulu Kifiya* was responsible to invest, operate and to collect revenue from customers; it gets commission from these services.

The result indicated that the main constraints that PPPs faced in providing prepaid electricity metering services were difficulty of network for recharge ($\overline{X}$= 2.4296), long queue ($\overline{X}$ = 2.4196), bill payment does not update on time ($\overline{X}$ = 2.3317), getting service takes much time ($\overline{X}$=2.2663).

Table 1: Mean value of PPPs practical constraints in prepaid metering

practical constraints	N	Mean	Standard Deviation
Difficulty of Network for recharge	398	2.4296	.76367
Long Queue	398	2.4196	.77578
Failure to process Payment data on time	398	2.3317	.77463
Getting service takes much time	398	2.2663	.74403
Customers resentment for service payments	398	1.6055	.75294
Prepaid meter acquisition is costly	398	1.2688	.52214
Limitations in feedback handling	398	1.2060	.47376

Source: Survey, 2020

Network Difficulty for Recharge

The prepaid electric metering service is highly dependent on well-functioning network system. Difficulty of networks for recharging prepaid electric bill was found one of the main practical problem of PPPs ($\overline{X}$= 2.4296). The participants articulated that there was frequent interruption of network system at most *Lehulu* centers. A participant said that:

To get functioning system you may be forced to move from Gullele to Arada. Sometimes *Lehulu* centers say there is no network for paying electricity bills and they order us to go to other centers. Based on the FGD and KII participants network failure was the most challenging problem; when the Ethiotelecom network is down, the Lehulu centers cannot use their own local area network.

Generally, the dependence of Lehulu Kifiya network system on Ethiotelecom have affected the operational efficiency of the PPPs; and for the private partners who engage in PPPs need to reconsider to develop a well-functioning and uninterrupted network system. Similar to this study, Poor infrastructure of Ethiotelecom was also identified as a main problem for Lehulu centers in a study conducted by Gebreselassie (2017).

Long Queues at Payment Centres

Long queues were identified as one of the constraints in prepaid metering electric service delivery ($\overline{X}$= 2.4196). The study indicated that customers have experienced difficulty trying to pay their bills due to long queues. A participant stated that *Public servants took time off from work to pay their bills and waited for hours in queues*. Participants stressed that some payment centers were overcrowded that forced customers to wait for long time in settle their bills. Payment centers such as Merkato, Piassa, Mexico, and Megenagna were identified as the busiest and have the longest queues. To reduce long queues, Lehulu centers extended working hours and introduced queue management system, but according to FGD participants *no improvement on the long queues as prepaid metering customers were increasing annually*. These long queues have been bigger problem even these days, and customers wait for four and more hours to pay electric bills at customer service centers.

Failure to Process Payment Data on Time

Failure to process Payment data on time was other practical constraint of Lehulu Kifiya centers ($\overline{X}$= 2.3317). Sometimes Lehulu Kifiya centers did not send bill payment data to Ethiopian electric utility center on time and customers were required for repayment. Due to this, customers sometimes face disconnection of electricity lines. This occurred at times the network is down in which the entire center will be forced to use manual way of encoding data. Such data will be entered into the system when the network is up which led to delays in updating bill data.

Challenges of Public Private Partnerships in Prepaid Metering Electricity Service Delivery

The result indicated that among the challenges: lack of access to finance, absence of good governance and poor risk sharing mechanisms, lack of experience and skill in the private sector ranked first to fourth respectively.

Lack of Access to Finance

This study indicated that the government does not provide finance for locally established companies. However, the government was supportive of foreign based firms; financial provision is among the supports. The government wants to transform the cash money payment transaction in to digital payment platforms. Such projects demand billions of birr investment since EEU have large number of customers. So, due to the tight financial service from Development Bank of Ethiopia (DBE), it was difficult to get loans in billions of birr. DBE do not provide such loans for PPPs who engage in prepaid metering services. So, the private partners will be forced to cover their financial needs. There was also bureaucratic and structural barrier from the government which prevents private sectors from getting loans and other

financial services. Other studies conducted on the challenges of PPPs in Ethiopia supports the findings of this study. For instance, in a study made by Asubonteng (2011) lack of access to capital was among the challenges of PPPs in service delivery. Similarly, Belachew & Shyamasundar (2013) point out that getting fund was one of the main constraints of PPPs.

Absence of Good Governance

The study indicated that EEU has serious problem of good governance. EEU was identified among the most corrupted organizations in the country. The EEU officials also accept the serious corruption prevailing in the organization, and an official said that *we have corrupted and thief employees.* In the FGDs, the participants stress that the EEU is unresponsive especially on power interruption problems. A participant said that:

You may wait for 15 days if you lost electricity service in your house. The free calling line they provide for notifying power interruption is not functional. After registering power interruption problem, they did not come to fix it immediately.

Absence of good governance will potentially handicap the performance and effectiveness of PPPs that engage in prepaid electricity service delivery. Based on Mesfin, D., & Kidanemariam, A. (2016) good governance was identified among the most important factors for PPPs success.

Poor Risk Sharing and Risk Allocation System

The PPP agreement between the government and *Kifiya Financial* included risk sharing mechanisms. The private company was required to have risk insurance. The risk to be covered by the government and the private company was clearly stated initially through the contract. To enter in to PPP arrangement, feasibility study was made and risk analysis was part of it. Risks are identified by the PPP agency before entering in to contract. Some of the risks are allocated to the private partner and others to the public partner. However, in practice most of the risks in electricity service delivery were on the public partner. The study indicated that the risk sharing agreements were not implemented according to the contracts.

Poor Experience of the Private Partners

The PPPs which engaged for prepaid electric metering services had no prior experience on PPP projects. Kifiya Financial was new for the PPP framework and for the prepaid electric metering service delivery. Based on the KII it was inefficient in its technical capacity to run the utility payment system. Lack of experience on the PPP could be a challenge for other private partners, established in Ethiopia, that are willing to engage in prepaid metering electric service delivery. Those companies who show willingness to engage in PPP arrangement for prepaid metering service delivery are also new to the prepaid metering system. Generally, companies interested in prepaid electric metering service delivery in Addis Ababa have technology and skill but most of them lack experience.

Opportunities of Public Private Partnerships for Prepaid Electric Metering Service Delivery

Enabling Legal and Policy Framework

The implementation of sound and robust PPP projects depends on the existence of appropriate legal and policy framework as well as political certainty which is a prerequisite for long term projects. The FDRE government considers the partnership between the public and private sectors as one of the required strategies to promote growth and development. More specifically, promotion of PPPs has been identified as a way to improve efficiency to public services.

The government have endorsed a PPP policy framework in 2017. Based on Ministry of Finance and Economic Cooperation (2017) the PPP policy preparation was given priority in the implementation of the government's PPP program. Hence the MoFEC has drafted the PPP proclamation that was later promulgated. The FDRE government have endorsed a law for implementing the PPPs and established a public private partnership agency to facilitate the PPPs initiatives.

The PPP proclamation No 1076/2018 and the PPP policy document clearly indicated the government's decision to adopt the PPP scheme. However, the PPP proclamation was limited in its scope of application on the federal government institutions. The regional governments do not integrate the PPP frameworks in service delivery. The FDRE Procurement and Property Administration Proclamation No.649/2009, endorsed various procedures of procurement and bidding, granted power for the Ministry of Finance and economic development to issue directives prescribing the rules governing the formation of Public Private Partnership and its modes of implementation.

The KII participants said that there is a clear legal framework for facilitating the PPPs engagement in service delivery. The problem as to the participants is on the effective implementation of the laws. The financial structure of the country is also becoming more flexible, which will enable private partners that engage in PPPs to develop customer responsive payment mechanisms.

Political Support from the Government for Public Private Partnerships

The government have interest to attract innovative technology, for this purpose it supports the PPPs. On the other hand, the government is less interested to initiate the PPPs in prepaid metering service delivery. Based on the data from KII: *the government is open to partner with the private sector on some service sectors such as: transport, immigration, football tickets, and waste management services.*

The government provides a PPP guideline for practicing and private partners are willing to invest in the PPPs which enable them to be successful. Furthermore, the management and joint ventures put in place by the government in preparation for full-scale privatization can be explored and structured to constitute PPP investment projects. Mesfin & Kidanemariam (2016) stated that the Ethiopian government recognized the need for integrated public service delivery to improve services by applying various programs through PPPs.

Based on the KII participants, the government interest on PPPs depends on the type of sector. They emphasised that the government does not reject the involvement of the private sectors in electric service delivery. The PPP policy framework highlights that the government recognizes PPPs key role in service delivery and it elaborates that the Government projected to promote the PPPs participation in service delivery. Furthermore, the government considers PPP arrangements as one way of encouraging Entrepreneurship development. The government's positive approach for the PPPs will extend to the PPPs in prepaid electricity service delivery.

However, currently the government follows overt and covert approaches. Overtly, the government is willing to work with PPPs and it seems open for private sector. But practically, private companies faced difficulties to move further in engaging with government through PPP.

However, it is difficult to be too pessimistic on government willingness in engaging PPPs for prepaid metering electric service delivery for the following reasons: First, the PPP contract was operational from 2013 until late 2019 with *Kifiya Financial*, so it is early to conclude that the government creates difficulties for private sector participation. Second, the government shows interests to engage with the private sectors through PPP on other service sectors such as transportation, solid waste management, and Taxi Ride services, so it might reconsider to openly engage in a PPP framework for prepaid metering service delivery. Furthermore, the Policy and legal frameworks are revitalizing the PPPs for service delivery.

The Existence of Strong and Interested Private Partners

The existence of strong private partner is a key opportunity for the development of PPPs in electricity service delivery. As Mesfin, D., & Kidanemariam, A (2016) highlighted the existence of strong private partner is the most important factor for the success of PPPs. In the FGDs and KIIs, it was indicated that various private companies show interest to work on prepaid electric services. There are various companies who wanted to engage in prepaid metering electric service delivery such as Horizon Express, Hybrid Technology and others in PPP by improving electricity services. On this issue, an interviewee stated that: *a company who based abroad show interest to initiate a pilot project in Addis Ababa to run prepaid electric metering payment, water and telephone utilities. But, due to the government's unwillingness to give up those utilities it shifted to other sectors such as transportation*.

IV. Conclusion and Recommendations

Conclusion

The PPP arrangement between EEU and *Lehulu Kifiya* can be taken as a pilot project for prepaid metering electric service delivery in Addis Ababa. The PPPs faced constraints in electricity service such as: long queues, serious network problems, poor customer handling, and problems in updating payment data on time that need to be tackled. As the study indicates, many of the PPP challenges such as lack of access to finance, absence of good governance and poor risk sharing arises from the government structure. Understanding the prior PPPs practical problems as well as challenges can be taken as a cornerstone for private partners to engage in PPP in electricity service delivery. On the other hand, the existence of an enabling legal, regulatory framework and strong interest of the private sectors to engage in the PPP framework

can be taken as an opportunity for integrating the public private partnerships in electricity service delivery. The PPP policy framework lacks specific and preciseness. Since the PPP encompass a wider scope and many sectors, establishing a sector specific policy for the Ethiopian electric service is essential. There exists promising future for the PPPs in Ethiopia since the PPPs are institutionalized in the public private partnership proclamation, the PPP policy, and the federal procurement laws which can facilitate PPPs engagement in electricity service delivery. However, the PPP legal and policy framework scope of application is limited to the federal government and the regional governments' lags behind in developing comprehensive PPP frameworks.

Recommendations

To reduce the challenges handicapping PPPs in electricity service delivery: the government must work to improve bad governance and corruption prevailed in the bureaucracy that handicapped PPPs for the full utilization of the PPPs in service delivery. The Federal PPP agency should make a thorough risk analysis for PPP projects and risks must be properly allocated both for the private and public partners. The PPPs who engage in the prepaid metering electric services need to establish their own network system independent of the Ethiotelecom to minimize network problems. Integrating of various laws and proclamations could facilitate for enhancing PPP in electric service delivery. Furthermore, the FDRE government need to integrate the PPP frameworks on the government's financial structure to reduce the financial shortages of PPPs. Integrating the regional governments in the PPP framework is key task to be addressed by the government.

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2.3. Determinants of Total Factor Productivity of Large and Medium-scale Manufacturing Industries in Ethiopia: Time-series Analysis, by Kidanemariam Gidey

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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 each 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. But, with 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 Manufa cturing Industries in Ethiopia is highly constrained by a shortage of supply of raw materials; absence of demand for products, and lack of working capital.

Keywords: manufacturing, productivity, determinants, GMM, Ethiopia

I. 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 general and the manufacturing sector, in particular, has a limited share in terms of production, employment, exports, and inter-sectoral linkages (AACCSA, 2014 and 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 key determinants 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 (Kaldor, 1967 and 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 and 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 (UNDP, 2017). 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 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. Many factors determine the performance of the manufacturing sector productivity in developing countries (UNDP,2017). 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 and 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 on 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. This observable gap has instigated this research to identify 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. 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 determinants of total factor productivity (TFP) in the large and medium-scale manufacturing industry in Ethiopia.

II. Methodology

Data Sources

The study has used 26-year time series data starting from 1993 to 2018. Because most of the required data series are available only for the period 1993-2018. The annual data was obtained from Central Statistical Agency, National Bank of Ethiopia (NBE), Ethiopian Economic Association (EEA), National planning commission, and other international data sources like WB, UNCTAD, and IMF.

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 amount 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 and 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:

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

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

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

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 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.

$$\boldsymbol{TFP_t = \beta_0 + \beta_1 IMPIN_t + \beta_2 LOAN_t + \beta_3 FDI_t + \beta_4 EXPIN_t + \beta_5 ENROL_t + \beta_6 ROAD_t + \beta_7 GDPPC_t + \beta_8 INF_t + \nu_t} \quad \text{..... (4)}$$

Where $\boldsymbol{\beta_0}$ 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 the growth rate of secondary school enrolment, **ROAD** is growth in road coverage which is a proxy for infrastructure development, **GDPPC** is the growth rate of real per capita income, **INF** is the rate of inflation, and ν_{it} is an error term that captures all other omitted factors with $\sum(\nu_t) = 0$ for all i and t . Parameters $\boldsymbol{\beta_1}$ to $\boldsymbol{\beta_8}$ are the elasticities of **TFP** wiith respect to each explanatory variable.

2.4 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 found more efficient than the common method of moment estimators as it uses a weighted matrix estimation technique which allows accounting for heteroskedasticity and/or serial correlation (Hall, 2005; and 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 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.

III. 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).

The 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. In the next eleven years, the number of large and medium scale manufacturing firms has increased by around three-fold and reached 3627 in 2017. 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).

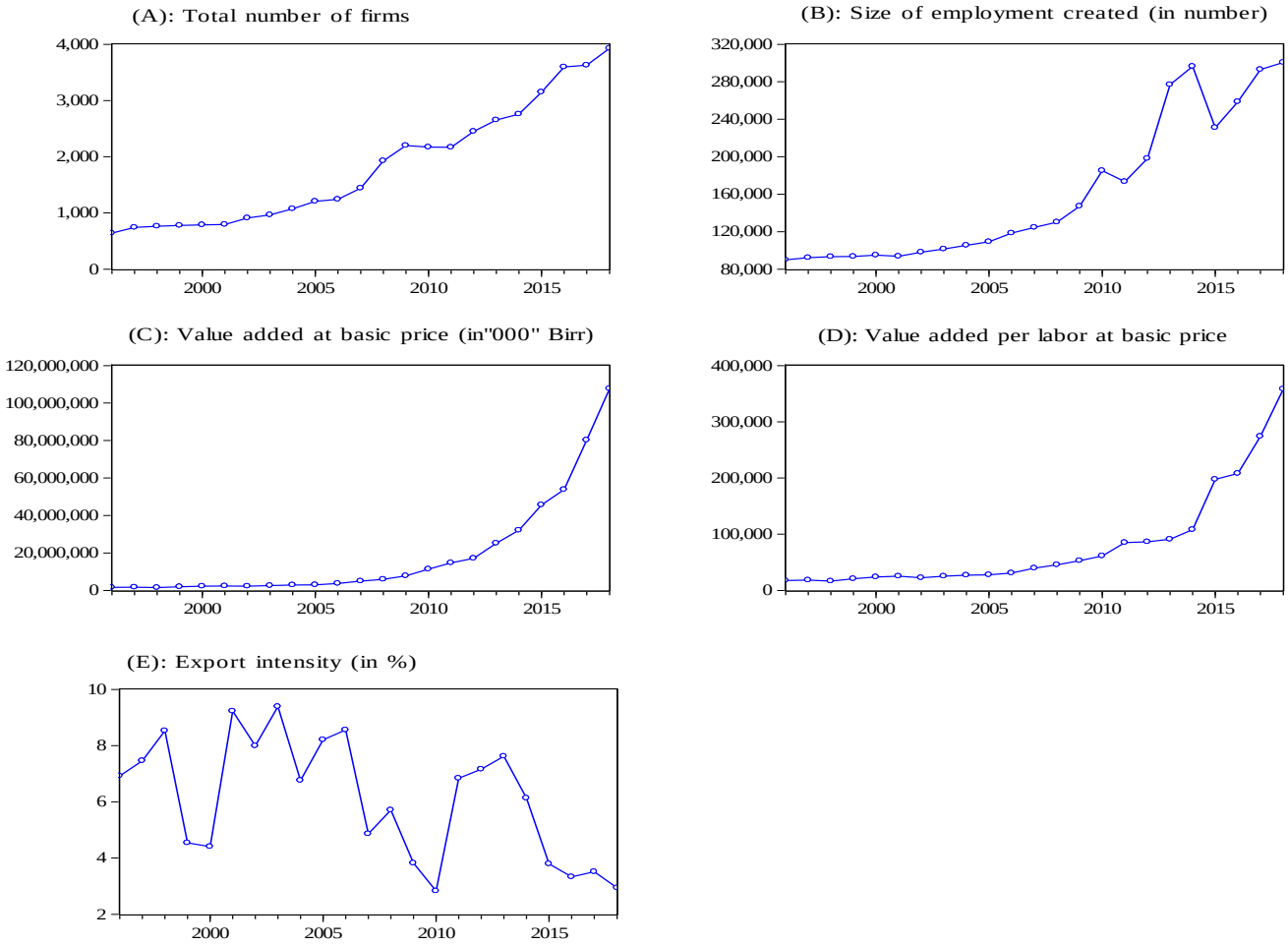

Figure 1: Performance of large and medium scale manufacturing industries (1992-2017)

Source: Own computation based on CSA data

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 increased by nearly 32%. In the next eleven years, 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 & Footwear	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).

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 & Footwear	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

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 worth about 1.6 billion Birrs 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, the 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.

Table 3: Amount And Percentage Distribution Of Value Added In LMSMI By Industrial Group, 1996–2017.

Industrial Group	Value-added at 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 & Footwear	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

***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.

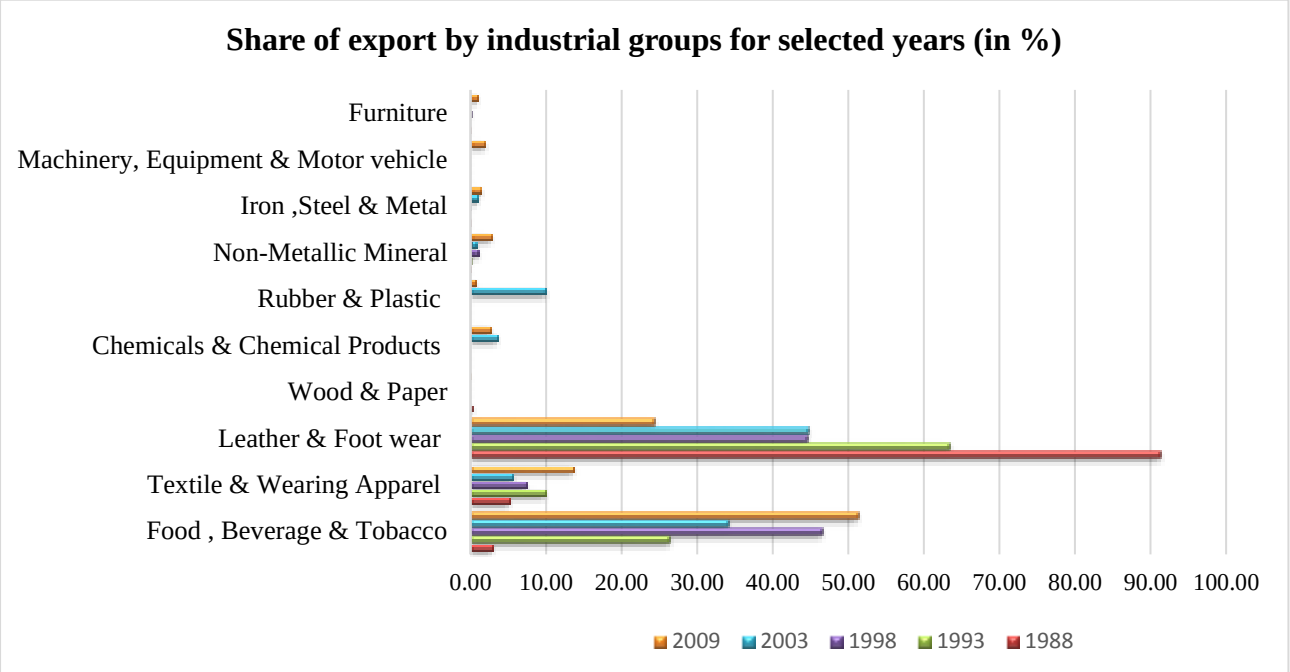

Figure 2: Share of export by an industrial group for selected years (1992-2017)

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. Next, the industries reported the absence of demand for products (except for Leather & Footwear) as the second major operational problem they faced. Then, 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.

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.

Table 4: Unit Root Analysis

Variables	ADF Unit Root Test			PP Unit Root Test		
	T-statistic	Prob.Values	Decision	T-statistic	Prob.Values	Decision
TFP	-5.555088	0.0007*	Stationary	-5.599315	0.0006*	Stationary
IMPIN	-3.460913	0.072***	Stationary	-3.509865	0.060***	Stationary
LOAN	-2.732223	0.083***	Stationary	-2.810255	0.071***	Stationary
FDI	-2.845941	0.066***	Stationary	-2.845941	0.066***	Stationary
EXPIN	-3.276515	0.093***	Stationary	-3.308686	0.088***	Stationary
ENROLg	-4.038066	0.021**	Stationary	-4.067676	0.019**	stationary
ROADg	-3.134218	0.037**	Stationary	-3.189653	0.033**	stationary
RGDPPCg	-4.531169	0.007*	Stationary	-4.550280	0.0068*	stationary
INF	-3.837561	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.

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 a 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 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 effect on total factor productivity of Large and Medium Scale manufacturing industries while the effect of per capita GDP (GDPPCg) is insignificant.

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.
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

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 suggests FDI is a major channel of transferring foreign technology, familiarizing new processes and managerial skills, and know-how diffusion to the domestic market (Kolawole, 2015 and 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.

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, and Jelenic, 2012; Alvarez-Ayuso, Becerril-Torres, and Moral-Barrera, 2011; Olomola and 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 and 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 is correlated with a 1.45% increase in TFP. This is consistent with the findings of Abreha (2019) for the Ethiopian manufacturing sector. According to AACCSA (2014) & 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.

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. Plus, 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).

IV. 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 inflation), 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 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.

Recommendation

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 to 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 to create a new area 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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2.4. Determinants of Augmenting Household Farmland Access with Emphasis on the Effects of Current Land Tenure: Evidence from Southeast Ethiopia, by Teshome Beyene

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Abstract

The current land policy of Ethiopia legally allows rural households to access agricultural lands although augmenting household farmland access is a problematic at national level. This study aimed at assessing the determinants of augmenting household farmland access emphasizing on the effects of the current land tenure in Arsi zone in Southeast Ethiopia. The study followed mixed-methods research design. The data were collected through survey questionnaire, focus group discussion and interviews. The study included 310 sampled households engaged in May and June 2019. Descriptive and inferential statistics were used for data analysis. Results indicated that total mean farmland size was 1.59 ha per household, government land allocation 41.9%, households headed by persons below 35 years 13%, all female-headed households 23.2%, and illegal farmland accesses. Regression analysis showed that number of oxen, total crop production; annual income, education, and credit access were the major determinants of household farmland access. In conclusion, farmland scarce areas in Ethiopia like Arsi zone have problems of deficient government land allocation, and illicit farmland transaction. Thus, the study recommended that the female-headed households should be empowered by the government to improve their farmland access. The younger-headed households must be encouraged by the development institutions with such as provision of extra oxen and credit service to improve their farmland access. The local government and farming community should affirm to legal land rules in maintaining tenure arrangements to liquidate illicit land markets. All level governments should strictly control alarming illegal changes of farmlands to urban areas via furtive land transactions.

Keywords: land tenure, tenure arrangements, farmland access, Arsi zone, Ethiopia

I. Background and Introduction

Land tenure is a key concept in land reform and influences measures given to improving land management (Chitsike, 2003). Bazga (2013) substantiates that land tenure studies are all to bringing into play the legal, social, economic, and political aspects of people. Differently, Simbizi et al., (2014) comment western-oriented economic approaches of land tenure issues do not ally with many tenure studies in developing countries. Holden and Ghebru (2016) confirm that their dissimilarities contribute to deviations in the field that makes land tenure studies more complex. Given that, this study was conceived to be done in Ethiopia where for the country faced problem of rural households' farmland access. The problem seems to have resulted from the nation's enduring ambivalent land tenure transformations for a longer time till these days despite its larger agricultural population (Crewett and Korf, 2008).

Certainly, Ethiopia has experienced three successive land tenures since it emerged as a modern state in the late 19th century. These land tenures consisted of the Imperial regime's reigned to 1974, land tenure of *the Derg* military regime from 1974 to 1991, and the current land tenure since 1991 (Bodurtha et al., 2011). After the downfall of the *Derg* regime, the newly emerged transitional government under the Ethiopian Peoples' Revolutionary Democratic Front (EPRDF) announced the continuation of the land policy of the *Derg* regime. It was amended and in 1995 state ownership of land was instituted in the new constitution (Hagmann, 2006). The policy concealed earlier bans such as restrictions on land lease, labor hiring on a private farm, sharecropping, and individuals holding more than 10 ha.

The rural land is accessed by government allocation, inheritance, gift, and land leasing, but cannot be sold, exchanged, or mortgaged (Rahmeto, 2009). The law allows for land expropriation and redistribution based on conditions such as unoccupied land, land with no heirs, and improper land management. Land redistribution and consolidation are pending on agreements of the community (Federal Democratic Republic of Ethiopia (FDRE), Proclamation. No. 456/2005; Oromia Region Council, Proclamation.No.103/2007). The government claims that state ownership tenure prevents the concentration of land in the hands of few landowners by purchasing from poor misery peasants. On the other hand, propagators of privatization advocate land holding security and efficiency could not be secured (Ambaye, 2015).

Additionally, others comment that the national mean farmland size is comparatively small in the world (Paul and Gĩthĩnji, 2017). Concerning this, Sklenicka et al. (2014) show that some Central and Eastern European nations have 0.3 to 0.5 ha average farmland sizes. Nachtergaele et al. (2011) and Wickramaarachchi and Weerahewa (2016) state that Asian nations also have 0.3 to 0.8 ha average farmland sizes. Indeed, African countries such as the Democratic Republic of Congo 0.5 ha (Huggins, 2015), Rwanda 0.72 ha (Ali and Deininger, 2015), and Egypt 0.82 ha (Abdulmoneim et al., 2012) reveal small average national farmland sizes.

Likewise, literature sources have shown that the current land tenure of Ethiopia could not solve the acute farmland shortage. Accordingly, Bodurtha et al. (2011) indicate that 43% of rural populations of Ethiopia are land less and 60% of which do not have sufficient farmland to produce adequate food. Paul and Gĩthĩnji (2017) also affirm that 54% of the farmers survive on one hectare or less. The same writers add that the plots were broken into sub-plots leading to an average parcel size of 0.71 ha about extreme fragmentations. Headey et al. (2014) addressed that Ethiopia has 0.96 ha national average farmland size per household with variations among regions. Tigray as well as Southern Peoples Regions each have 0.49 ha. Amhara Region has 1.09 ha and Oromia Region has the largest 1.15 ha per household. Commonly, in Ethiopia farmland is maintained according to the number of household sizes (Mengistu, 2014). Nonetheless, the studies missed to identify and modeling determinants of household farmland access.

Besides, the legitimacy of this land tenure remained controversial among sects in the field for a long time although the debate is influenced by ideological considerations rather than empirical data (Ambaye, 2015). Accordingly, assessing the effects of the current land tenure

on augmenting household farmland access urged this study. Thus, this study endeavored to show effects of this land tenure on augmenting households' farmland access. Supposedly, focus was given to agro-ecological zones of the study area assuming that households' farmland access was believed to differ in disparities of agro-ecological zones. Thus, the investigator explored households' farmland sizes, factors affecting farmland access, and sampled households' perception towards legitimacy of the current land tenure. In such a setup, this study tries to fill the knowledge gap and to add empirical evidence partially missed in the field of the study of household farmland access at broad level. The main objective of this study was to assess factors augmenting household farmland access with particular emphasis on the effects of the current land tenure on the household farmland access. It also endeavors to pursue the specific objectives such as to survey household farmland sizes, to explore the legitimacy of current land tenure, and to categorize factors determining household farmland access.

II. Materials and Methods

Research Design

In this study concurrent mixed methods research was employed to investigate variables of augmenting household farmland access. The concurrent mixed methods research was supposed for variables in this study demanded using quantitative and qualitative data collection techniques. It was also designed to substantiate and to triangulate results of the study from a variety of data sources. In relation to this, Creswell (2013) addresses that in concurrent mixed method the researcher collects qualitative and quantitative data at the same time and converges both to provide comprehensive analysis of the research problem. Thus, data were generated in May to June 2019 with the major data collection instruments including survey questionnaire, FGD, and interviews.

Study Area

This study was carried out in Arsi zone of the Oromia Region in Southeast Ethiopia which is located between $7^0$32'15"N and $8^0$32'45"N as well as $38^0$42' 30"E to $40^0$48'10"E. Asella town is the capital center of the administrative zone situated at 166 Km from Addis Ababa. The zone has a total area of 20,982 Km^2 that represents 7% of total of the Oromia Region (Arsi-Bale Road Development Project, 2005). Topographically, the Arsi zone's altitude ranges between 600 Meter above sea level (m asl) in lowlands and above 4000m asl on higher mountain peaks. The zone has diversified agro-zones of Kolla (tropical) 500-1500m asl, Woina-Dega (sub-tropical) 1500-2300m asl, Dega (temperate) 2300-3300m asl, and Wurich (alpine) above 3300m asl (Ministry of Agriculture, 1998).

Accordingly, the zone experiences 12°C to 20°C annual range of temperature and bimodal rainfall from March to April and July to October. The total annual rainfall reaches up to 800 mm in the lowlands and over 1200 mm on the highlands (Meteorological Agency of Ethiopia, 2017). As to Central Statistics Agency (CSA), (2015), total population of Arsi zone in 1987 was 1,807,902, in 1994 grew to 2,217,245 and by 2015 reached 2,637,657 of whom 1,323,424 were males and 1,314,233 were females (CSA, 2015). The same data shows that 88.4% of the population was agriculturalist consisting of 0.3% pastoralist population. The dominant

livelihood of Arsi zone is rain fed mixed smallholder agriculture. Thus, the zone is known for cool weather crops production such as wheat and barley (Mesay and Tolesa, 2011).

Sampling Techniques

In this study Arsi zone was purposively selected as the study area. Out of the 25 districts three (Dodota, Hetosa and Tiyo) were selected as study site. These have small households' land ration that resulted in land ownership problems compared to others districts (Gibson and Gurmu, 2012). Subsequently, from each of determined districts two heterogeneous rural kebeles (The lowest administrative units in Ethiopia) totally six kebeles were randomly selected. Kothari (2004) formula was employed to determining the sample sizes as given below. Indeed, 15 % of sample size was added to the calculated sample sizes. In line with this, Naing et al., (2006) advises that there must be a need for 10-20 % of sample size to anticipate the return rate of the questionnaire and completeness of the information. Thus, constant value for z at the significance level of 95% is (1.96) and the allowable error is (0.05). The expected proportion of population was identified to be over 75% by a study that makes precision (0.75) and variability (0.25) (Mengistu, 2014). The study area consisted of 4005 patriarchal and 1208 matriarchal households that give 5213 total population and the computation shows:

$$n = \frac{Z^2 pqN}{e^2(N-1) + Z^2 pq}$$

Whereas:

n= sample size, z= degree of confidence at 95%

p= precision of the population with 25%

q= 1-p or variability value with75%

N= population size, and e= acceptable error at 0.05

As the result, 241 males and 73 females totally 314 samples were employed in this study that made 6.02% of the total population of the study area. In addition to the survey, six FGDs of six members, eight KI interviews and six life history narratives were employed.

Data Analysis Techniques

The questionnaire survey was analyzed quantitatively by Statistical Package for Social Scientists (SPSS) software version 22. The descriptive and inferential statistics were employed. Certainly, 310 (98.7%) households out of the total 314 participated households promptly responded to the survey. The FGDs and KI interviews data were analyzed qualitatively by thematic analysis. Braun and Clarke (2006) substantiate that thematic analysis of qualitative method can be used for identifying, analyzing, and reporting themes of research data set.

Besides, an econometric model was employed to estimate the regression of the total farmland sizes of sampled households. Multiple regression models were employed to identify determinant factors of households' total farmland sizes. In this multiple linear regression households' total farmland size was taken as a proxy to farmland access and hence the dependent variable of the model. Thus, total farmland sizes of sample households in 2018/19

were expressed in land size measurement in hectare to understand household farmland access. The independent variables employed in this modeling were gender, age, education, household size, number of oxen, total crop production, annual income, access to credit and using agricultural technology. Accordingly, Ordinary Least Squares (OLS) was used in this regression to identify determinants of household farmland access and the explanatory variables were presented in Table 1.

Table 1 Explanatory Variables Description, Measurements and Expected Signs

Variables' names	Variables' descriptions	Expected signs
Sex head HHs	Male 2. Female	+
Age head HHs	Continuous	+
Education HHs	Grade level	-
Household size	Continuous	+
Number of oxen	Continuous	+
Total crop production	Continuous	+
Annual income	Continuous	+
Access to credit	1. Yes 2. No	+
Using agriculture technology	1. Yes 2. No	-

III. Result and Discussion

Households' Farmland Access

Results indicated that demographic characteristics of sampled households such as sex, age, marital status, household size, and education were affecting household farmland sizes. Accordingly, the sex composition data showed that the study area reveals 76.8% male-headed and 23.2% female-headed households. Indeed, results affirmed that the total mean farmland size of the entire sampled households was 1.59 ha with the standard deviation of 0.83. The mean farmland size for male-headed households was 1.62 ha with the standard deviation of 0.88 and for female-headed household was1.50 ha with the standard deviation of 0.63. The KI interview results also pointed out that female household heads were rarely accessible to farmlands commonly via land gift and inheritance compared to males.

In addition, results present that there were direct relationships between ages and farmland access as the data revealed that more farmlands were held by the higher age groups. Thus, the age group of 65 and above years held 2.26 ha mean farmland size compared to the 25-34 age group 1.12 ha mean farmland size. The significant variations between ages on total farmland sizes attributed to the previous government land allocation where the younger household heads were not entitled to land access due to their ages. The FGD results supported the same results in which the discussants forwarded that in their respective RKAs land is in the hands of older peasants than the younger. The result is reliable with other studies made in Ethiopia. The result matches with Mengistu (2014) that suggests in Arsi area rural households consist of 86% male-

headed and 14% female-headed households. It is also consistent with Mesele (2016) that supports in Ethiopia rural households are composed of 75% male and 25% female-headed households. Bezu and Holden (2014a) show that farmers 18-29 years old accounts for 21% and 24% of rural landholding in Ethiopia and Oromia Region respectively. Urgessa (2015) in his study in Ethiopia finds that old age farmers have more access to rural land.

Likewise, farmland access by marital status revealed that out of all respondents' access to farmland there were 82.3% married, 8.1% widowed as well as 4.8% divorced and single each. Moreover, FGD substantiated that marriage would become a means of rural land access by land gift and inheritance. Similarly, household size was between 1 and 13 members, and it established that farmland size per household was proportional to households' size. The Pearson correlation was positive [r = 0.32, n=310, p= 0.000].The result is parallel to Paul and Gĩthĩnji (2017) that authenticate in Ethiopia rural households average family size is 5.27 per households working on 1.71 ha mean farmland. Similarly, results confirmed that education was inversely proportional to average farmland size. Pearson correlation was used to test association of farmland access and education. Thus, test result explained that there was weak negative correlation between the two variables [r = - 0.37, n=310, p= 0.001] showing that older were less literate.

Results also revealed that the distribution of surveyed households' farmland sizes showed a minimum of 0.2 ha, a maximum of 4.5 ha, and an average of 1.59 ha with a standard deviation of 0.83. The result is smaller than the finding of the study made by Begna et al. (2015) in Arsi zone in Ethiopia that addresses 2.65 ha total mean farmland size. Conversely, it is higher than the study made by Headey et al. (2014) that state average farmland sizes for Ethiopia and Oromia Region is 0.8 ha and 1.15 ha respectively. The result implies that households in the study area on average are working on larger than 1 ha of farmland. The majority of respondents 73.4% accessed less or equal to 2.0 ha of farmlands and the remaining percentage owned 2.01 to 4.50 ha. Indeed, respondents who accessed 2.01 to 4.0 ha shared 25.6% and largely situated in the Kolla zone. Those who owned above 4.0 ha accounted for only 1% and were found in the Dega zone. The average farmland sizes for agro-zones were Kolla 1.78 ha, Dega 1.51 ha and Woina-Dega 1.46 ha. Those distinctions were explained by disparities in population density based on altitude set ups of the agro-ecological zones. The result is inconsistent with Mesay (2009) in a study made in Oromia Region in Ethiopia finds that Dega zone farmland size is larger than those of Kolla and Woina-Dega zones.

Similarly, the number of oxen owned by respondents established a diversified association with household farmland access. Thus, out of the total respondents, 17.4% possessed no ox and held 1.20 ha average farmland and 65.8% possessed 1 to 2 oxen withholding of 1.55 ha farmland. Indeed, 15.2% owned 3-4 oxen and held 2.14 ha farmland as well as 1.6% owned 5-6 oxen and held 1.83 ha farmland. The result showed that there was direct relationship between number of oxen and farmland sizes. Nonetheless, anomaly was seen that attributed to livelihood options of households. The owners of large number oxen engaged in non-farm livelihood strategies such as petty trading. The result is consistent with the finding of Tolossa (2005) substantiates that agriculture is directly influenced by the number of oxen as an extra number of oxen moderate production by contributing additional farmland access to the farming.

Besides, the total crop production of respondents showed a minimum of 0, a maximum of 258, and a mean of 38.04 quintals per household. Of the total respondents, 2.3% did not produce any crop in the survey year 2018/2019 engaged in non-farm activities. 75.8% produced 1-50 quintals, 20.3% produced 51-100 quintals as well as 1.6% produced 101-258 quintals per households. Pearson correlation test corroborated that there was a medium positive correlation between farmland access and total crop production [r = 0.43, n=310, p=0.000]. Similarly, annual income results demonstrated a minimum of 4900 Birr, a maximum of 166800 Birr, and an average of 36710 Birr. It established that 66.7% earned 10001-50000 Birr, and only 1.6% earned more than100000 Birr. The Pearson correlation coefficient indicated that there was a small positive correlation between annual income and farmland access [r= 0.25, n=310, p=0.000].

Furthermore, an independent t-test was conducted to compare annual income as well as farmland sizes among on-farm and non-farm households. The test result indicated that there was a significant difference in annual income for on-farm households (M=37781, SD=24274) and the non-farm [(M=18252, SD=11404; t (308) =6.28, p=0.000]. On top of this, the same test result also established a significant difference in farmland size for on-farm households (M=1.64, SD=.82) and the non-farm [(M=0.69, SD=0.45; t (308) =8.46, p=0.000]. Therefore, the results prove that larger farmland sizes yield more amount and higher annual incomes enable to access more farmland sizes. Indeed, small farmland size accessing households are engaged in non-farm livelihood mainly described as petty trading activities. Equally, the surveyed households' tenure arrangement showed diversified results in affecting household farmland access. In line with this, as compared to others tenure arrangements, the government allocation accounted for 41.9% and land purchased shared only 1% of the total tenure arrangements of the surveyed households as explained in Table 2 below.

As a result, Table 2 shows government land allocation accounted for 41.9% of the total land access of the area. It is supported 52.2 years mean age, 38.4% male and 3.5% female-head households. Its 56.9% owned less than 2.0 ha, and 43.1% accessed more than 2.0 ha. The result matches with the study of Hagos and Holden (2013) that affirm there is government allocation land scarce in Ethiopia. Inheritance was practiced by 12.6% of male and 13.2% of female-head households. It was the only land arrangement that favored female-head households. The result is consistent with Ege (2017) confirmed that many parents in Ethiopia favor dividing their farmland between their children whether that would be upheld by the court.

Table 2 Households Tenure Arrangements

Farmland size	Allocation	Inheritance	Gift	Sharecropping	Leased	Purchased	Total
Average	1.95	1.53	1.24	1.41	0.81	1.17	1.59
0.02-1.00	18	18	28	1	11	2	78
1.01-2.00	56	44	34	6	9	0	149
2.01-3.00	36	13	7	0	0	1	57
3.01-4.00	19	3	1	0	0	0	23
4.01-4.50	1	2	0	0	0	0	3
Frequencies	130	80	70	7	20	3	310
Percentages	41.9	25.8	22.5	2.3	6.5	1.0	100

Besides, a land gift provided farmland access to 16.8% male and 5.7% female-heads aged between 26 and 55 with 38.87 years mean age. Conversely, FGD results established that there were furtive farmland transactions for life ages under land gift arrangement. About this, results addressed that land transactions were performed secretly with decisions on prices by land sellers, land buyers, and accompanies. Currently, farmlands cost between 200 and 1000 Eth. Birr per $1m^2$ land. Once the furtive land transaction was completed RKAs would be communicated for legal land transfer to the buyer that could be maintained utilizing land gift between the beneficiaries. Results added that furtive land transactions were normally perceived and commonly practiced by the households particularly in the urban surrounding areas for RKAs officials were blamed for their encouraging of land transactions with receiving certain amounts for legalizing illegal land transactions. The result is consistent with Teklu (2004) substantiates that population growth, infrastructures, and agriculture with the overall rural economy growth favors expansion of land markets in Ethiopia in the future. Yiadom and Melesse (2014) also argue that city is not only acquiring more lands than it needs but also alarming conversion of rural lands to urban is threatening agriculture in Ethiopia.

As given in Table 2, land lease accounted for 6.5% of the farmland access as practiced more by younger respondents aged between 25 and 50 years with 34.25 years mean age. Moreover, of the total land leases, male-headed accounted for households for 89.2%, and female-headed shared only 10.8%. Certainly, two forms of land lease practices were identified. That was proved by of all surveyed respondents 51% male-headed and 11% female-headed households land leased-in as well as 6% male-headed and 3% of female-headed households land leased-out. The result matches with studies of Deininger et al. (2011) state that in Ethiopian land renters come from younger and more educated households. Ghebru and Holden (2015) also find that culture taboo forces female-heads more likely to lease out their land to male heads. Land leased-in proved scarcity of government land allocation and it was leased-out for lack of farm animals, physical inability to work, and scarcity of farm inputs.

As it was also shown in Table 2, land sharecropping accounted for 2.3% of farmland access consisted of male-headed households aged 35 to 52 years. Of the total surveyed households sharecropping-in was practiced by 32% male-headed and 6% female-head households. Sharecropping-out was also attained by 6% male-headed and 3% female-headed households. The FGD results substantiated gender discrepancies in sharecropping. FGD Participants addressed that female-headed households prefer to land contracts that do not result in conflicts so that female heads do not favor sharecropping for mostly it results in conflicts. The result matches with the study carried out by Deininger et al. (2011) that states generally sharecroppers come from wealthier, younger, and more educated household heads. It also adds that those households mainly rely on agriculture more than their counterparts.

Besides, sharecropping was accomplished to share yields among the sharecroppers based on agreements. On one hand, the sharecropper-in household would be access to farmland which minimizes land scarcity. On the other hand, the sharecropper-out could escape incapability of maintaining farming activities that could be missed for scarcity of farm inputs. Most importantly, sharecropping-out was accomplished by poor households for adverse factors such as lack of farm animals, physical inability to work, lack of seed, and other inputs. The result is

consistent with Begna et al. (2015) point out that farmers sharecrop-in and sharecrop-out based on a financial provision of production costs and farming inputs on their farmlands that could be provided through sharecropping tenure arrangements in given areas.

Households' Evaluation of the Current Land Tenure

Results on a perceptional evaluation of the surveyed households on the legitimacy of the current land tenure of the country indicated substantial finding. It indicated that majority of the respondents did not have a good perception towards legitimacy of the functioning land tenure of the country. Certainly, out of the total surveyed households 63% of the respondents perceived that the current land tenure of Ethiopia was not good tenure and 37% recognized that it was good land rule. Consequently, out of the total respondents that perceived authenticity of the land tenure male-headed accounted for 75% and female-headed households shared only 25%. This means that majority of female-headed households were not satisfied with the current land tenure and considered it is not good tenure.

Likewise, out of the total respondents that perceived authenticity of the land tenure younger heads below total mean age or 45 years old shared only 43% and those 45 and above years accounted for 57%. This means that the majority of younger respondents regarded it as not good. Furthermore, of the total respondents that perceived authenticity of the land tenure those who held 1.01-2.00 ha accounted for only 50%. This implies that half of the respondents of all farmland possessions regarded it as not good to augment land access. Besides, FGD participants pointed out that household land access and tenure security are serious problems in their localities for visible disagreements over land contracts. Indeed, the KI interview results also addressed that there was gender imbalanced to land access, tenure insecurity, and landlessness.

The result is different from the finding of Nega et al. (2003) that indicates the current land tenure of Ethiopia is perceived as good by 56% and 61% in the Oromia Region and Ethiopia respectively. It is also inconsistent with the study of Bodurtha et al. (2011) suggest that the current land tenure of Ethiopia is progressive although it needs amendments. Credibly, it matches with the result of Belay (2003) that comments on the longer time performance of current land policy show that it is not necessarily the best remedy for Ethiopia. Abdo (2013) reports review of the land policy of Ethiopia shows that the laws are quite vague in retention to the land certificate by smallholders and restitution of the land subject to lease at the end of the lease period that urges amendments in the current land policy of Ethiopia.

Determinants of Household Farmland Access

Out of the total 9 predictors in the multiple linear regressions model, seven were significant at 1%, 5% and 10% probability levels as shown in Table 3. The Multicollinearity of independent variables was also checked using VIF and there were no problems of multicollinearity. Likewise, the value of R^2 was 0.359 which means that all independent variables together explained by about 35.9% of the total variations in the dependent variable and the remaining amount attributed to other variables not defined yet. The ANOVA result showed that there was a linear relationship between the dependent and independent variables at $P < 0.01$ ($F (10, 299) = 16.73$, $P =000$) and hence, the model is fitted.

Table 3 Multiple Linear Regression Result of Households Farmland Access

Model	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
Constant		2.627	.009		
Sex	-.074	-1.458	.146	.830	1.205
Age	-.039	-.576	.565	.460	2.175
Education	-.311	-4.788	.000***	.509	1.966
Household size	.098	1.818	.070*	.739	1.353
Number of oxen	.165	2.924	.004***	.671	1.490
Total production	.218	3.509	.001***	.554	1.805
Annual income	.100	1.952	.052*	.813	1.229
Access to credit	.104	2.150	.032**	.912	1.097
Using agri. technology	-.094	-1.896	.059*	.864	1.158

The regression results showed that number of oxen owned by the household was positively and strongly correlated with total farmland sizes of households at ($p<0.01$). The result implies that extra oxen give an opportunity to access more farmlands via tenure arrangements. A study made by Baye (2017) addresses that in Ethiopia farm households mostly depend on oxen for plowing although the poor do not own an ox and the rich possess several oxen. Households' total crop production was positively and strongly correlated with their total farmland sizes at $p<0.01$. The result implies that increasing of households' total crop production during a previous good harvesting year strengthens the financial provision of households to access extra farmlands in the next years. Previous studies in Ethiopia have reported similar results evidenced that total crop production positively and significantly influence household farmland access (Gudina, 2011; Begna et al., 2015).

Households' education status as a variable captures the influence of literacy on household farmland access. It was established that less literate households possessed more farmland sizes compared to the better educated. Thus, households' education was negatively and strongly correlated with their total farmland sizes at $p<0.01$. Here what should be realized is that household heads' literacy does not directly results in accessing small farmland sizes. However, less literate farmers were able to access larger farmland sizes during previous land allocation. The finding evokes similar result with Alemu et al. (2017) supports that in Ethiopia farmers' literacy is negatively significant in association with households' farmland sizes.

The household's annual income was positively correlated with total farmland sizes at $p<0.05$ and access to credit was also positively correlated with respondent's total farmland sizes at $p<0.05$. The result repeats finding of (Mengistu, 2014) suggests that credit access facilitates rural households' financial provision for increasing agriculture productivity via extra farmland access. On the contrary, using agricultural technology was negatively correlated with respondent's total farmland sizes at $p<0.1$. It was observed that households who used agricultural technology possessed less farmland sizes. The result suggests that using agricultural technology might support farmers to be self-reliance with better production.

Household size as a variable captures influence on the person-land ratio of farmland access. It was pointed out that the larger family size households possessed more farmland sizes compared to those having smaller family sizes. However, household size was positively correlated with respondent's total farmland sizes significantly at $p<0.1$. The effect was indicated less significant than the preceding findings. Previous studies conducted in Ethiopia address that household size was positively and strongly correlated with households' access to farmland. Supporting this, Bodurtha et al. (2011) and Ambaye (2015) address that Ethiopia has a trend of family size-based government land allocation in land reforms thus household size is significant. Nonetheless, the result induces that household size is no more decisive factor in affecting household farmland access once government land allocation is maintained at household level.

IV. Conclusion

The study area is situated in Southeast Ethiopian highland one of the farmland scarce highlands. The study showed significant variations between major determinants of household farmland access on total farmland sizes. In line with this, sex showed significant variations on total farmland sizes with male-headed 1.62 ha and female-headed households1.50 ha. Age also showed important variations on total farmland sizes as the age group of 65 and above years held 2.26 ha mean farmland size compared to the 25-34 age groups' 1.12 ha. Thus, the regression model identified that number of oxen, crop production, annual income and access to credit showed significant and positive relationships with total farmland sizes.

Similarly, the agro-ecological zones revealed considerable variations on total farmland sizes as Kolla was greater than both Woina-Dega and Dega where as Dega and Woina-Dega did not show major disparity. Results established that out of the total household farmland access of the surveyed area government allocations 41.9%, inheritance 25.8%, 22.5% gift and land lease 6.5%. Indeed, the study showed that the current land tenure faced illegal tenure arrangements by illicit land transactions through furtive land gifts. The study found that the current land tenure was recognized little as good land rule for augmenting household farmland access.

V. Recommendation

The following suggestions were recommended as panacea to the problem of augmenting household farmland access in the study. The female-headed households should be empowered by the government to improve their farmland access. The younger-headed households must be encouraged by the development institutions with such as provision of extra oxen and credit service to improve their farmland access. The farming community should affirm to legal land rules in maintaining their tenure arrangements. The local government should work according to the legal land rule to liquidate illicit land markets. All level governments should strictly control alarming illegal changes of farmlands to urban areas via furtive land transactions.

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2.5. Challenges Inhibiting Employment Creation Through Small Enterprises in Addis Ababa and Dire Dawa Cities, by Mesfin Seyoum

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Abstract

The study focused to explore challenges inhabiting employment creation through small enterprises in Addis Ababa and Dire Dawa cities. Despite the apparent significance and policy initiatives introduced by Ethiopian governments to accelerate the growth and survival of small enterprises, their performance has remained disappointing as their mortality and liquidation rates are very high. The study has used exploratory and descriptive methods to identify the challenges where most small enterprises suffer from what is described as 'entrepreneurial burnout' as a result of less commitment of government project, private organizations and public enterprises to outsource at least 10% of their work to small enterprises though promised by legislation 27/2009, youth attitudes to start small enterprises, lack of credit facility from formal financial institutions and inefficient use of revolving funds. Besides, complex procedures of financial institutions and high prior savings requirement were the major hurdles to get credit from financial institutions. Partnership as forms of business organizations were not successful as there are no equal responsibility, mistrust, and conflicts of interest among members, more over there were high rent of house, lack of market linkages and training for business operators. The study recommends strong commitment and coordination between different stakeholders so that the youth engaged in small enterprises by establishing forums of youth employment creation guided by city administrators.

Keywords: Small enterprises, unemployment, entrepreneurship

I. Introduction

With increased urban population dynamics in Sub-Saharan Africa, policy makers and donors have increasingly recognized the roles of small enterprises in creating employment and income generation with the dual objective of enhancing economic growth and sustainable development (Beck and Levine, 2003). The fact that there are rapid rural-urban migrations and that urban centers are proving inadequate in absorbing these migrants, small enterprises are trusted in providing employment opportunities.

The Government of the Federal Democratic Republic of Ethiopia has recognized the promotion and development of small enterprises as important vehicles in addressing the challenges of unemployment, economic growth and equity (Gebeyehu and Assefa, 2004).

Unless addressed comprehensively, urban youth unemployment has adverse consequences for society as well as the economy. The fact that the youth are the most powerful political force in the country, the past years witnessed numerous political protests in Ethiopia, and youth was

always at the center of mass political movement. Street protests have become a popular form of political self-expression for young Ethiopians across the country. Young people use streets as a forum for expressing their political and social discontent. According to Goedhuys (2002) youth unemployment remains a major source of political instability in Ethiopia. Unfortunately, mass protests can become a convenient force for manipulating public opinion, undermining the foundations of political stability in the country.

This seems to be the worst scenario for Ethiopia, a country that has just entered a new stage of political and historical development. Despite the apparent significance and policy initiatives introduced by Ethiopian governments to accelerate the growth and survival of small enterprises provision for urban employment and income generation, their performance has remained disappointing as their mortality and liquidation rates are very high (Gebeyehu and Assefa, 2004). Eshetu and Eleke (2008) argue that regardless of the anticipated contributions of small enterprises to economic vitality, failure and bankruptcy has plagued these enterprises in most part of Ethiopia.

The objectives of the study are to:

1. *Identify the challenges that hinder youth employment creation in urban Ethiopia.*
2. *Assess major interventions that are being done in solving urban youth unemployment.*
3. *Recommend possible policies, strategies and interventions that could address the constraints and shortcomings of the enterprises in the urban centers.*

II. 2. Methodology

Types of Research

The research used descriptive approaches to interpret and reduce the data into a summary form in tabulations, charts, bar graphs and measures of central tendency (mean and standard deviation).

Data Sources

The study used both primary and secondary data, mainly qualitative and also quantitative data for triangulation purpose.

Sampling Procedures and Sample Size

The study used purposive sampling to select the region and the specific study sites (Addis Ababa and Dire Dawa) as they are cities with a relatively high concentration of small enterprises.

In the case of the study districts, Akaki Sub City was purposively selected from Addis Ababa to enable the researcher describe the challenges of small enterprises in detail. In the same manner, 01 *Kebele* (District) of Dire Dawa was selected for further survey. Furthermore, different small enterprise sectors (trade, service, urban agriculture, construction, and manufacturing) were taken purposefully as strata.

With regard to sample size, Slovin formula was used to determine the minimum sample size at 97% level of confidence and at3% margin of error (e):

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

where 'n' is the minimum sample size, 'N' is the total number of the study population and 'e' is the level of precision.

Table1: Small Enterprise by Strata and Proportionally Selected Sample Size

S. no	Small enterprise (Strata)	Small enterprise by sector(strata) in Kality	Small enterprise by sector(strata) in Dire Dawa	Proportionally selected sample size		Sub Total
				Kality	Dire Dawa	
1	Trade	1200	1080	283	255	541
2	Service	161	152	38	36	73
3	Manufacturing	395	297	93	70	159
4	Urban Agriculture	65	108	15	26	42
5	Construction	79	65	19	15	32
Total		1900	1702	448	402	850

Source: (Office of MSE from each study Sites, 2019)

Method of Data Collection

Questionnaires

A questionnaire consisted of a number of questions that are arranged in a definite order on a form or set of forms and sent to the persons concerned with a request to fill in the answers in the spaces provided (Cothari, 2004). In these regard 850 questionnaires were distributed to the respondents. The questionnaires had a definite, concrete and predetermined questions and was presented with exactly the same wording and in the same order to all respondents (Bryman, 2004).

Key Informant Interviews (KII)

It was conducted with **16** officials from all three levels of management in each study sectors. These interviews will be used mainly to secure vital as well as supplementary information that respondents will identify as challenge to the implementation of employment promotion policy in the study cities and to the region at large. The researcher himself has conducted the structured interviews with the selected interviewees.

Focus Group Discussions (FGD)

The discussions was held separately with **10** selected members of different level managers in each study cities and **15** employees from each sector of public sector in both cities; with **10** representatives from people with disability and with youth and women associations which is totally 35 participants. Members of all groups was representative in terms of sex, age, religion and ethnic groups. These discussions will aim to elicit different views regarding policy of employment promotion and challenges of small enterprises in the study sites.

Secondary Data

The study was used published sources including journals, books, and research documents. Such data are available from government offices, technical and trade journals, books, magazines, newspapers, reports and publications from various institutions.

Validity and Reliability Analysis

The reliability test is an important instrument to measure the degree of consistency of an attribute, which is supposed to be measured. **Cronbach's alpha** is one of the most commonly accepted measures of reliability. It measures the internal consistency of the items in a scale. It indicate that the extent to which the items in a questionnaire are related to each other. The normal range of Cronbach's alpha coefficient value ranges between **0-1** and the higher value reflects the higher degree of internal consistency.

In addition to using the various techniques such as interviewee, FGD, observations, content validity index will also be used using the following formula:

CVI= Total number of items rated by all respondents

Total number of items in the instrument

According to Amin(2005) a content validity index of **0.7** and above will qualify instrument for the study.

Improving Reliability

- *Conceptualizing the theories and pilot tests was used to improve reliability*

Methods of Data Analysis

The data analysis was based on the data collected, compiled, and tabulated from primary sources and supplemented by secondary sources. In this way, periodic analysis of the data provided a direction for further data collection, especially regarding what questions should be taken.

III. Review of Literature

Definitions and Concepts

Youth

The term 'youth' follows the UN definition, and is defined as those persons between the ages of 15 and 24 years as opposed to the Ethiopian (CSA) definition of those persons between the ages of 15 and 29 years.

Small Enterprises

Ishengoma and Kappel (2008) categories small enterprises as survivalists, trundlers and flyers. They argue that survivalists are those enterprises that keep the business owner alive although the income that is provided by these enterprises may be poverty line or even sub-poverty line. Trundlers are defined as enterprises whose turnover is static. Flyers are defined as enterprises

owned by true entrepreneurs who have taken up the business because they see opportunities for growth.

An operational definition used for the purposes of this study is the one offered by the Ministry of Trade and Industry in Ethiopia. This defines an enterprise according to the number of employees and paid up capital as stipulated in the following table.

Table 2: Classification of Small Enterprises

Level of the Enterprise	Sector	Total Asset	Human power
Small Enterprises	Service	50,001–500,000 birr (USD 2,777–27,777)	6-30 individuals
	Industry	100,001–1.5 million birr (USD 5,555–83,332)	

Source: FDRE (2011)

Theoretical Framework

The I/O model asserts that the performance/growth of enterprises is primarily determined by external factors such as business development service, government policy and legal environment, training, finance, market, suppliers, buyers and competitive rivalry among small enterprises (Abdullah and Baker, 2000). The Resource-Based Model emphasized that managerial skills and business knowledge are important factors that promote the survival of small enterprises and enable them to remain competitive in the global market economy (Goedhuys, 2002). Since the success of small enterprises are the function of both hypothesis, this study will capitalize on the core points of the two models.

Major Factors for Small Enterprises Development

Age of the Business and Owners

Studies of small enterprises have recognized that business age plays an important role in an enterprise's performance and growth (Charmes, 2000). Jovanovich (1982) argue that younger businesses grow faster than older ones because of the willingness of their managers to take risks. Theorists explain the influence of the age of owners/managers. These arguments are based on the belief that younger owners/managers have the necessary inspiration, energy and commitment to work and are more likely to take risks. As a result, firms that are run by younger owners/managers tend to have greater growth probability than those run by their older counterparts.

Previous Experience

Morrison (2000) argues that there is a significant relationship between previous experience of the owners/managers, particularly prior small enterprise experience and firm growth, indicating that growth is positively influenced by the previous experience of the owners/managers. Other

studies confirm that in general, small enterprise owners/managers with managerial and sectoral experience tend to correlate with greater growth (Dereje**,** 2008).

Location

Geographical locations have implications for access to customers and other resources such as finance, trained labor, distribution, and transport logistics. Those enterprises that operate in commercial districts or on roadsides show greater growth rates than those based in homes, or far from main roads (Liedlholm, 2002).

Access to Finance

The majority of entrepreneurs start their businesses with little or no support from formal financial institutions because of limitations in the credit markets (Barney, 1991). Furthermore, the low returns expected from small loans provided to small enterprises have jeopardized their relationship with formal financial institutions. As a result, small firms start their businesses with their own savings, supplemented by borrowing from friends and relatives.

Access to markets

The CSA's report (2003) on Ethiopia, which is based on 31,863 small-scale industries all over the country, indicates that 48% of all establishments faced difficulties related to demand or access to markets, and weaknesses in or total absence of appropriate marketing channels, exhibitions, trade fairs and display centers (Andualem, 1997).

Work Premises

The obstacles experienced by entrepreneurs running small enterprises include unavailability of work premises, high rent and poor access to good quality business infrastructure (Liedholm, 1992). According to the CSA's 2003 survey result, problems associated with working premises are mentioned as one major constraint hindering the smooth performance of small enterprises (CSA, 2003).

IV. Results and discussion

The analysis and discussion of the results were carried out using a descriptive research design, including statistical tools such as bar graphs, pie charts, tables and other summary statistics such as mean and standard deviation. For the purpose of comparisons, the researcher also provided a general picture of the sample respondents in both study site (that of Addis Ababa and Dire Dawa city on aggregate terms).

Demographic Characteristics of Business Operators

This section discusses the general characteristics of the small enterprises as captured from their responses. The variables dealt with in this section include the sex and age of business operators, family background, their level of education and previous business experience.

Age Of Business Operators

As shown in the Table 4.1, the minimum age of operators in small enterprises was 23 years in Dire Dawa while it was 20 years in Addis Ababa while the highest age was 33 and 35 in Dire Dawa and Addis Ababa respectively. The average age of respondents in Dire Dawa was 26.1,

while in Addis Ababa it was 27.8. This indicates that most of the small enterprises were owned and run by a young labor force, meeting one of the objectives of the government; creating employment opportunities for the youth although this is not the only factor for the success of small enterprises in terms of earning them good profit for further investment.

Table 3: The profile of business operators in terms of age

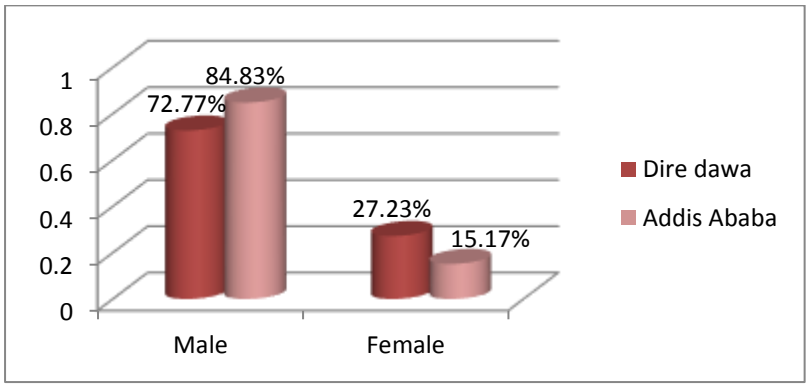
		Age			
Study Sites	Obs.	Mean	St. Dev.	Max.	Min.
Dire Dawa	448	26.1	7.5	33	23
Addis Ababa	402	27.8	32	35	20

x The numbers in brackets indicate percentages.

Source: (Own Data, 2020)

Gender of Business Operators

Figure 1: Gender compositions of business operators



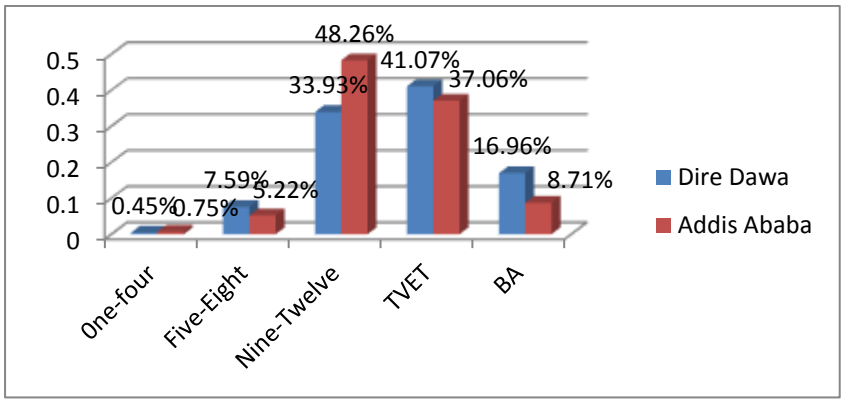
Source: (Own Data, 2020)

The result clearly revealed that male-owned/managed small businesses out numbered those owned or managed by women.

The focus group discussions with female business operators disclosed that the male domination of small enterprises ascribed to the societal attitudes which considered women inferior and categorized their role to bear more family responsibility at home rather than engaging themselves in business. These suggest that women business operators encountered operational and strategic impediments where their participation and success in small enterprises seems a distant reality unless there are effective interventions.

Education of business operators

Figure 2: Educational level of business operator

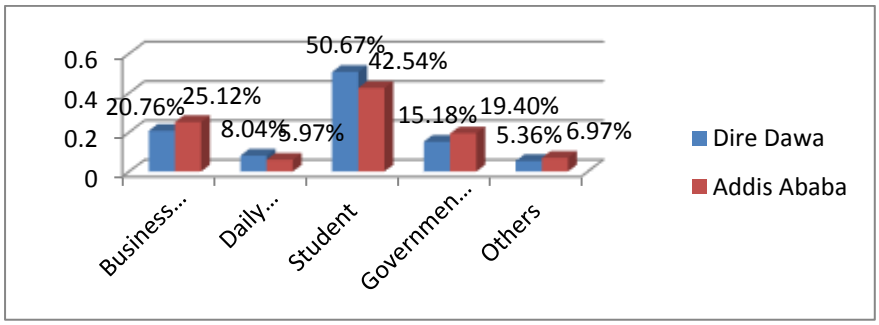


Source: (Own Data, 2020)

The results of the survey indicate, see Figure 4.2 above majority of the operators are educated, that is, 152 (33.9%) in Dire Dawa and 194 (48.3%) of them in Addis Ababa fell in the category of 'nine to twelve 'grade while 184 (41.1%) and 149 (37.1%) of business operators are graduated from TVET in Dire Dawa and in Akaki sub city of Addis Ababa respectively. Furthermore, 76(16.96%) of business operators in Dire Dawa and 35(8.71%) of them in Addis Ababa have BA from the higher institutions. These imply that majority of operators of small enterprises in the study area have the skills that might have been obtained from higher education.

Previous Occupations of Business Operators

Figure 3: Previous occupations of business operators



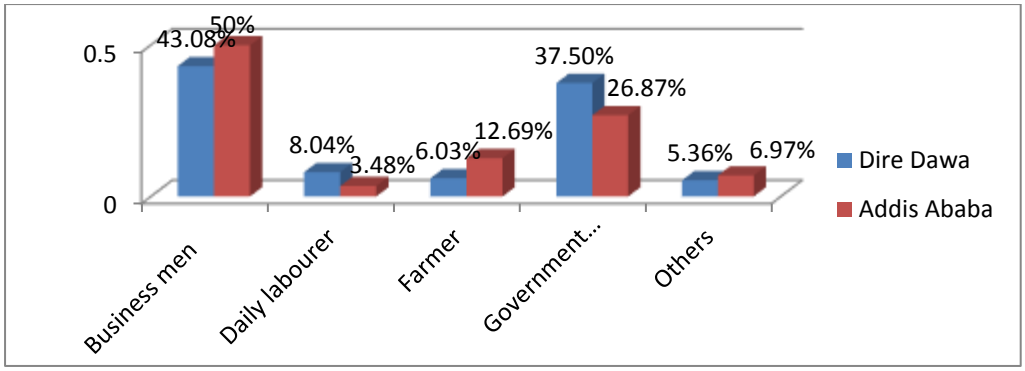
Source: (Own Data, 2020)

As shown in the Figure 4.3 above, the majority of the entrepreneurs lacked relevant experience that might have helped them improve the performance of their enterprises to expand and increase employment opportunities for others. These indicate a need for support of business operators in all sectors in the form of training and other business development services.

Family Background

Business operators in the study sites were asked about their family's occupations in order to establish whether this was related to their current business activities.

Figure 4: Family Backgrounds of Business Operators



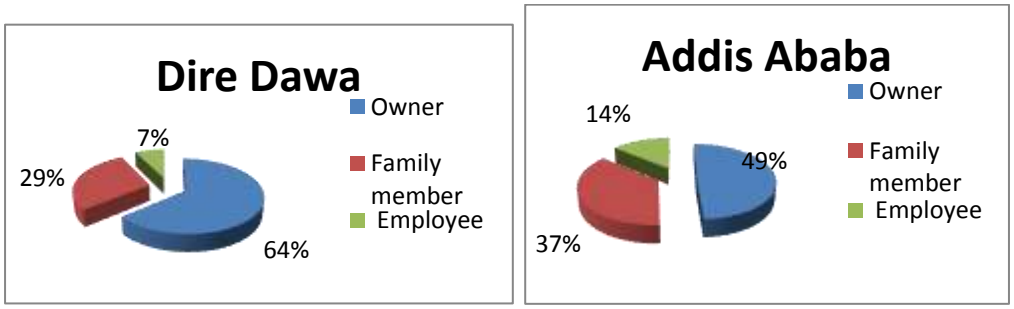
Source: (Own Data, 2020)

The Figure 4.4 above clearly reveals that 50% of business operators in Dire Dawa and 62.5% of them in Addis Ababa have families that lack business skills that could contribute to the business performers of the operators. The implication of the finding is that a significant majority of the business operators' family in these studies lacked the business related experience that can contribute to better performance of business operators. This underlines the need for concerned bodies to identify the shortcomings of business operators and build their capacity to enable them become more competitive and creates employment opportunities to the youth.

Status Of Operators in The Enterprises

The respondents were asked about their status in their enterprise, that is, whether they are the owner, family member or employees.

Figure 5: Status of operators in the enterprises



Source: (Own Data, 2020)

Figure 5 above indicates that the majority of business operators in both study sites were operated mainly by the owners themselves and their contributions to employment and income generation for individuals other than owners/founders of the business was very insignificant. This also suggests that once the enterprises had been established, they could not able to expand and boost employment opportunities for the job seekers. According to the interviewees in Addis Ababa, although the lending schemes, including the revolving fund is arranged for a group of five and more people with the intention of creating more jobs, actually there are one

or two people working on the site against the intention of the government that aimed to create employment for many youths.

Age of Small Enterprises

After the fifth year, as shown in Table 2 below, most entrepreneurs suffer from what has been described as 'entrepreneurial burnout' in the literature, with a declining enthusiasm for business. Entrepreneurial burnout is a situation that causes operators of small enterprises to lose interest in the business venture. The findings imply that the business operators in both study sites who were at the start-up stage gradually began to face serious challenges. The interviews conducted with selected business operators in both study sites confirmed that their business performance was in decline.

Table 4 Age of Small Enterprises

Years of establishment	Age of small enterprise	Dire Dawa	Addis Ababa	Total
2017	3	178 (39.7)	168(41.8)	346(40.7)
2016	4	103 (23)	98(24.4)	201(23.6)
2015	5	67 (15)	67(16.7)	134(15.8)
2014	6	39 (8.7)	26 (6.5)	65(7.6)
2013	7	25 (5.8)	16 (4.1)	41(4.8)
2012	8	17 (3.8)	13 (3.2)	30(3.5)
2011	9	12 (2.7)	9 (2.2)	21(2.5)
2010	10	7(1.6)	5(1.2)	12(1.4)
Total		448(100)	402(100)	850(100)

Source: (Own Data, 2020)

Legal Forms of Business Organizations

The respondents in the study sites were asked about the legal forms of their businesses and the challenges associated with each legal form.

Figure 6: Legal forms of business organizations

Source: (Own Data, 2020)

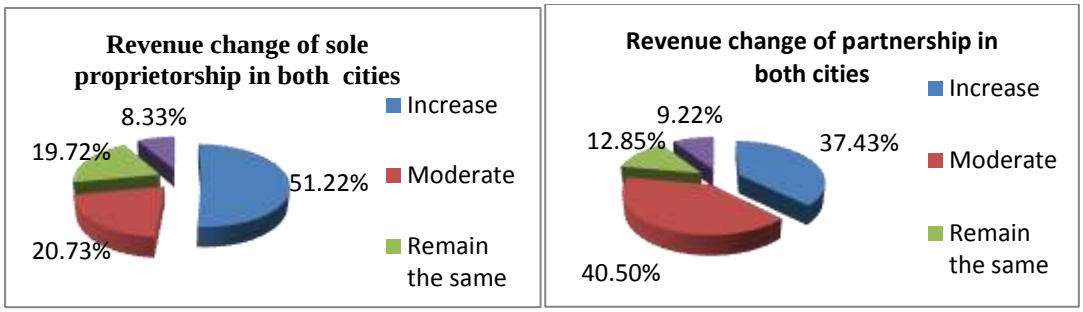
No matter how the government claim to create employment opportunities to the youth through group lending and in the form of partnership, the majority of the small businesses were sole

proprietorship. This contradicts Scase's (2000) argument that a business where the owners/managers enjoy partnership/limited liability has greater incentive to pursue risky projects and therefore to expect higher profits and growth rates than other forms of business.

According to the focus group discussions with operators of business in small enterprises, complex and lengthy procedures, mistrust to take equal responsibility have deterred entrepreneurs from pursuing partnerships.

Revenue Change of Business Operator

Figure 7: Revenue change of business operator



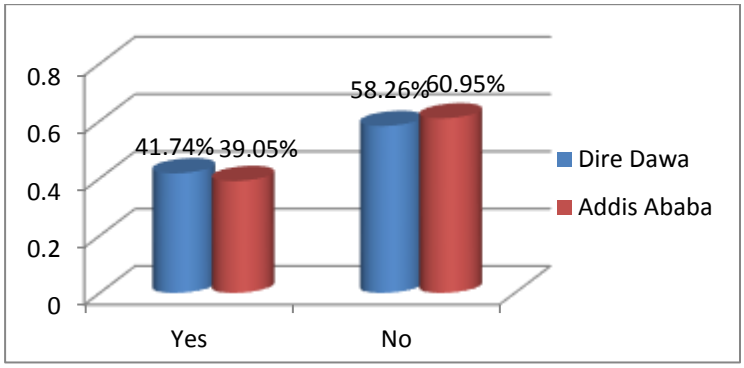
Source: (Own Data, 2020)

The interviews with the operators of small enterprises in both study sites who were in partnerships revealed reasons for the drop in their revenue or for the fact that their income had remained the same during their operations. They confirmed that partners in the business were not equally responsible for its affairs. Furthermore, mistrust existed among the partners, which sometimes led to disputes. They disclosed the fact that there were conflicts of interest as partners prioritized or engaged in their private affairs, neglecting common affairs and problems in the enterprises.

Access of Credit Facility from Financial Institutions

Starting own business requires initial capital. Business operators had been asked whether they have received credit from any financial sources.

Figure 8: Credit access by business operators



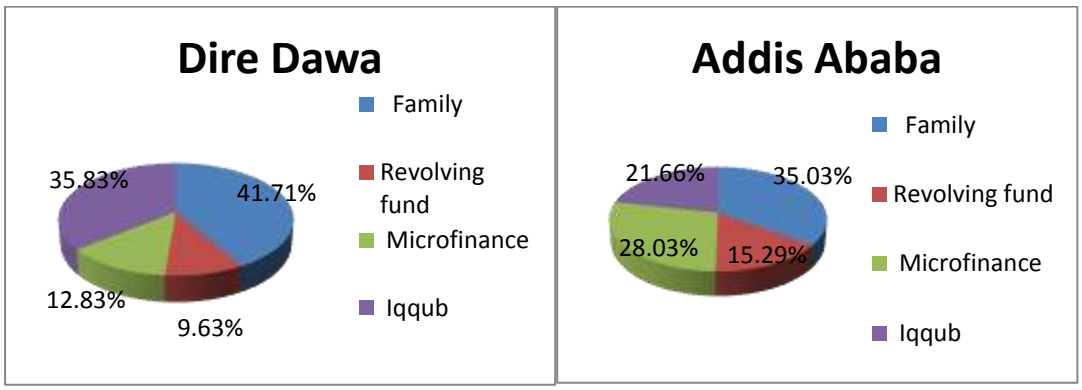
Source: (Own Data, 2020)

The survey results were consistent with the argument of Abdullah and Baker (2000) who point out that small firms are still short of credit despite the fact that there are many indigenous financial institutions available that extend credit facilities. The focus group discussions with entrepreneurs from the various sectors of small enterprises in the study sites revealed that they had poor access to credit for the fact that creditors have no trust on the ability of business operators to pay their debts.

The Sources of Start-Up and Expansion Capital

Business operators were asked their source of finance in order to capture information about the relative importance of the various sources of startup and expansion.

Figure 9: The sources of start-up and expansion capital



Source: (Own Data, 2020)

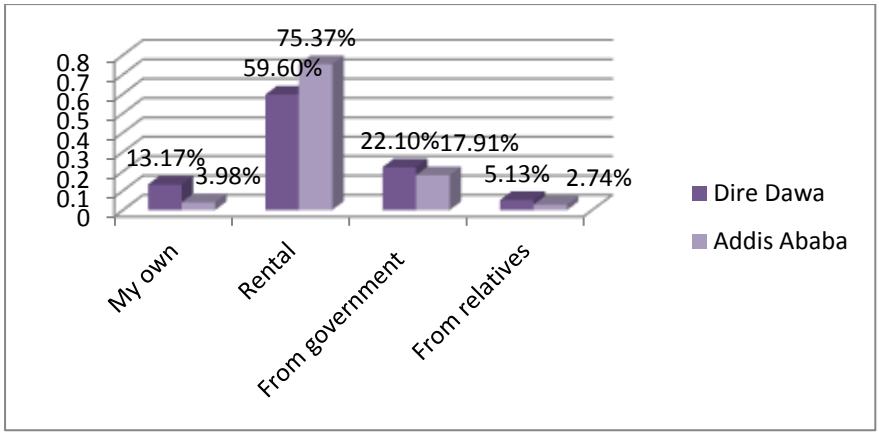
As can be seen from Figure 4.9 above, the majority of the start-up and expansion capital came from family. According to the official of employment creation and food security in Dire Dawa, 55mil. ETB is allocated for revolving funds although the majority of this amount is not returned.

On the other hand, interviews with owners/managers of small enterprises in both study sites revealed that the majority used informal sources of finance as formal financial institutions were not willing to meet their credit needs. The reluctance of financial institutions to introduce innovative ways of lending money, the rudimentary nature of the capital market and the high interest rates associated makes it difficult for the majority of small enterprises to borrow money from formal financial institutions. In this regard, the government could play a constructive role by linking the Iqqub schemes with formal money lending institutions. A strategic partnership between Iqqub schemes and formal financial institutions would be mutually beneficial to small enterprises and formal financial institutions.

Sources Of Business Premises

The scarcity of business premises in the study areas have resulted in the dissolution of partnerships and organized groups before the premises became available.

Figure 10: Sources of business premises



Source: (Own Data, 2020)

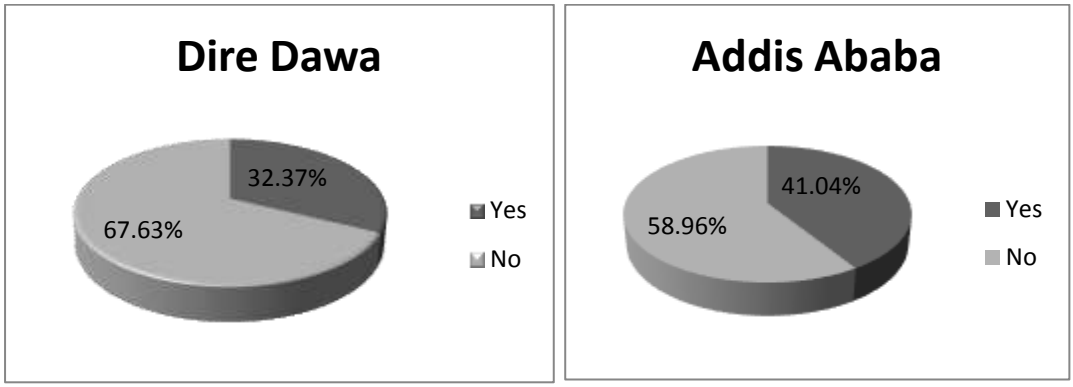
Figure 10 above shows that the majority of the respondents have operated their businesses from rented houses. This led to further frustrations and loss of confidence among organizers and operators of small enterprises. In cases where operators had obtained land, most were not working on the particular land because of the inconvenience of the location and luck of infrastructure.

The focus group discussions with operators of small enterprises in Addis Ababa made it clear that the rent of houses was too high and the current workplace obtained from the government was not convenient for business.

Market Linkages

One of the most common challenges facing the growth of small enterprises is the weak market linkages for the product or service of small enterprises.

Figure 11: Market linkages for small enterprises



Source: (Own Data, 2020)

As indicated in the above Figure 11, very insignificant number of small enterprise operators have market linkages.

FGD in both study cities have argued that incentives have been put in place by finance department so that private investors, government project and public enterprises should

participate operators of small enterprises through subcontracting and outsourcing some of their activities. They were expected to buy the output of small enterprises to create market opportunities to them. However, only housing agencies have attempted to create market linkages with small enterprises

V. Conclusions and Recommendations

Conclusions

Employment creation through MSE is not up to expected as there are no strong coordination between all stakeholders which hampers the smooth functioning of the enterprises. According to the legislation 27/2009, government project, private organizations and public enterprises are expected to outsource at least 10% of their work to small enterprises though these was not happening.

Concerning access of credit facility from financial institutions, a majority of the respondents reported that their start-up and expansion capital came from family and own saving using *Iqqub*. The official of employment creation and food security in both study cities have also confirmed that revolving funds are not so functional as the previous money borrowed is not returned.

With reference to sources of business premises, the majority of the respondents have operated their businesses from rented houses. In these regards, the interviewees from the operators of small enterprises in both study cities disclosed that shades given from government are not completed on time and can last for 5-6 years on construction. There were also instances where business operators were forced to use majority of the money received from revolving funds for constructing production and market places, significant amount of their loan for installation of electric power, to buy container and for other infrastructure development though these was supposed to be prepared by the government.

Recommendations

- *A* strategic partnership between *Iqqub* schemes and formal financial institutions would be mutually beneficial to solve financial problem for startup and expansion of small enterprises.
- Strong supervision, monitoring and commitment so that 10% of private and public project's activities outsourced to the youth engaged in small enterprises
- Revolving fund should also be allowed for sole business operators as they have proven success than business partners

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2.6. Rural-Urban Linkages under Irrigation Farming Scheme: The Case of Merawi Town and the Watershed of Koga Irrigation Project, Ethiopia, by Dereje Tessema [1] & Yalganesh Tilahun [2]

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Abstract

Rural–urban linkages can play a vital role in the generation of income, employment and wealth for both spatial units. The paper examines urban rural linkages under irrigation schemes by taking case of Merawi Town with Koga Irrigation watershed region. In line with this, the study intended to analyze the forward and backward production linkages, consumption linkages and marketing linkages of the case areas. To address the intended objectives, both qualitative and quantitative data were collected, which were collected from farmers, traders, urban residents, and government officials who directly have role in the rural-urban linking process. The findings disclosed that the level of rural-urban linkage in the form of production linkage in the study area was very weak. The backward production linkage was relatively better than the forward production linkage. Availability of agricultural inputs in the nearby town was the main factor for the existing backward production linkage. The backward production linkage in the study area was reflected mainly through farmers' use of herbicides and insecticides and irrigation equipment's supplied from Merawi town. Based on the findings, to foster the existing rural-urban linkage of the case area, there should be updates on marketing system improvement, expanding agro-processing industries, providing basic and farm related infrastructures, improvement in supply of agricultural inputs and protect eucalyptus tree invasion over the irrigation-shade area.

Key words: Urban-rural, Forward linkages, backward linkages

I. Introduction

Rural-urban linkages play an important role in the ways in which livelihoods are constructed. However, while rural and urban relations should be seen as mutually reinforcing, generalizations on the nature of rural-urban linkages across different locations and in terms of how they affect different groups must be avoided. Within specific regional contexts, while there is potential for rural-urban linkages to contribute to poverty reduction, this will only occur in a climate in which policies, social relations, institutions and incentives allow an equitable

access to the assets (physical, natural, social and financial) necessary to support sustainable livelihoods (Tacoli, 2004).

According to prof. Tegegn, (2001), Regional development cannot be realized with enhancing sector development and rural/urban development only, but by linking the integrated development of urban and rural areas.

Spatially, urban rural linkage has two components; the urban component that impacts rural developments, and the rural component that impacts up on the urban one. The first type of rural urban linkage is envisaged through the impact of urban centers on rural hinterlands. This type of linkage has been described in different theories and models of the regional development. The linkage created by the impact of urban areas upon their rural hinterlands has been described in different theories.

One dominant theory to do so is the functional regional development theory. This theory is developed by Hinderik and Tutu (1998) and the core of its premise is regional development is brought by industrialization and urbanization, which the trend reinforce the agricultural sector development to the rural hinterlands. It concludes that modernization through socio economic development is for rural areas is attained if and only if the urban areas are priory gets developed and industrial expansion. Functional regional development for regional over all development is elaborated through two strategies: growth center strategies and rural services center strategies (Tegegn G, 2003).

The growth center strategy is derived from Perroux's growth pole theory and believes industrialization of urban areas sprays modernization light to the hinterland rural areas. Because industries have potential of creating farm of job for farmers and produce farm imputes which increase agricultural productivity. This strategy advocated urban areas are a means to bring rural development.

The rural service center strategy again describes small urban centers are engines of development for themselves and their rural hinterlands. They are service centers from which the farmers can get access of information, farm imputes like fertilizer, to sell their extra far products, and to have social and administrative services. In this regard, functional regional development theory advocates those urban areas takes the lion share of regional development by bringing mutual growth to themselves and their rural farming communities.

The other dominant theory that advocates the impacts of urban areas on rural ones is agropolitan theory. This theory again gives weighted share of impact in regional development is laid on small urban areas because of their proximity to rural areas. Under this thought, rural areas are natural reserves to sustain the ecosystem but urban areas are places of wealth accumulation and centers of services to rural farming communities. Accordingly, linking the two geographical regions is crucial to sustain the growth of urban areas, so as to created natural exposure and bring ecological balance to the region. So, regional development is attained by economic contribution of urban areas and natural sustainably share of rural areas.

The second type of linkage in the rural-urban interaction is observed under the impact of rural areas on the urban centers and non-agricultural activities. The theories under this option

describe that the impact of rural development bypass the impact of urban areas on rural. The theoretical starting point in this line is The New Economics of Growth by Mellor cited by Tegegn (2001). The central point of the argument is that a boom in food grain production would stimulate growth in agri-related sectors (trade, transport, services, etc.) and expansion of industrialization which brings urbanization.

This trend gives emphasis that rural development will become the sole reason for the establishment and development of urban areas. The theory trace back to the evolution of cities as initiated by the development of agriculture. Ancient urban centers in Asia, Africa, America and Europe had been evolved after the production of extra agricultural products.

This theory again advocates the development impact is assured by creating conducive linkages between the two special units. In this regard, the linkages most frequently cited are forward consumption linkages, backward production and forward production linkages (Tegegn, 2001).

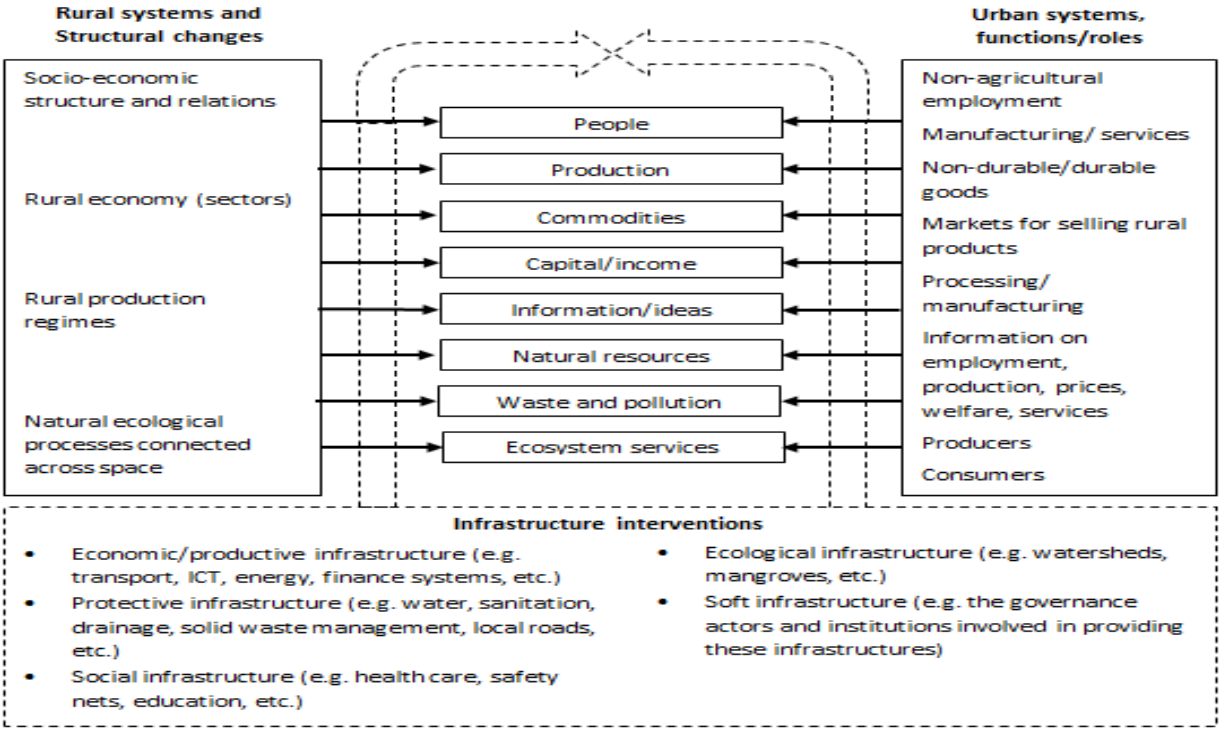
Forward consumption linkages are resulted when rural inhabitants expend agricultural products to have access of locally produced goods and services in urban areas. Priory, this situation is bring up when there is agricultural productivity and have extra product to buy such services and goods. Meanwhile, the urban inhabitants whose economy is depended on non-agricultural products could expand market for their goods and services. In such a way, urban rural linkage is created by high impact of rural areas for the linkage.

The other one in rural impact on the urban development is by establishing backward production linkage. This type of linkage is created when agriculture could absorb inputs produced by industries of nearby urban areas. Small urban areas, especially in developing countries are not expected to have industrial potential to produce farm machines like tractors and combines, and fertilizers too. In this regard backward production linkage is not effective to impact upon the development of urban areas by rural counterparts.

Forward production linkage is the other type of linkage that describes how rural development impacts upon the urban through creating linkages. This linkage type refers to the local processing of agricultural outputs. If the urban areas are well organized by being center of service and goods for the demands of hinterland agricultural community, the stage shows that accumulation of wealth because of agricultural productivity and reserve level raw materials to insist demand of the service providers to start establishing industries that can process locally produced agricultural products. In this way, high level of interaction between the rural and urban geographically interacting regions is established: the rural areas become the source of industrial inputs and urban areas become sources of agricultural inputs. This argument reveals that high level of socio economic and special linkages between urban areas and the rural hinter lands is the means to drive regional development.

Linkage studies have argued that a number of factors are important in affecting the nature and strength of linkages. The first requirement for a dynamic rural sector is a sustained growth in agricultural output (Tegegn, 2001). Efficient agricultural production will not get effective unless there are strong socio economic and physical linkages with urban areas. Simply having surplus agricultural production cannot assure the development of the area/region, because they

should at least get a market to sell out the products and get access of goods and services produced in urban areas. For example rural areas which have good potential of agricultural productivity and located very far away from urban areas, could not be equally developed with the same potential areas near to urban centers. This is because, the former one lacks to create accessibility of their surplus product while the latter has. Generally, it is possible to conclude from the above theories that urban rural linkage is means for regional development. Diagrammatically, rural urban linkages can be shown as;



Source: Akkoyunlu, S. (2015)

Rural-urban linkage studies in Ethiopia are limited. There has not been a very systematic and comprehensive study of rural-urban linkages in the country. The rural-urban linkages in Ethiopia are usually manifested through the flow of agricultural and industrial goods and services, capital and labor, and through the sectoral linkages. In addition to these economic linkages, there are several social and institutional linkages. The flow of grain and livestock between rural and urban areas, which represent the major form of agricultural goods flow, is constrained by several factors including poor marketing infrastructure, subsistence production levels, poor transport infrastructure, poor market information, limited storage capacities, etc. The unbalanced spatial distribution of towns as well as their size, have also constrained the flow of industrial and manufactured goods from urban to rural areas. The flow of labor is also constrained because of low absorptive capacity of urban centers and poor transport infrastructure (Assefa, 2007).

Megerssa (2007), in his study on rural-urban linkages in Gimbi and its hinterlands, West Wallaga zone, come up with the findings that the production-consumption linkages are generally weak. This is mainly because of the limited production and consumption capacity of the farmers. Hailu and Wubshet (2004), the rural-urban linkages in Amhara region are poorly

developed due to the large subsistence nature of agriculture and low development of manufacturing industries in urban areas.

Eshetu (2007), studied rural-urban linkages under pastoral and non-pastoral farming system in Fentale and Minjar-Shenkora Weredas, reported that the Minjar-Shenkora has relatively strong background production linkages than the Fentale woreda. Regarding the market linkages the same is true for both Weredas. That is, the pastorals have relatively weak linkage than the non-pastorals. Tassew (2002), in his study of farm/non-farm income linkages in Northern Ethiopia reported that agriculture has limited backward and forward production linkage in Tigray region. However, the consumption linkages are found to be relatively stronger than the production linkages.

Study of rural-urban linkages conducted in the region mainly focus on identifying roles of urban centers to support the development of their hinterlands with less emphasis to backward and forward production linkages, and their connection to the sustainable livelihoods of the rural households. This study is expected to fil1 this gap by assessing the role of rural-urban linkages in Merawi Town and its hinterlands under Koga Irrigation agricultural area.

In general, the study seeks to investigate how agricultural irrigation projects shape the linkage and bring regional development. The research is intended to answer the question; "What seems like the scenario of rural-urban linkages found presently between Merawi Town and Koga Irrigation water shade regions, and the respective roles played by the spatial units for local level development?" by giving emphasis on production, consumption and marketing linkages.

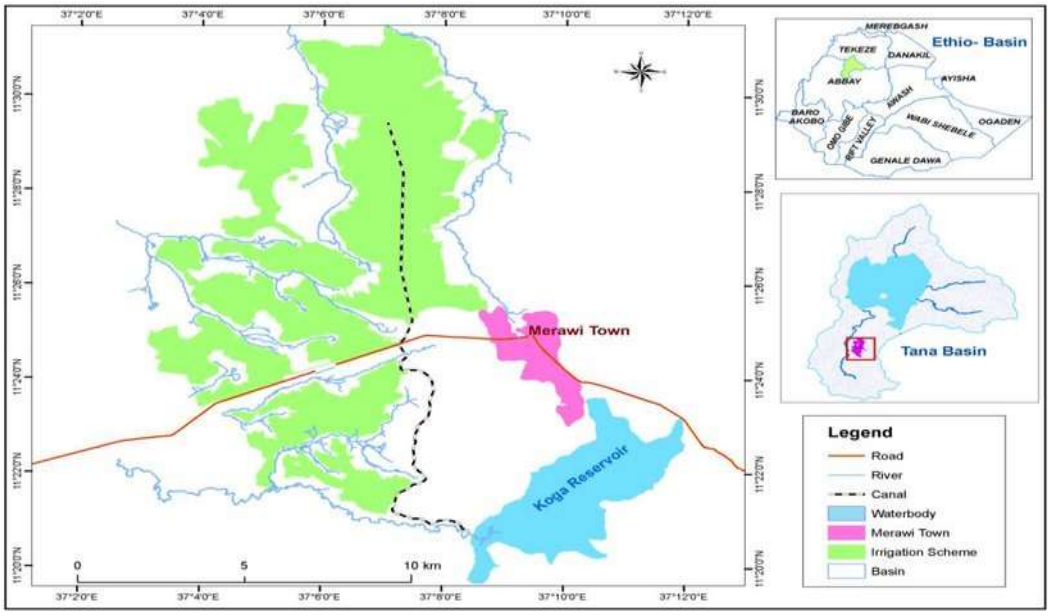
II. Methodology

Description Of the Study Area

Merawi Town: Location and Physical Characteristics

Merawi is one of the towns in Amhara Regional state that has been given the status of Municipality administration since 2014. Locational, it is situated about 30 kilometers south of Bahir Dar and approximately 525 km from Addis Ababa, Ethiopia's capital. Specifically, the town is located 7 km near Koga Dam, lying on latitude and longitude coordinates of l1°24'3l 'W 37°9'39" ECoordinates: 11°24'31"N 37°9'39"E with an elevation of 1901 meters above sea level. The town also hosts the seat of Mecha Woreda administration.

Location Map of the study area



Source: Mecha woreda Koga Project Office, unpublished

Koga Irrigation Project area: Location and Physical Characteristics

Koga Irrigation Development Project is found in Mecha Woreda, 7kms away from Merawi, the seat of the woreda and 526kms far from Addis Ababa, the capital of Ethiopia. The project is situated at the head of the Blue Nile basin within Lake Tana Watershed at l1o 10' N to 11o 25' N latitude and 37o 02' E to 37o 17' E longitude under Woyina Dega' agro-climate zone. The area is subject to the Intertropical Convergence Zone, northern trade winds and the southern monsoon (UNESCO, 2004) cited in (Kassie K.E, 2018). Thus, it suffers from a dry period, called 'Bega', which begins in December and lasts until the end of May. There is a rainy period, called 'Kiremt', which begins from June/July and ends in September/October. The area has a mean annual rainfall of 1560 mm and a mean daily temperature between 16 and 20^{o}C. The Koga Irrigation Development Project irrigates 7004 hectare land within a 22,000-hectare catchment area (Koga irrigation development project office, 2019).

Research Approach

To achieve the objective of the study, clear and appropriate research methodology is vital. According to (Kothari, 2004), descriptive research type describes the quantitative and qualitative aspects of respondents, interest, attitude and perception towards the issue under study. This study employed descriptive type of research design and mixed research approach to deal with the issue under study. The reason behind choosing this research design is because of the paper's particular intensions and nature of data to be used. It simply describe the scenario of urban rural linkages, elaborates the sayings of the respondents about extent and type of linkages, and shows how the existing linkage is established still based on the assumptions of the respondents.

Mixed research approach was employed to capture the best of both qualitative and quantitative approaches. Quantitative approach is applied to conduct in depth analysis of data obtained via questionnaires which were distributed to sample respondents (for farmers who live in Koga Irrigation watershed area, Merawi town residents and traders).

The mixed approach in this research is applicable in two distinct phases. In the first phase, quantitative data were collected by using questionnaire from respondents (sampled based on Kothari's sample determination stated as "for the population greater than 10000, the probable sample size taking 95% confidence level is 384"). However, there were only 255 respondents who filled the questionnaires properly, and the analysis and concussion is made based on that. The respondents on the survey questionnaire were farmer households who live in the irrigated region. In the second phase, qualitative data were collected through interviewing project managers, rural elderlies, Woreda administrators, Project workers and managers. Moreover, document reviews like journals, manuals and reports were done side by side to collect secondary data supply from web, friends' hands, and libraries. The data were analyzed concurrently by the application of SPSS using statistical analysis for quantitative data, and case narration for qualitative data.

III. Results and Discussion

CASE — 1: FGD Case Summery with Farmers

The main issues which were forwarded to farmer participants were intended to share their opinion on the significance of the irrigation to their farming, their productivity (type, input usage, and turnover) and the challenges they face in their overall agricultural activity. Accordingly, the following table summarizes the main points of the FGD.

"…. Indeed, the coming to effect of Koga Irrigation has changed our life in many aspects. Unlike the previous times, we could cultivate twice a year and crop types that we never even seen before like wheat, cabbage, tomato. We were producing crops to feed our family before, but after the irrigation started, all the farmers in the scheme, grow the vegetables and cereals like maize and wheat for market. We farmers are benefited many dimensionally by the irrigation. During 'Bega season, getting green grass for our oxen was unthinkable, but now we can get that along the canals. We are known by ox ranching. As soon as finishing 'Bega plough, we start ranching of the oxen for sale. This grass helped us to fatten them in a short time. Even, we could get water access from the irrigation in our village to domestic use and animal drinking. Our fruits around our home are green throughout the year. It is eye catching to stay outside with our families during this season. ... .

We grow cereals like Dagusa and Maize for home consumption in Bega season enough for our annual home consumption, and during bega season, the vegetables and cereals are grown intentionally for sale. From the productivity perspective, vegetables are by far greater than cereals like maize and wheat. However, since they are perishable, we are decreasing cultivating of vegetables and more tend to cereals especially wheat. Whatsoever, we could earn better due to Koga Irrigation, and our life is changed considerably. Many of us could buy home in Merawi Town and our children follow their education being in their home, and sometimes we could get rest there after returning from Merawi market. Not only for ourselves, are we important for the town in various perspectives. Most of the bajajs found in the town are owned by us, the farmers. We supply vegetables and maize almost throughout the year with cheap price. The town's youth,

both females and males, are passing their bega season are labors in our farms. All the merchants, loaders and brokers are the town's inhabitants. We buy agricultural inputs like pesticides and fertilizers from such merchants with high price.....

A farmer FGD participant explained the inputs he used for a 4.5ha land Potato cultivation in this year (2019/20 production year) as (His name reserved for security purpose January, 2020),'

"... .... I have a spent 30quintal DAP (45,000 ETB), l04Qtl potato seed (83,200 ETB), 6 liters pesticide (3000 ETB) and around 40,000 ETB for wage employed on potato farm from planting the seeds, watering and collecting the produce. For example, I hired 50 labors while planting the seeds four three consecutive days by paying 150 ETB/day for each labor. So, I spent more than 180,000ETB for Potato production only. Furthermore, I have 1ha wheat and 0.5Ha onion whose cost is not calculated yet well. Except 45quintal of the seed bought from Sekela, all inputs were bought from Merawi Town."... However, the government seems as does not want to help us. We are paying tax and contribution for 'Alma and other required payments, but we are in many infrastructural problems. The road to the town is not well serviced, except consuming our farm. We should go to 3Hrs round trip to Merawi Town for electric grinding."

What worsens the problem is lack of market for our production, especially the vegetables. There were occasions we were dump tomato and onion produces since there were no buyers even with very cheap price. Example tomato was drop to 2 birr/kg. "...የደላላ አምራች ሆነን ቀረን ...እኛ ለፍተን ከምናገኘው ትርፍ ደላላ የሚያገኘው በብዙ ታጥፎ ይበልጠናል..... እኛ እኮ የኑጋዬ ማደጊያ ነን.....ይህንን ሁሉ የሚያደርገን መንግስት ዞሮ ሰለማያየን ነው።። መብራት የለን፣ መንገድ የለን ከዚህ ባዶ እርሻ ላይ ከነልጆቻችንና ሚሰቶቻችን መከራችን እያየን ነው..... አትክልት አምርቱ እንባላለን አምርተን ገበያ ወስደን ማን ይንካን...ደፍተን የምንመለስበተ ጊዜ አለ..." ..So, we the farmers are tending more to produce cereal crops, mostly wheat during irrigation session, though the productivity is less when compared to vegetable growing. They raise grievances on the value added by the farmers are captured by other external bodies like brokers and merchants, and they said that the government is the reason and accountable for."

".....Beyond the challenge of infrastructure, farm inputs shortage and absence is the critical one for irrigated farming. The government has a scheduled supply of DAP, Urea and fertilizers as much as possible for rain fed farming during Kiremt season through unions and cooperatives. However, there is little supply of DAP, Urea and best seeds by Koga Union, which can't satisfy more than one fifth input demand. It is from the urban traders that we can fulfill the remaining 3/4'h demand of Fertilizer and best seed demand. There is no pesticide in the town unless we reserved during Kiremt. A 50birr pesticide during Kiremt usually becomes 500birr and more during irrigation seasons (Bega), and sometimes might not be found at all...."

Source: FGD participants, January, 2020

Case — 2: Interviewees' Summery

The main issues which were forwarded to interviewees were to inquire them about the main activities how and what the government is engaged on to increase irrigation farming performance rising, marketing linkages and linking the irrigation farming to raise urban livelihoods. Moreover, as key informants, they requested to forward their perceptions about the opportunities and challenges of increasing such linkages. Interviews from Koga Irrigation and Watershed Management Office and others like from Small and Medium Scale Enterprises office, Office of Trade and market development office of Merawi town, and Mecha Wereda Rural Development and Natural Resource office described the general scenario of Koga Irrigation Farming, the opportunities and treats, and the rural urban linkage with Merawi Town.

"*… Koga irrigation is a gift from this government particular for this area's farmers to have a two-three farming sessions. The grow crops dominantly Dagusa and Maize during Kiremt session from Ginbot to Meskerem, and they grow various vegetables like onion, tomato, potato, cabbage and chili, and cereals like wheat and maize. In this area, wheat had never been part of cultivation before irrigation started. The first session of irrigation often inaugurated mostly in October and end January. The dominant produces include wheat, maize and the above vegetables, but in the 2" session of irrigation farming, Potato takes the lead. "*

"....The farmers in the irrigated region had had very fragmented land plots, however, after the irrigation; they are given a one plot which has similar size of their fragmented plot sums. Such land holding is important for a farmer to control and farm. From this, two percent is deducted from each farmer for the purpose of way, land for investors and youth cooperatives. Land size for each farmer ranges from 2.5Ha to 0.5Ha...

The irrigation is/has changed the livelihood of the farmers in different aspects. With the same or less agricultural plot, the productivity and agricultural produce type is considerably changed. Formerly, there were vast grazing land, but after, that land is changed to crop and vegetables production site. Beyond this, the farmers ranching culture is developed. This day, they have a trend of buying oxen in May and finished their plough in June. From June to September, the oxen become ranched and sold back until Meskel. Then the farmers again buy other oxen for irrigation farming between September and October to finish ploughing until the first week of November. Then the oxen again become ranched to be sold for X-Mass. One fatten ox usually valued two to three oxen. The irrigated crop residue and the green grass called Rodas along the water canals help the farmers to fatten their oxen."

"...The coming up of this irrigation is not only advantageous for the farmers, but it is playing great role for the development of Merawi Town. Some of the benefits; there is whole year round fresh maize (USA" Z N•k), considerable number of farmers directly invest in the town by buying buildings and vehicles. Fresh vegetables like onion, potato, tomato, chili and cabbage are usually full in the town's market with cheap price. Some parts of the town's community, especially old women are directly engaged in retailing of such domestic consumptions. ...Moreover, huge numbers of the town's youths (especially females) are labors on the farmer's irrigated land. For this purpose, large numbers of female students from neighbor Weredas choose to continue their high school education intending to be employed in their break times. Some town's youth small and medium scale cooperatives are engaged directly on the supply of inputs from the irrigated region. For example cooperatives who engaged in ox ranching activity get the feed of the oxen from the residue of irrigation crops and vegetables. Still some ranching oxen are bought directly from such farmers. "

However, the main problems that become bottlenecks for further productivity and rural urban linkages are there. These includes unable to cover the whole irrigated land in irrigation sessions, more customary based irrigated water usage, tendency to cover their plot with eucalyptus tree, and marketing of vegetables (easily perishable agricultural produces), lack of agricultural inputs, absence of agricultural processing industries, etc.

Some Kiremt crop types like Dagusa stay on land up to the end of December by consuming the irrigation time. Furthermore, this crop by nature is land drier. The farmers need extra/unplanned water to soften the land for plough. This usually becomes water sharing conflict between the farmers. The other problem marketing linkage for perishable agricultural products. Since the farmers do not cultivate in cluster, some produces reach first while other types late. So, the farmers must supply their produce in the local Market, like Merawi, Wetet Abay and Birakat. This time, the price of such products becomes low, and the farmers

are demotivated to cultivate the same produces in the next crop year. There is no a farm processing industry in and around Merawi Town, except on production of one cooling store for perishable outputs.

Not only on the part of the out puts, has the marketing problem faced the input considerably. Most of the time, the farmers themselves buy inputs like fertilizers, best seeds and pesticides from traders of Merawi and other surrounding Weredas. They might buy with 50-80% increase of the usual price.

Source: Squeezed Interviewee responses, January, 2020

The Nature and Extent of Urban-Rural Linkages in The Study Area

It is commonly agreed that rural-urban linkage plays a crucial role in the effort of poverty reduction and economic growth. Cognizant of this fact, understanding the characteristics of the specific local context of rural-urban linkage and recognizing diversity among locality and households have been key elements for researchers, policy makers and development actors.

As indicated in the literature, the linkages between small towns and its hinterland could be categorized into different types: production, marketing, consumption, financial and environmental linkages. The patterns of linkages could be identified from the frequency of visit of farm households to the nearby small towns. This section, therefore, examined the nature, extent and direction of urban-rural linkages in the study area. It also treated the determinants of rural-urban linkage in the study area.

Production Linkages: Production linkages are manifested in two forms: backward and forward production linkages. Backward production linkage occurs when farmers in the hinterland utilize agricultural inputs such as fertilizers, improved seeds, insecticides, herbicides and the like from the nearby town. Forward production linkages on the other hand involve the processing and distribution of agricultural outputs of the hinterland by firms in the nearby town (Mewael B. 2016).

The study area has two dominant cropping seasons: Kiremt and Bega. The main crops grown in Kiremt season include Maize and Dagusa depended by rained agriculture. However, it is based on irrigation that the Bega season agricultural activities are based on. There are different vegetables like cabbage, tomato, potato, onion and cereals, dominantly wheat and maize are cultivable in irrigation-based agriculture. So it is possible to assume that the farmers use considerable quantity of inputs.

Agricultural inputs help to increase agricultural productivity by nourishing crops with minerals that are necessary for production and controlling pests and weeds. Therefore, small towns are expected to improve farmers' access to agricultural inputs. The extent to which local farmers use agricultural inputs and extension services, and the capacity small towns to provide these services to the local farmers could reveal the impact or role of small towns on the hinterlands. Moreover, it could reveal the nature of backward production linkages the hinterlands may have with the small towns.

Table 1: Rural Households' Utilization of Agricultural Inputs, 2018/19

Agricultural Input	Reported as "Yes"	Average Expenditure/ household	Source	
	Number (%)		Rural	Urban
Ferti1izer(DA and URIA)	255(100)	4332	-	100%
Improved seed	255(100)	1884	-	100%
Herbicides & Insecticide	134(52.5)	760	-	100%
Zero Tillage chemical	22(8.6)	1600	-	100%
Total Respondents	221			

Source: Field survey, 2020

The backward production linkage was shown in the study area via the use of agricultural inputs. The above table illustrated that the predominant type of agricultural inputs used by the sample rural households in Koga irrigation region. These include fertilizers, insecticides, herbicides, improved seeds, zero tillage chemical and irrigation related items. All the households used all types of the above listed inputs in 2018/19. However, beside the economic consideration, the degree (for example frequency and quantity) and reason of use differed from household to household. For example, some respondents have small size arable land than others. Regarding the pattern of use of these inputs, commercial fertilizer (DAP) was the dominant in the study area. As the table shows, all of the sample rural households used improved seed and fertilizers. The fertilizer was collected from the town and distributed to the households in different Kebeles either by the cooperatives or by themselves. In this way, the cooperatives and the farmers' union played an important role in facilitating the rural-urban linkage through the supply of farming inputs to the households.

On the other hand, about half (52.5%) of the sample respondents used herbicides and insecticides. These chemicals were mainly used when weeds and insets occurred. Farmers in the study area were solely dependent on urban area (urban trader in Merawi town) for supply of these herbicides and insecticides. The backward production linkage in the study area was reflected mainly through farmers' use of the above agricultural inputs supplied from Merawi Town.

Backward production linkage was also supported by the provision of equipment used for irrigation. This also created job opportunity for urban residents who were engaged in small and medium scale enterprises in service and trading sectors. In addition, the farmers' union (situated in the town) sells different agricultural equipment such as sickle, sprayer, and hoe to the rural households in the study area.

Though there are huge agricultural products in the study region, there is no any agriculture output processing industries. This indicates there is absence of forward production linkage between the town and the rural study area and thus, there is no industrial base linked to the hinterlands. Especially, since vegetables are easily perishable, the farmers tended to inclined producing cereals like wheat though the productivity is less than the vegetable growing.

The town has a large industrial base (Textile, marble, shoe, flour), which do not have any meaningful direct link with the rural people or rural production processes in the hinterland. These industrial activities were outward-directed and export-oriented, and hence contributed very little to the overall local economy, except for the few job opportunities they created and associated market opportunities for food crops from the rural hinterland. This is similar to the nation's fashion that there is a dependence of the industrial sector on imported raw materials.

Extension service plays a great role in increasing agricultural productivity of the rural people. The whole sample respondents reported that they had got different services such as farm extension service, agricultural tools and veterinary services from the town. This had a positive impact on strengthening rural-urban linkage in the study area. Those who were engaged in irrigation also got their equipment and fuel from the town.

Generally, the findings showed that the level of production rural-urban linkage in the study area was very low or weak. The backward production linkage was relatively better than the forward production linkage. Availability of agricultural inputs in the nearby town was the main facilitator for the existing backward production linkage. The backward production linkage in the study area was reflected mainly through farmers' use of herbicides and insecticides, modem beehives and irrigation equipment supplied from Merawi town. The forward production was almost missing in the study area. Almost all sample households did not sell any part of their farm products to processing plants found in Merawi town. The following section discusses the marketing linkage in the study area.

Marketing Linkages: Marketing linkage is manifested when the urban dwellers and traders purchase the agricultural produce from the rural households. The input to the process of marketing linkage is, therefore, agricultural produce and the output is the consumption of the produce by the urban consumers. It is also manifested when rural households purchase goods from the town. Usually, it includes the flows of agricultural and manufacturing goods between urban and rural areas (White, 2005).

Marketing linkage is the main form of rural-urban linkage. Food grain, livestock and livestock product, vegetable, honey, and merchandise flow between urban and rural areas. Marketing channels for agricultural produce are how food grains flow from rural to urban areas. The simplest link between the producers and consumers is where agricultural producers sell their own produces directly to the consumers. However, marketing linkage between the agricultural producers and urban consumers is mostly provided through a network of traders or intermediaries.

In the study area, marketing linkage is manifested by the purchasing of crops like tef dagussa, maize, wheat and the like; vegetables like cabbage, onion, tomato, potato and the like; livestock and their products by urban dwellers and the purchase of manufactured goods and different services by rural dwellers.

While field observation took place, there was surplus supply of different vegetables in Merawi market. Moreover, there were cattle and fatten oxen that showed there is strong marketing linkage. However, the FGD participants strongly argued that the market is not capable to absorb

all the agricultural products, and hence the price is very low for vegetables. The urban traders are mainly engaged in trading of crops than those vegetables, so, at the production site, the farm size which was used for vegetable production is reduced to be one third of the former.

Consumption Linkages: Urban goods and merchandise, which are imported or domestically manufactured, flow from urban to rural areas. Activities that meet the consumer demand of rural households form the basic chain of consumption linkages. That is rural-urban linkages occur when the rural households create demand for urban goods of small towns. This becomes apparent when small towns have the required goods and services in them for interactions to take place between rural areas and urban centers. Towns are the major suppliers of consumer and manufactured goods to rural areas. Though it is difficult to capture and document all types and varieties of these goods, the expenditure pattern of major durable and consumable items are treated under this section.

Table 2: Average Expenditure and Place of Purchase of Goods

Goods	Average Expenditure	Reporting Farmers	Place of Purchase	
			Town	Rural & Town
Cloths/ Shoes	2634 (annually)	255(100)	100%	
Household utensils	720 (annually)	191 (75.1)		
Exercise book, pen & others	586	250 (98.2)		
Total	3940 Birr			
Building materials	500 (annually)	37 (14.5)		
Coffee/Sugar/Tea	110 (monthly)	251 (98.6)	186(72.9%)	69(27.1%)
Salt/Spices/ Pepper	100 (monthly)	225 (100)		
Oil/Kerosene/Soap/ Dry cells	350 (monthly)	225 (100)		
Others	50 (monthly)	225 (100)		
Total	1100 Birr			
Total Annual Expenditure	5040 Birr)			

Source.' Field survey, 2020

The table above presents the households' estimated average expenditure on both durable (annual expenditure) and consumable (monthly expenditure) items. As shown in table, the entire sample rural households purchased durable (household utensils) goods in Merawi town, while three-fourth of the sample rural households purchased non-durable goods in the town. With regard to the non-durable goods, almost the entire sample farmers purchased consumables such as soap, kerosene, oil, sugar, and coffee. All sample households expend some amount of money for durable as well as non-durable consumable items. On average, each sample household spent 3940 Birr annually for durable items (like for clothing/shoe, household utensils and exercise book). This showed the rural population of Koga irrigation region made some expenditure on urban goods. Almost all sample rural households expend some money for both durable and consumable items at Merawi town. Though a difference was noted households with respect to their place of purchase, the town met the demand of the hinterland for urban

goods and services. Therefore, in relative terms, there was a strong consumption linkage in the study area.

In general, it is possible to conclude that there are linkages created between Merawi Town and the Koga irrigated region rural area though the extent is different. Production linkage is somewhat strong in the backward dimension but no forward linkage at all. Since rural inhabitants have enough expenditure due to surplus agricultural production which sold out to the market, there is high urban goods consumption linkage. The marketing linkage is relatively low for vegetables than crop agricultural products.

IV. Conclusion

The main objective of the study was to explore the scenario of rural-urban linkages and how agricultural irrigation projects shape the linkage to bring regional development. In order to achieve the objectives of the study, the necessary data were drawn both from primary and secondary sources.

The sustainable development of both rural and urban areas requires a mutual relation between these two spatial units. The findings disclosed that the level of rural-urban linkage in the form of production linkage in the study area was very weak. The backward production linkage was relatively better than the forward production linkage. Availability of agricultural inputs in the nearby town was the main factor for the existing backward production linkage. The backward production linkage in the study area was reflected mainly through farmers' use of herbicides and insecticides and irrigation equipment's supplied from Merawi town.

Although all sample rural households produced cereal crops and vegetables, the urban market is unable to absorb the perishable products which led less production of the items from time to time. The area is well suited for crop production because cultivable land very plan and fertile. Moreover, irrigation system enables the farmers to cultivate in the Bega season when rain does not exist. This multiplies their former producing capability. In the study area, crop products supplied to Merawi market from the hinterlands were very huge, though the marketing linkage through crop was very weak, as the market couldn't absorb surplus.

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2.7. Technical Efficiency Difference between Model and Non- Model Smallholder Wheat Producer Farmers in Lode Hetosa Woreda of East Arsi Zone, by Meshesha Zewdie [1] & Dessalegn Shamebo [2]

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Abstract

Smallholder farming system in Ethiopia is largely dominated by staple food crops which are exposed to managerial inefficiency and factors beyond the control of the farmer. Accordingly, the study aims to analyze technical efficiency differences between model and non- model smallholder wheat producer farmers and inefficiency determinates in Hetosa Woreda of East Arsi Zone. Stochastic Production Frontier Cobb-Douglas functional form was used. To analyze cross-sectional data collected from 700(350 mode and 350 non- model) farmers for the production year of 2018/19, descriptive and econometrics data analysis techniques were used. The findings of the descriptive analysis showed that model and non- model farmers produced on average 32.82 and 29.36 quintal of wheat per hectare respectively. The value of discrepancy ratio (γ) which indicates technical inefficiency variability was 89%, 82%, 84% for model, non-model and overall farmers respectively. The mean technical efficiency score was 81%, 79% and 80% for model, non-model, and overall farmers respectively. Land, fertilizer and labour were statistically significantly affecting wheat output of model farmers, whereas all input variables were statistically significantly affecting wheat output of non- model farmers. In addition, model farmers' technical inefficiency in wheat farming was statistically significantly determined by mode of plowing, mode of harvesting, shock, training, and marketing and that of non- model farmers' technical inefficiency was statistically significantly determined by mode of harvesting, level of education, land fragmentation and marketing. Thus, training, market, education, and strategic plan to mitigate factors beyond the control of farmers need to be considered for improvement to make farmers more productive and technically efficient in the study area.

Keywords: Technical efficiency, stochastic production frontier, model, and non- model farmers

I. Introduction

Ethiopian Economy which is highly depends on agriculture is characterized by small scale, subsistence oriented, traditional, and vulnerable to climate shocks. However, agricultural sector accounts for more than 44% of the GDP, 85% of the annual export earnings and 85% of the employment (World fact book, 2016). Ethiopian strategy to achieve overall economic growth largely depends on the performance of the agricultural sector. In order to sustain economic growth, reduce poverty and ensure food security, the sector needs substantial transformation. To this end, the government of Ethiopia made a series of economic reforms since 1991 onwards. Some of these reforms include the Structural Adjustment Programme (1991), Agricultural Development Led Industrialization (ADLI) Strategy (1993), Interim Poverty Reduction Strategy Paper (IPRSP) (2000), Sustainable Development and Poverty Reduction Program (SDPRP) (2002), Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (2005), and Growth and Transformation Plan (GTP) (2011) with an objective to bring fast economic growth through increased agricultural productivity.

To increase production and productivity of wheat producing smallholder farmers in Ethiopia, better use of modern agricultural technology and inputs are important which in turn able to enhance production efficiency of farmers (Shumet, 2012 and Endrias et al, 2010). Similarly, Ologbon and Yusuf, (2012) also confirms that weed controlling mechanism of the farmers could accounts for the variations in productivity and efficiency among cereal crop producers in Nigeria. But, provision of improved agricultural technology is a supply side issue for smallholder farmers, so that, understanding end users capacity and demand to adopt the technology will have immense contribution in the problem of productivity and technical efficiency of farmers.

Many researchers have proposed improvement in technical efficiency as a solution for optimal operation of cereal crop farming through provision of better information, credit provision, extension visit, disseminating improved technologies such as fertilizer and improved high yielding varieties and education (Shumet, 2012; Essa, 2111; Mussa et al., 2011; Alemayehu, 2010; Jema, 2008). If farmers' technical efficiency is low, the use of modern technology alone could not bring the expected shift of production frontier. But, smallholder farmers can still produce efficiently with a given fixed set of inputs and a given level of technology. Assefa et al (2019) and Moges (2019) found technical efficiency score for small holder wheat producer farmers 72% and 82% respectively. To compare the technical efficiency differences between model and non- models farmers is the contribution of this study as many researchers do not group farmers in to model and non- model.

Wheat is the most staple crop food in Ethiopia in both urban and rural areas. Farmers of the Lode Hetosa *Woreda* cultivate wheat most commonly and tried their best to increase its production by the support obtained from development agents and agricultural experts through grouping farmers in to model and non-model farmers. Here model farmers are farmers that are role models for neighboring farmers chosen by local governmental institutions, and are successful farmers who are used as principal agent to accept and disseminates technologies and information to follower farmers (non- model), otherwise, they are called as non- model farmers

(Stone, 2016). Model farmers are acting as nexus points in the flow of information, subsidies, and material inputs between extension agents and local community (Taylor, 2018). Based on these definitions, Lode Hetosa Woreda agricultural office has grouped farmers into model (4706 farmers) and non- model farmers (15601 farmers) (WAOR, 2019). Grouping of farmers was done yearly because there are farmers who are model a year before and may be non- model this year and the same fact holds true for non- model farmers.

Therefore, the researchers are motivated to conduct this research to estimate the level of technical efficiency and identifying factors contributing to inefficiency among model and non-model wheat producing farmers in the study area and ultimately contribute recent data and information to the knowledge in the field.

II. Methodology

Study Design

The study used explanatory research design because the main aim of the study is to estimate technical efficiency and identify inefficiency differential among model and non- model smallholder wheat producing farmers. And quantitative cross- sectional primary data for the production period of 2018/19 was collected from samples drawn from the population.

Sample Size and Selection Technique

Lode Hetosa *Woreda* is chosen among all *Woreda* found in East Arsi Zone of Oromia National Regional State purposively, because the *Woreda* is more suitable for wheat production and more than 90% of arable land has been used for wheat production compared to other *Woreda.* Among 19 *kebeles* found in the *Woreda*, 12 of them are the most potential kebeles in wheat production. Then, from these 12 potential wheats producing *kebeles*, 8(eight) *kebeles* were chosen by simple random sampling techniques. Lists of 1980 model and 6568 non- model farmers are available at these 8 *kebele* farmer training centers (FTC) with different figures in each *kebele.* Therefore, systematic random sampling technique was applied to select sample from lists of farmers found in each *kebele* to qualify a sample size 700 with 350 model and 350 non- model farmers by probability proportional to size to each *kebeles* under study. To compare the mean score of efficiency among model and non-model farmers, equal sample size was taken. The primary data was collected by schedule method using structured questionnaire. The data was analyzed by descriptive and econometrics methods.

Econometric Analysis

Selection Of Functional Form

Cobb-Douglas and trans-log functional forms are widely applicable in stochastic production frontier analysis. But, the Cobb-Douglas functional form is commonly used in estimating the stochastic production frontier. It is widely used in agricultural economics studies because of its ability to effectively estimate technical efficiency while accounting for technical inefficiency factors that are farm specific and random factors that influence observed technical efficiency level which are beyond the control of the farmer (Coelli et al., 1998).

Estimation Of Input Model

The Stochastic production frontier model developed independently by Aigner et al. (1977) and Meeusen and Venden Broeck (1977) in which an additional random error, v_i, is added to the non-negative random variable, u_i. However, since the model assumes half normal distribution, Aigner, Lovell and Schmidt (1977) obtained maximum likelihood (ML) estimates under the assumption of v_i- iid N $(0, \sigma_v^2)$, u_i-iid N^+ $(0, \sigma^2_u)$, the model was specified as follows:

$$\ln (y_i) = X_i\beta + v_i - u_i \text{ , } i = 1, 2, \ldots N \qquad (3.1)$$

Where:

ln: represents the natural logarithm to the base" e"

y_i: total wheat output in *quintal* for the i^{th} farmer.

X_i: is a vector of input variables for the i^{th} farmer

β: parameters to be estimated.

v_i: is the disturbance error term, independently and identically distributed(iid) as $N(0,\sigma_v^2)$ intended to capture events beyond the control of farmers with mean value zero and constant variance(σ_v^2)

u_i: is a non-negative half normal random variable, independently and identically distributed(iid) as $N^+(0, \sigma^2_u)$ with mean value zero and constant variance(σ_v^2) intended to capture technical inefficiency effects in wheat output.

That is to say; the output oriented technical efficiency of the i^{th} farmer, denoted by TE_i, can be estimated as the ratio of the observed output (y_i) and maximum potential output (y*):

$$TE_i = y_i / y^* = \frac{\mathbf{f}(\mathbf{x_{ij}}, \boldsymbol{\beta})\mathbf{x}\ \mathbf{exp}\ (\mathbf{v_i} - \mathbf{u_i})}{\mathbf{f}(\mathbf{x_{ij}}, \boldsymbol{\beta})\ \mathbf{x}\ \mathbf{exp}\ (\mathbf{vi})} = \exp(-u_i) \qquad (3.2)$$

Where:

i, j: denote the farm and input respectively.

TE_i: technical efficiency of the i^{th} farmer.

exp $(-u_i)$: expected value of $-u_i$.

Output and input variables used in this model are:

Wheat Yield (Woutp): This is dependent variable used to measure amount of wheat produced in quintal for production period 2018/2019).

Land (land): Land cultivated for wheat production in the year 2018/19 and it was measured in hectare.

Fertilizer (Fert): UREA or DAP or both fertilizers used in quintal per hectare.

Improved Seed (Imp.seed): This is amount of improved wheat seed used by farmers per hectare of wheat land cultivated.

Local seed (LSeed): This is amount of local wheat seed used by farmers per hectare of wheat land cultivated.

Labour (labr): It can be hired or family labour involved in wheat farming. The family and hired labor used was measured on the bases of person day conversion, which is eight working hours considered as one person day.

Chemical (chem): Chemicals are used by farmers to control weed and pests. Therefore farmers were asked how much ml of chemical they applied in last cropping season for wheat farming.

The input model was written as:

$\ln(woutp) = \beta o + \beta_1 \ln(land) + \beta_2 \ln(Fert) + \beta_3 \ln(Impseed) + \beta_4 \ln(labr) + \beta_5 (chem) + v_i - ui$, $\varepsilon_i = v_i - u_i$

3. 3.3 predicting farm specific efficiency

The best prediction of farm level efficiency, exp ($-u_i$), can be obtained by

$$E(\exp(-u_i) / e_i) = \frac{1-\emptyset(\sigma_A+\gamma e_i/\sigma_A)}{1-\emptyset(\gamma e_i/\sigma_A)} \exp(\gamma e_i + \sigma^2/2) \quad (3.3)$$

$$\sigma_A = \sqrt{\gamma(1-\gamma)\sigma_S^2}\ ;\ e_i = \ln(yi) - X_i\beta;\ \emptyset(.) \quad (3.4)$$

Where; $\emptyset(.)$ the density function of a standard normal random variable which can be estimated by maximum likelihood once the density function for u_i is specified. The model, defined by Equations (3.1 and 3.2) is called the stochastic frontier production function because the output values are bounded by the stochastic (random) variable, v_i. The random error, v_i can be positive or negative and so the stochastic frontier outputs vary about the deterministic part of the frontier model (Coelli et al., 1998).

The maximum likelihood estimates of the parameters of the frontier model are estimated, such that the variance parameters are expressed in terms of the parameterization.

$$\sigma^2_s = \sigma^2_v + \sigma_u^2 \text{ and} \quad (3.5)$$

$$\gamma = \sigma_u^2 / \sigma^2_s = \sigma_u^2 / \sigma_v^{2+} \sigma_u^2 \quad (3.6)$$

Where: the γ parameter has a value between 0 and 1. A value of γ of zero indicates that the deviations from the frontier are due entirely to noise, while a value of one would indicate that all deviations are due to technical inefficiency.

σ_u^2 - is the variance parameter that denotes deviation from the frontier due to inefficiency;

σ^2_v - is the variance parameter that denotes deviation from the frontier due to noise

σ^2_s - is the variance parameter that denotes the total deviation from the frontier.

2. 3.4 Estimation of inefficiency effect model

A one step procedure estimate of all the parameters was applied. That is, both the production frontier and the inefficiency effect models are estimated simultaneously, because the inefficiencies are assumed to be independently and identically distributed (iid) in order to estimate their values (Coelli et al., 1998; Herrero and Pascoe, 2002).

Consequently, farm specific inefficiency effects, u_i's, assuming for example, a half normal distribution $N^+ (0, \sigma_u^2)$ is modeled as follows:

$$U_i = Z_i \delta + w_i \qquad i = 1,2,\ldots\ldots N \tag{3.7}$$

Where; U_i - is inefficiency effects

δ - is a 1xP vector of parameters to be estimated by maximum likelihood estimator, which would generally be expected to include an intercept parameter

Z_i – is a Px1 vector of explanatory variables associated with farm specific inefficiency effects.

w_i – is assumed to be normally distributed random variable with mean zero and variance $\delta^2 w$ or $w_{i\sim} N(0, \delta^2 w)$

The following variables were used and estimated in the inefficiency effect model. These are:

Age (age): This refers age of the farmer measured in number of years.

Age^2. This variable was be used to see the diminishing effect of age on efficiency.

Sex (sex): It is a dummy variable assumes "1" if a farmer is male headed and "0" otherwise

Education Level (educ): This refers educational level of the farmers. It is measured in years of formal schooling of the farmers and then grouped into categorical variables.

Family size (fmsz): This refers total number of family members in the household. It was converted in to Adult Equivalent (AE).

Extension Contact (extcont): This variable was measured by the number of visits made per week by development agents in relation to wheat production in the cropping year.

Credit (credt): It is a dummy variable assumes "1" if a farmer gets credit for wheat production and "0" otherwise in the cropping year from formal financial institution.

Training (training): This is a dummy variable which assumes "1" if a farmer gets training related to wheat production and "0" otherwise in the cropping year. A farmer can trained more than one in a cropping period.

Land fragmentation (land frag): This is number of plots of land a farmer plow for wheat production. It includes both own and rented plots.

Market (Markt): This variable was used to indicate whether a farmer faced any problem related to marketing of his wheat product. If framers do not have problem to market, it is more likely that farmers will produce more in response to the benefit they obtained from market and affect inefficiency negatively.

Harvesting (Harvest): This is a categorical variable that indicated mode of harvesting a farmer practice in the wheat farming and assume 1 if a farmer use only combiner, 2 is a farmer harvest only manually and 3 if a farmer used both combiner and manual.

Plowing (plow): This refers mode of plowing a farmer exercise in the cropping year. It is categorical variable and assumes 1 if a farmer used oxen only, 2 if a farmer used tractor only and 3 if a farmer used oxen and tractor.

Therefore, the inefficiency model is written as:

$$U_i = \delta_0+\delta_1(age) + \delta_2(age^2) + \delta_3(sex)+ \delta_4(educ)+ \delta_5(training)+ + \delta_6(exts)+ \delta_7(shock)+\delta_8(markt)+\delta_9(harvest)+\delta_{10}(plow)+\omega_i \quad (3.8)$$

Finally both the input and inefficiency models were estimated simultaneously specified as:

$$\ln(woutp) = \beta o + \beta_1 \ln(land) + \beta_2 \ln(Fert) + \beta_3 \ln(Impseed) + \beta_4 \ln(labr) + \beta_5 (chem) - (\delta_0+\delta_1(age) +\delta_2(age^2)+\delta_3(sex)+\delta_4(educ)+\delta_5(training)+\delta_6(exts)+\delta_7(shock)+\delta_8(markt)+\delta_9(harvest)+\delta_{10}(plow)+ \omega_i \quad (3.9)$$

III. Review of Related Literature

Concepts and Definitions of Efficiency and Productivity

Productivity and efficiency are often used interchangeably but they are not precisely the same things. Productivity refers to an absolute concept and is measured by the ratio of outputs to inputs (Farrell, 1957). But efficiency is a relative concept and is measured by comparing the actual ratio of outputs to inputs with the optimal ratio of outputs to inputs. The efficiency of a firm is defined as the actual productivity of the firm relative to a maximal potential (also known as best practice frontier) productivity. Measurement of efficiency involves measurement of the distance from observed data point to that frontier. Efficiency has two components: technical efficiency and allocative efficiency (Coelli et al., 1998). Technical efficiency is the ability of a firm to produce a maximal output from a given set of inputs or it is the ability of a firm to use as modest inputs as possible for a given level of output. The former is called input oriented measures and the latter is known as output-oriented measures of technical efficiency (Coelli et al., 1998).

Measurement of Efficiency

Efficiency measures have their roots in the works of Debreu (1951), Koopmans (1951), Farrell (1957), Charnes and Cooper (1957), and Shephard (1970). The estimation of efficiency is based on the estimation of a frontier, which indicates the maximum output from a set of inputs and fixed technology. But in actual practice this frontier function is not known, it will be estimated from a sample of observed production units and each firm‘s performance is compared with the estimated frontier to indicate the efficiency of the individual firm. There are two approaches input-oriented and output-oriented approaches (Coelli et al., 1998).The input oriented concept of efficiency which states “By how much a production unit can proportionally reduce the quantities of input used to produce a given amount of output?” (Coelli et al., 1998) and output-oriented concept of efficiency also states “By how much can output be increased without increasing the amount of inputs used?”(Coelli et al., 1998).

Methods of Estimating Efficiency

Frontier models are broadly categorized into two frontier models. These are parametric frontier model and non-parametric frontier model. The parametric frontier model may further be classified into deterministic frontier model and stochastic frontier model. The parametric models are basically estimated based on econometric methods and the non-parametric efficiency model, often referred to as data envelopment analysis (DEA), involves the use of linear programming method to construct a non-parametric 'piecewise' surface (or frontier) over the data. The parametric approach involves a specification of a functional form for the production technology and an assumption about the distribution of the error terms (Battese et al., 2005).

The idea of a deterministic frontier shared by all firms ignores the very real possibility that a firm's performance may be affected by factors that are entirely outside its control such as bad weather, input supply breakdowns etc. as well as factors under its control (inefficiency). To include these effects of exogenous shocks, both fortunate and unfortunate, together with the effects of measurement error and inefficiency into a single one-sided error term, and to label the mixture inefficiency is questionable and is a major weakness of deterministic frontiers (Coelli et al., 1998).

It is on this basis that the stochastic frontier (composed error) models that Aigner et al. (1977) and Meeusen and van den Broeck (1977) independently develop the model. The vital idea behind the stochastic frontier model is that the error term is composed of two parts. A symmetric component permits random variation of the frontier across firms, and captures the effects of measurement error, other statistical noise, and random shocks outside the control of the firm. The Stochastic frontier function proposed by Aigner et al. (1977) and Meeusen and van den Broeck (1977) is depicted as follows;

$$\mathbf{ln(\, y_i\,) = X'_i\,\beta + v_i - u_i}\,, \qquad i = 1, 2, \ldots N \qquad (2.1)$$

Where: - i - is the number of farms in the study; $\varepsilon_i = v_i - u_i$,

$\ln(y_i)$ - is the natural log of (scalar) output of the i th farm;

X'_i - is a (K+1) - row vector whose first element is "1" and the remaining elements are

the logarithms of the K-input quantities used by the i th farm;

$\beta = (\beta_0, \beta, _1 \beta_2, \ldots\ldots \beta_k)'$ is a (K+1) – column vector of unknown parameters to be estimated;

v_i - is random error term of the model which can be positive or negative

u_i - is a non-negative random variable associated with technical inefficiency in production of farms in the industry involved.

Equn(2.3) can be relaxed as;

$$\ln y_i = \beta_0 + \beta_1 \ln x_i + v_i - u_i$$

Or $$y_i = \exp(\beta_0 + \beta_1 \ln x_i + v_i - u_i)$$

Or yi = $\underbrace{\exp(\beta 0 + \beta 1 lnxi)}_{Deterministic\ component}$ x $\underbrace{\exp(vi)}_{noise}$ x $\underbrace{\exp(-ui)}_{inefficiency}$ (2.2)

IV. Results and Discussion

Descriptive Results

The mean age of model and non- model respondents were 51.38 and 47.16 years respectively. The mean age difference between model and non- model farmers is statistically significant at 1% level (t= 4.9291, p=0.000). Regarding family size, on average, model farmers have slightly higher family size (5.2) compared to non- model farmers (4.6) and the difference is statistically significant at 1% level (t=4.6229, p= 0.000).This implies model farmers have better income than non-model farmers from agriculture and this push model farmers to have more family.

Educated farmers can easily accept and implement agricultural extension services to increase production and eases communicate with development agents. As result, the survey result in table 4.1 showed that 90.43% of respondents were attended from basic education to grade 12 and 9.57% of them were illiterate (Never attended).Moreover, the descriptive result also indicates as the level of education increases, the average wheat output increases more for model farmers than non- model farmers. This implies model farmers produces more than non- model farmers as their level of education increases and this is more likely true that model farmers better adopt and practice modern technologies in agriculture, particularly wheat farming.

Table1: Average Wheat Output by Level of Education and Groups of Farmers

Level of Education	Model Farmer(N=350)			Non- Model farmer(N=350)		
	Freq.	%	Mean output	Freq.	%	Mean output
Never attended	32	9.14	40.5	35	10	18.54
Basic education	68	19.43	45.97	65	18.57	31.83
Attended grade 1-8	167	47.71	48.16	194	55.43	31.15
Attended grade 9-12	83	23.71	60.59	56	16	34.44

Source: Survey Result, 2019

Input Variables

Land is one of the most important variables that affect output of farmers. As a result the descriptive analysis showed that model farmers had, on average, a total of 2.58 hectare of land used for agronomic practices and out of these, 1.52 hectare of land which was fragmented into 2.56 plots were used for wheat farming. Similarly non- model farmers had, on average 1.74 hectare of cultivated land and only 1.04 hectare of land which was fragmented in to 2.4 plots were used for wheat farming (Table 4.2). The t-test statistics shows that the mean land used for wheat farming difference between model and non-model farmers is statistically significant at 1% level (t= 8.6905, p= 0.0000).

Regarding selected seed model farmers, on average, used 1.95 quintal selected seed per hectare and non- model farmers have used 1.08 quintal selected seed per hectare (Table 4.2). The mean

selected seed use difference between model and non- model farmers is statistically significant at 1 % level (t=8.2162, p=0.0000). This implies model farmers can afford more to purchase selected seed than non- model farmers. But the mean local seed use by model farmers per hectare is slightly lower compared to non- model farmers and the difference is statistically insignificant(t = -0.5825, p = 0.7198).

Fertilizer is another important input used by farmers to increase production and productivity. Accordingly, on average, 2.85 and 1.75 quintal of fertilizer per hectare was used by model and non- model farmers respectively and the mean difference is also statistically significant (t=10.3856, p= 0.000).

Labour (both family and hired labour) was another variable used in the production period. Farmers used labour for plowing, sowing, weeding, harvesting and threshing of wheat crop. All labor hours used for wheat farming were converted into man- days (8 working hours as one man- day).Consequently, on average, model farmers utilized 29.58 labour per hectare while non- model farmers utilized 20.33 labors per hectare. This implies model farmers used more labour per hectare since they used hired labour worked for longer hours per day compared to non-model farmers.

Table 2: Descriptive Results of Input Variable

Variables	Model Farmer			Non-Model Farmer			Pooled		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Cultivated land(hec)	2.58	1	8.5	1.74	0.25	4.5	2.16	0.25	8.5
Land used for wheat farm(hec)	1.52	0.5	6	1.04	.25	3	1.28	0.25	6
Fragmented plots(No)	2.56	1	6	2.4	1	6	2.48	1	6
Improved seed(Quintal/hec)	1.95	0.01	12	1.08	.01	6	1.51	0.01	12
Local seed(Quintal/hec)	0.85	0.01	5	0.89	0.01	6	0.87	0.01	5
Fertilizer(Quintal/hec)	2.85	0.25	12	1.75	0.25	6.5	2.3	0.25	12
Chemicals(ml/hec)	1162.92	40	6240	421.05	1	2400	791.99	1	6240
Labour(No/hec)	29.58	5	140	20.33	5	60	24.95	5	140

Obs=700, Model farmers =350, Non- model farmers 350, Min=Minimum, Max= Maximum

Wheat Output

The survey result in table 4.3 showed that, model farmers produced, on average, 32.88 quintal per hectare and 49.98 quintal per farmer and non- model farmers produced, on average, 29.36 quintal per hectare and 30.54 quintal per farmer. The overall, mean, wheat output per hectare was 31.45 quintal. The t- test statistics showed that the mean difference in wheat output produced between model and non- model farmers (per farmer) is statistically significant at 1% level (t=9.2097 p=0.000).This implies model farmers produced more compared to non- model farmers and this is because of model farmers use more selected seed, fertilizer, labour and chemical to increase production compared to non-model farmers and better perform agricultural practices.

Table 3: Average Wheat Output by Groups of Farmers

Groups	Obs	Mean	Min	Max	Total output	Total land(hec)	Output/hec
Model farmers	350	49.98	6	288	17,493	532	32.88
Non-model farmers	350	30.54	3	108	10,689	364	29.36
Overall	700	40.26	3	288	28,182	896	31.45

Note: hec=hectare, Output/hec=Output per total land, Mean=output per farmer

Econometrics Result

Maximum Likelihood Estimation of Stochastic Production Frontier Model

The econometrics result showed that Lambda (λ) value was 2.82 and 2.15 for model and non-model farmers respectively and suggested that the greater variation in wheat output is contributed by technical inefficiency rather than factor outside the control of farmers, because λ is greater than one (1). Moreover, λ value greater than 1 also shows a good fit for the estimated model and the correctness of the distributional assumptions, half normal (Ojehomon et al., 2013).

The value of this discrepancy ratio (γ) was found to be 0.89 and 0.82 for model and non- model farmers respectively and 0.84 for pooled ones. This coefficient, γ, is interpreted as about 89% of the variability in wheat output among model farmers and 82% among non- model farmers within the production year was contributed to technical inefficiency effect (u_i) which are under the control of farmers, while the remaining 11% and 18% variation in output was due to effects of random noise (v_i) which are outside the control of farmers for model and non- model farmers. This implies model farmers have better capability to mitigate factors outside their control, for instance, timely sowing, use of early mature crop varieties, constructing flood diversion channel, etc. than non- model farmers (Table 5).

Returns to scale is another important feature of Cobb-Douglas production function. The econometrics analysis indicated that model farmer's exhibits constant returns to scale, this means if model farmers increase all input by 1% output also increases by the same percent while non- model farmers' exhibits decreasing returns to scale, this implies if non-model farmers increase all input by 1% out will increase by less than 1% (Table5).

Regarding interpretation of input variable coefficients for model farmers, land used for wheat farm (lnland), Fertilizer (lnFertiz) and both family and hired labour (lnlabour) statistically significantly affects wheat output. Therefore, the econometrics result showed that coefficient of elasticity for lnland was 0.764 that is a 1% change in size of land in hectare will bring about a 0.764% change in wheat at output at 1% level of significant if all other covariate held constant. Similarly, 1% change in fertilizer usage resulted in 0.142% change in wheat output keeping all other covariate constant. Moreover, a percentage change in the use of more labour contributes to a change by 0.086% in wheat output.

However, for non- model farmers all input variables, that is, land, improved seed, fertilizer, chemical and labour are statistically significant in affecting wheat output. Land has a coefficient of elasticity 0.77, meaning, a 1% increase in size of land will result in 0.77% in increase in wheat output, keeping all covariate constant and a 1% increase in the use of improved seed per hectare will bring about 0.013% change in wheat output as well as a percentage change in the use of fertilizer per hectare will result in 0.232% change in wheat output. But chemical and labour usage have negative coefficient of elasticity and interpreted as a 1% increase in the use of chemical and labour per hectare will bring about a decrease in wheat output by 1.84% and 1.74% respectively. This implies chemical and labour are under- utilized as land used for wheat farm is small compared to model farmers (1.52 hectare for model and 1.04 hectare for non-model farmers) and non-model farmers need to give due attention for other types of inputs and agronomic practices.

Table 5: Maximum Likelihood Estimates of The Cobb-Douglas Stochastic Production Frontier

Input Variables	Parameter	Model farmers			Non- Model farmers			Pooled		
		Coeff.	Z	P>|Z|	Coeff.	Z	P>|Z|	Coeffi.	Z	P>|Z|
Cons	β_0	3.20	24.83	0.000***	-2.93	31.93	0.000***	3.39	38.56	0.000***
lnland	β_1	0.764	14.57	0.000***	0.77	15.14	0.000***	0.765	20.18	0.000***
lnimp_seed	β_2	0.005	0.61	0.539	0.01	2.22	0.026**	0.014	2.76	0.006***
lnFertiz	β_3	0.142	3.04	0.002***	0.23	4.83	0.000***	0.186	5.55	0.000***
lnchem	β_4	0.022	1.57	0.115	-0.02	-1.84	0.066*	0.008	0.88	0.381
lnlabour	β_5	0.086	3.11	0.002***	-0.05	-1.74	0.081*	0.030	1.42	0.156
Sigma v (σ_v)		0.175			0.19			0.195		
Sigma u (σ_u)		0.496			0.42			0.454		
γ		0.89			0.82			0.84		
Lambda(λ)		2.82			2.15			2.32		
Returns to scale	ΣB^s	1.02	31.8	0.000	0.93	28.8	0.000	1.00	41.5	0.000
Wald chi2(5)		984.4**			1086.8***			2510.4***		

*The dependent variable is lnwheat output (lnwoutp_total), ***,** significant at 1% and 5% level

Estimating Technical Efficiency Score

The mean level of technical efficiency for model farmers was 81% with minimum and maximum efficiency 32% and 96.5% respectively. This score implies there is a wider disparity in technical efficiency among wheat producing model farmers themselves. The mean score can be interpreted as farmers can increase wheat output by 19% without decreasing the existing input level but by only improving technical efficiency in the short run, but, in the long run, improving the existing level of technical efficiency of farmers alone may not lead to significant increase in wheat output, it needs best alternative agronomic farming practices and modern technologies (Table 6).

On the other hand, the mean level of technical efficiency for non- model farmers was 79% with minimum and maximum score 23% and 96.2% respectively. Here is also a significant difference in technical efficiency with in non-model farmers and there is also an opportunity

for non-model farmers to increase output by 21% only by improving technical efficiency without reducing input. Despite small numerically mean difference in technical efficiency between model and non- model farmer, the t-test statistics revealed that there is significant difference in technical efficiency scores between model and non- model farmers at 10% level(t=1.5903 p=0.0561). This implies that it is not much important to group farmers into model and non-model and provide differentiated extension service. Similarly, pooled (combined) farmers have meant technical efficiency score of 80% with minimum and maximum score 23% and 96.5% respectively (Table 6).

Table 6: Mean Technical Efficiency Score by Groups of Farmers

Group of farmers	Obs	Mean TE	Std. Dev	Min	Max
Model farmer	350	0.81	0.146	0.32	0.965
Non-model farmer	350	0.79	0.148	0.23	0.962
Pooled	700	0.80	0.147	0.23	0.965

Source: Survey result, 2019

Determinants of technical inefficiency

Technical inefficiency of wheat production for model farmers is significantly affected by mode of plowing, mode of harvesting, shock, training and market. The econometrics result showed that plowing wheat land both by oxen and tractors reduces technical inefficiency by 0.878 compared to plowing land only by oxen at 1% level of significant or technical efficiency of farmers who plow their land by both oxen and tractor greater by 0.878 compared to those who plow their land only by oxen, but plowing land by only tractor has no effect on technical inefficiency compared to plowing only by oxen (Table 8).

Harvesting is another variable which affects technical inefficiency of wheat production of model farmers. The econometrics result showed that harvesting wheat manually increases technical inefficiency or decreases technical efficiency compared to harvesting by only combiner at 1% level of significant and technical inefficiency increases for farmers who harvest wheat crop both by combiner and manual compared to those harvesting by only combiner at 5% level of significant.

Model farmers, who did not experience shocks like disease, weed, frost etc had lower technical inefficiency compared to those who confronted shock at 1% significant level and model farmers who did not got training related to wheat production had higher technical inefficiency compared to those who were trained at 1% level of significant (Table 8).

Marketing is the other variable which affects technical inefficiency of wheat production and those model farmers who did not face marketing problem to wheat output had higher technical inefficiency (lower technical efficiency) in production compared to those who said “yes” to marketing problem. This is more likely true that these model farmers who did not faced marketing problem, produced less and used their wheat output for personal consumption rather than supplying for sales.

Level of education affects technical inefficiency negatively and the econometrics result indicated that non- model farmers who attended basic education, grade 1-8 and grade 9-12 had

less technical inefficiency(technically more efficient) compared to those who were illiterate at 5% and 10% level significant. This implies education improves technical and managerial abilities of non-model farmers in wheat production.

Land fragmentation hypothesized to affect technical inefficiency either positively or negatively. The econometrics result revealed that the coefficient of land fragmentation is negative which implies that if land fragmentation decreases by one plot, technical inefficiency of farmers also decreases and is significant at 5% level. Because the time taken to move from one plot to the other decrease. Furthermore, non- model farmers who harvested wheat by manually only, their technical inefficiency increases compared to those farmers harvesting by combiner only, but those non- model farmers who harvested by both combiner and manual, their technical inefficiency did not significantly different compared to those harvested by combiner only. This implies that to have better technical efficiency in wheat production non-model farmers should harvest their wheat by combiner only as this mode of harvesting reduces wastage resource.

Marketing has a positive sign coefficient implying that those farmers who respond "no" to marketing problem are technically inefficient compared to those replied "yes" to marketing problem at 1% level of significant. Empirically, the mean efficiency of model and non- model farmers who said "faced market problem or yes" is 85% and 83% respectively and the mean efficiency of model and non- model farmers who said "no" to market problem is 78% and 76% respectively (Table 7 and 8).

Table 7: Mean Efficiency Comparison by Market and Group of Farmers

Did you face Marketing problem?	Model Farmer			Non- Model Farmer			t-test
	Freq.	%	Mean Efficiency	Freq.	%	Mean Efficiency	
Yes	134	38.29	0.85	143	40.86	0.83	1.5375
No	216	61.71	0.78	207	59.14	0.76	1.3133

Table 8: Maximum-Likelihood Estimates of The Inefficiency Variables

Ineffi.	Para	Model farmers			Non- Model farmers			Pooled		
Variables	met	Coeff.	Z	P>|Z|	Coeff.	Z	P>|Z|	Coeff.	Z	P>|Z|
Cons	δ_0	-2.610	-0.87	0.387	4.13	1.34	0.18	1.894	1.16	0.246
age	δ_1	0.006	0.06	0.952	-0.164	-1.57	0.117	-0.105	-1.68	0.092*
Age^2	δ_2	0.002	0.22	0.827	0.001	1.41	0.160	0.001	1.79	0.073*
sex	δ_3	-0.460	-0.90	0.37	0.966	-1.29	0.198	-0.605	-1.27	0.203
Education										
Basic education	δ_4	-0.284	-0.57	0.572	-1.167	-1.71	0.087*	-0.783	-2.32	0.020**
Attended grade 1-8	δ_5	-0.154	-0.32	0.749	-1.138	-2.49	0.013**	-0.780	-2.64	0.008***
Attended grade 9-12	δ_6	-0.460	-0.85	0.394	-1.262	-1.78	0.079*	-1.059	-3.14	0.002***
Fragment	δ_7	0.106	0.85	0.393	-0.416	-2.09	0.037**	-0.088	-0.97	0.332
Plow										
Tractor only	δ_8	-1.107	-0.92	0.359	-0.270	-0.17	0.866	-0.722	-0.92	0.356
Both by ox and tractor	δ_9	-0.878	-2.62	0.009***	-32.11	-0.02	0.987	-1.225	-4.49	0.000***
Harvest										
Manual only	δ_{10}	2.32	4.74	0.000***	1.314	2.96	0.003***	1.398	5.34	0.000***
Both combiner and manual	δ_{11}	0.996	2.31	0.021**	-0.709	-0.91	0.364	0.444	1.68	0.093*
Shock	δ_{12}	-2.72	-4.70	0.000***	-0.552	-0.99	0.322	-1.753	-5.45	0.000***
Extension	δ_{13}	-0.479	-1.10	0.269	-0.635	-0.66	0.510	-0.461	-1.43	0.154
training	δ_{14}	1.268	2.61	0.009***	-0.413	-0.47	0.64	0.717	2.13	0.033**
market	δ_{15}	0.706	1.96	0.050**	1.323	2.74	0.006***	0.768	2.77	0.006***

Source: Survey data 2019, ***, **, * significant at 1%, 5% and 10% **Note:** The reference category for sex is male, for education is never attended, for plow is plowing only by oxen, for harvest is harvesting only by tractor, for shock is "yes", for training is "yes" extension "yes" and for market is "yes".

V. Conclusion and Recommendation

The descriptive result showed that model farmers used on average 1.52 hectare of land for wheat farming while non-model farmers used, on average, 1.04 hectare. This land was fragmented, on average, in to 2.56 and 2.4 hectare respectively for model and non- model farmers. Similarly, model and non- model farmers used, on average, 2.85 and 1.08 quintal of selected seed, 2.85 and 1.75 quintal of fertilizer and 29.58 and 20.33 labour in man day respectively. Using these and other inputs variables, model and non-model farmers obtained on average 32.82 and 29.36 quintal of wheat produce per hectare.

The econometrics result also showed that λ had 2.82 and 2.15 value for model and non- model farmers respectively which indicate that greater variation in wheat output is contributed by technical inefficiency rather than factor outside the control of farmers. The value of discrepancy ratio (γ) which indicates technical inefficiency variability was 0.89 and 0.82 for model and non- model farmers respectively and 0.84 for pooled ones.

Model farmers wheat output was statistically significantly influenced by land used for wheat farm, fertilizer and both family and hired labour with expected sign while all input variables statistically significantly affect wheat output of non- model farmers with expected coefficient sigh except chemical and labour. Regarding the mean technical efficiency score, model farmers scored 81% and non-model farmers scored 79% and the overall farmers scored 80% suggesting that there is room to increase technical efficiency of wheat farming if farmers improve the overall use of scarce resources.

Similarly, model farmers' technical inefficiency in wheat farming was statistically significantly determined by mode of plowing, mode of harvesting, shock, training and marketing and that of non- model farmers' technical inefficiency in wheat farming was significantly determined by mode of harvesting, level of education, land fragmentation and marketing. Thus, training, solving marketing problem, encourage farmers to plow land by both oxen and combiner and harvest with combiner to reduce wastage, and strategic plan to mitigate factors beyond the control of farmers. In addition, education, improvement of land fragmentation problems, use of improved seed and chemicals need to get better attention for non-model farmers.

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2.8. User Perception on Disclosure: A Comparative Analysis of Public and Private Banks in Ethiopia, by Tafa Mosisa

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Abstract

This study investigates the views and perceptions of users on disclosure and the extent of disclosure by Ethiopian banking sector. The questionnaire was distributed and collected from a sample of 509 respondents from five groups of information users. The data were analyzed using percentage, mean and kruskal-wallis H test. The result shows that most of the user groups regard annual reports as the most important source of information and they attached the highest importance to the income statement section of annual reports. Majority of the user groups attached highest ranking for the relevance attribute for the annual reports of Ethiopian banks. However, most of the user groups view reliability as the most important attribute of information. The users perceive that public bank disclose more information with better quality than private banks and the same results were found by analysis of banks annual reports. Users perceive delay in publishing annual reports, lack of reliability of information, lack of access to annual reports and compliance with accounting standards as the most serious problems. The Kruskal-wallis H test shows that there was significant difference among user groups on the frequency of annual report usage, purposes of annual reports, sources of information, significance of the problems and sections of annual reports. Therefore, the study suggests management of the banks to work towards solving disclosures problems, increase the quantity and quality of information disclosure. The government regulatory bodies should formulate and enforces the policy to make banks solve their disclosures problems, improve the quantity and quality of information disclosure.

Key words: Disclosure; Ethiopian banks; Information; Users' perceptions

I. Introduction

The banking sector plays the most important financial intermediaries' role and acts as the primary source of financing an economy. According to the theory of financial intermediaries, banks are able to reduce transaction costs and resolve information asymmetries between borrowers and lenders (Diamond, 1984; Saunders and Cornett, 2012). The Commercial bank as a type of financial institution plays intermediary role that provides liquidity insurance, monitoring services and producers of information (Santos, 2000).

Effective information provision system is very important in establishing strong banking institution. Putu et el., (2012) states that financial information is needed by all the stakeholders in order to make informed decisions. Information disclosure is the important element of financial reporting. According to Spiegel and Yamori (2004) effective and full disclosure is generally regarded as the essential condition for the discipline of markets in modern financial

sectors. Huang (2006) stated that accounting disclosure in the banking sector is important over and above those in other sectors. Disclosure can be explained as the communication of economic information which includes financial or non-financial, quantitative or qualitative relating to the organizations financial position and performance (Owusu-Ansah, 1998). Disclosure is defined in accounting literature as providing business information to the public by financial statements (Agca and Onder, 2007). Annual report by the firms is usually prepared according to two dominant standards; generally accepted accounting principles (GAAP) and international financial reporting standards (IFRS). According to the investors' interest, these standards do not provide all the necessary information and as a result there are some deficiencies (Shuster and O'Connel, 2006).

The price of the stock is varying over time because of different factors which is categorized as company internal factors and external factors. Regarding to this fact, Hartono (2004) found that the basic perception of financial statements users is the important determinant of desired return. Cooper (2003) stated that perception is the mechanism with which a person evaluates things from the external environment, which, in turn, determines a person behavioral response. According to Rouf (2011) disclosure and transparency induce corporations to better shelter investors, and thereby increase investors' confidence in capital markets. Timely, relevant, reliable and comparable information about marketable securities are significant for both pricing efficiency and market confidence. Regarding to the level of information disclosure the empirical literature shows state or private ownership of companies influences their level of disclosure in different countries (see for instance; Ferguson et al., 2002; Yang et al., 2013 and OECD, 2017).

Modern banking system was commenced in Ethiopia in 1905 based on the agreement made between the Ethiopian government and British owned national bank of Egypt (NBE, 2020; Geda, 2006 and Mauri, 2011). From 1905-1991 different banks were established, but liquidated and merged under different regimes because of the Italian invasion, changes in government regulations and policy changes (NBE, 2020 and Mauri, 2003). Following the declaration of the liberal economic system in 1991 private banks have been established over the years and recently reached 16 private banks and two public banks. Ethiopian banking system primarily focuses on resource mobilization, disbursement of loans and outstanding credit (NBE, 2020).

Several studies have found different results on the perception of users on the information reporting or disclosure of firms. For instance, users have different views on the use of company reports to make informative decision, primary sources of information, features of useful corporate information, important parts of corporate annual reports and quality of information (see for example; Naser et al., 2003; Abdelkarim et al., 2009; Babu and Hossain, 2014 and Alfraih and Almutawa 2014).

Regarding to information disclosures by Ethiopian banks only few studies have been conducted. Only two studies conducted by Rao and Desta (2016) and Khan and Abera (2015) on disclosure practices and the determinants of the levels of disclosure of Ethiopian banks are available. But, there is no study conducted on the perception of users on information disclosure by Ethiopian banks. Thus, examining the perception of the users on the Companies information

disclosures is very essential to fill the literature gaps and provide implications for different stakeholders.

Therefore, this study is needed and different from the previous studies that conducted regarding the users perception on banks information disclosures in several aspects including: first, the previous studies found inconsistent results. Second, most of the previous studies were conducted in developed countries which mean little is known about developing countries and moreover there is no similar studies conducted in Ethiopia on the users' perception on information disclosure. Third, unlike previous studies this study analyzed the views of several user groups. Fourth, unlike previous studies this study compares the users' perception on information disclosure by Ethiopian public bank and private banks. Hence, the main aim of this paper is to examine the user's perception on corporate disclosure in Ethiopian public and private banks. The specific objectives of the study are the following:

1. *To describe the sources of Ethiopian banking industry information used by the various user groups.*
2. *To examine the views and perceptions of Ethiopian banks annual report users on characteristics of useful corporate information.*
3. *To analyze the perceptions of various user groups on regarding the importance of disclosure items by Ethiopian banking industry.*
4. *To examine the extent of disclosure provided by public and private banks in Ethiopia over the study period.*

II. Methodology

This study is intended to examine the user's perception of the information disclosure using cross sectional data and examines the extent of information disclosure by the Ethiopian commercial banks measured using the annual reports during the period 2010 to 2018. To provide empirical evidence on the set objectives and formulated hypotheses data about the perception of users on information disclosures were gathered using questionnaire and data for the evaluation of the extent of disclosure was obtained through reviews of annual reports of the banks.

The total of 736 (including 60 questionnaires for pilot study) questionnaires were distributed to different user groups of information disclosure including investors (shareholders), tax officers, national bank of Ethiopia (NBE) officers, academic staffs of accounting and finance and auditors. The validity of the instrument was ensured, and the reliability of the instruments was tested using Cronbach alpha coefficient, which is 0.755, 0.724, 0.778 and 0.739 for objective one to objective four respectively and which is considered good.

During the data collection there were 17 commercial banks in Ethiopia including one public bank and 16 private banks. However, only 11 were included in the study due to the short duration of the establishment of the excluded banks and inconvenient to collect data. These banks are commercial bank of Ethiopia, Awash bank, bank of Abyssinia, Dashen bank, united bank, Oromia international bank, Cooperative bank of Oromia, Bunna international bank, Wegagen bank, Nib international bank and Zemen bank. From the users' information side

investors, academic staff (accounting and finance), NBE officers, tax officers, and auditors were the population of this study.

The total shareholders of the selected 10 private commercial banks are counted to 69,657. This means 69, 657 is the population of the shareholders. The sample size for this population is determined using Yemane (1967) formula which is used to calculate a sample size under the assumption of a 95% confidence level and P=0.05.

$n= N/1+N (e)^2$

Where:

n= is the sample size

N=is the population size

e= is the level of precision

Therefore, by applying the above formula the sample size for the population of 69,657 shareholders, at 95% confidence level and p=0.05 is determined as follows:

$n= 69,657/1+69,657(0.05)^2$

= 398 shareholders.

A number of sample units were drawn from each bank in proportion to their population size, which is using proportional systematic sampling, since the shareholders are already stratified by the bank in which they made investment.

The second target population of the study is academic staff. Recent data shows that in Ethiopia there are a total of more than 50 private and government Universities. From the total Universities a sample of 5 government universities and 5 private universities/university colleges are selected using judgmental sampling. The Universities included in samples are; Addis Ababa University, Ethiopian Civil service University, Haramaya University, Hawassa University, and Mekelle University from Government Universities. From private universities the samples are Unity University, Rift Valley University, Saint Mary's University, Alpha University college and Admas University.

The total population of permanent academic staff in selected Universities is counted to be 358. The sample size for this population is determined using Yemane (1967) formula which is used to calculate a sample size under the assumption of a 95% confidence level and P=0.05.

$n= N/1+N (e)^2$

Where:

n= is the sample size

N=is the population size

e= is the level of precision

Therefore, by applying the above formula the sample size for the population of 358 academic staff, at 95% confidence level and p=0.05 is determined as follows:

$n= 358/1+358(0.05)^2$

$= \underline{\underline{189}}$

A number of sample units were drawn from each university in proportion to their population size, which is using proportional systematic sampling, since the academic staffs are already stratified by the University, they are working in. This means after allocating the total sample size to each university in proportion to their population size, systematic sampling was applied to draw a sample from each university. On the other hand using judgmental sampling 32 officers from national bank of Ethiopia, 23 officers from ministry of revenues and 34 auditors from audit firms and accounting and auditing board of Ethiopia were selected.

The collected data were analyzed using percentage, mean, Chi-square and Kruskal-Wallis H test. Chi-square and Kruskal-Wallis H test were applied to measure the similarity among the user groups' views on the information disclosure of banks and level of disclosure during the period 2010 to 2018. Sieggel and Castellan (1988), Naser et al., (2003) and Mirshekary and Saudagaran (2005) suggests that for an ordinal scale data a non-parametric method is an appropriate method to test the similarity or differences among the groups that is using Kruskal-wallis H test. Hence Kruskal-wallis H test was used to test the possible differences among the user groups.

Regarding to the extent of disclosure this study used the standardized transparency and disclosure items set by standard and poor to evaluate the disclosure practices of Ethiopian commercial banks. However, from the total 98 transparency and disclosure items set by standard and poor only 91 items are applicable in Ethiopia commercial banks. Thus, the score out of 91 items are presented in number and percentage. To assign score for each item of information, this study applied unweighted index. Unweighted evaluation method award one when the item is disclosed and zero when the item is not disclosed. Unweighted index preferred over the weighted index for many reasons (see for instance; Firth, 1979; Patel and Dallas, 2002; Utama and Utama, 2012; Sharif and Lai 2015). Accordingly, the unweighted disclosure scoring method measures the total disclosure (TD) score of a banking firm as summative (Cooke, 1992) as follows:

$$TD = \sum_{i=1}^{n} d_i$$

Where,

$d = 1$ if the item d_i is disclosed

$d = 0$ if the item d_i is not disclosed

n = number of items

III. Review of Related Literature

Annual report of the firms is prepared either based on GAAP or IFRS. In Ethiopia the financial disclosure requirements of the bank was based on the GAAP financial reporting standard. But from 2018 onwards banking sector were required to prepare their reports using IFRS.

There are several groups of users of corporate financial information. These include the government, creditors, shareholders, labor unions, trade unions, employees, financial analysts, brokers, potential investors, bankers, taxing authority, teachers, suppliers, customers, competitors and press (FASB, 1978; Lunt, 2006; Albrecht et al., 2011; Kieso et al., 2013). However this study emphasizes only on the perception of five groups of information users presented in the following diagram.

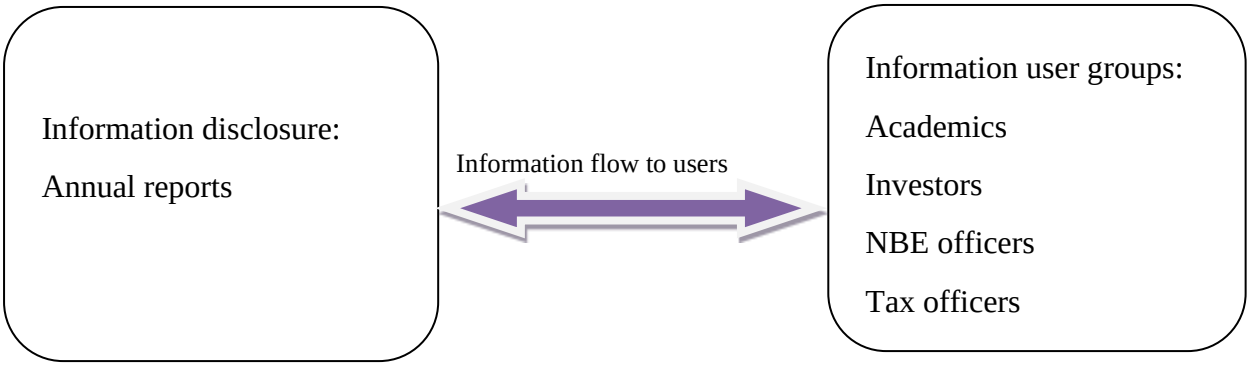

Figure1: information disclosure and perception model

Source: Developed from the literature (FASB 1978; Albrecht et al., 2011 and Kieso et al., 2013)

Based on the reviewed literature the following hypotheses are developed and tested:

H_O1: There is no significant difference among user groups on their frequency of annual reports usage.

Ho2: There is no significant difference among user groups in their perceived importance they attach to various sources of information.

Ho3: There is no significant difference among user groups in their perceived importance they attach to different sections of annual reports.

Ho4: There is no significant difference among user groups in their perceived importance they attach to the characteristics of information.

Ho5: There is no significant difference among user groups' views on the problems with using Ethiopian banks annual reports.

The next section of this paper is structured as follows: section two discusses reviews of related literature; Section three presents methodology of the study. The fourth section presents the result and discussion of the study. Section five present the conclusions and recommendations.

IV. Result and Discussions

This section of the paper analyzed and discussed the data collected through questionnaires and review of annual reports. Out of the total 676 questionnaires surveyed, 509 questionnaires were properly filled and returned which makes the overall response rate 75 percent. However, the response rate varies from one group to the other which ranges from as low as 73 percent from the investor group to 87 percent from tax officers. The results of both types of data are discussed and presented as follows.

Important Sources of Information and Frequency of Usage

Table 1. Frequency Of Annual Report Usage in Percentage

Frequency	Academics	Investors	NBE officers	Tax officers	Auditors
Always	4.9	13	42.3	4.8	10.7
Usually	9.1	21.5	3.8	42.9	3.6
Sometimes	24.5	31.3	38.5	19	50
Occasionally	61.5	34.2	15.4	33.3	35.7
Never	0.0	0.0	0.0	0.0	0.0
Chi-square test(χ^2)			101.948(p=0.000)*		

Source: Survey by the researcher, 2019

A response from the information users' shows high disparity among the user groups in terms of the frequency of their information usage. All respondent groups use information from the level of occasional to always. However, there is disparity between the user groups on frequency of the annual report usage. Moreover the result of chi-square test shows statistically significant (101.948(p=0.000) * differences at the 1 percent significance level for all the five levels of the frequency tested. Therefore, the hypothesis that there is no significant difference among the user groups on frequency of usage of information is not supported.

Table 2. Importance's of Different Sources of Information as Mean Scores

Sources of information	Academics	Investors	NBE officers	Tax officers	Auditors
Advice of friends and relatives	3.4	3.5	3	3.3	3.3
Communication with management of banks	3.7	4.2	4.1	3.9	4.1
Annual reports	3.9	4.2	4.2	3.9	4.2
Specialist's advice or advisory services	3.7	3.5	3.3	4.1	3.8
Newspapers and magazines	3.4	3.8	3.4	3.9	3.5
Kruskal-wallis test(χ^2):					
Communication with management of banks		30.337(p=0.000)**			
Annual reports		12.129(p=0.016)*			
Newspapers and magazines		22.724(p=0.000)**			

Note: ranges from, 1=not important at all; to 5=very important

Source: Survey by the researcher, 2019

As indicated in table 2 all user groups (except tax officers) regard annual reports as the most important sources of information they use for decision making (judgmental) purpose. It is obvious to see from the table 2 that most of the users' rate annual reports either very important or important. Tax officers regard specialist's advice or advisory services as the most important sources of information. Similarly, investors consider communication with management of banks as the first most important source of information being equal with annual reports. The result of this study is similar with the findings of Naser et al., (2003), De Zoysa and Rudkin (2010) and Mirshekary and Saudagaran (2005) they found that the user groups belief annual reports as the most important source of financial information. Kruskal-Wallis test results indicate that there is statistically significant difference among user groups on their perceived importance level of communication with management of banks at 1 percent, annual reports at 5 percent and newspapers and magazines at 1 percent. But there is no significant difference among the user groups on advice of friends and relatives and specialist's advice or advisory services. Therefore, the hypothesis that there is no significant difference among the user groups on sources of information is supported only for advice of friends and relatives, and specialists' advice or advisory services.

Importance of Ethiopian Banks Information

Table 3. Views On the Importance of Information Provided in Ethiopian Bank's Annual Reports in Terms of Alternative Purposes

Purposes	
Kruskal-wallis test(χ^2):	
To provide information to investors to assist them with future decisions	15.351(p=0.004)**
To help investors in monitoring their existing investments	12.774(p=0.013)*
To provide information about corporate governance standards	14.945(p=0.005)**

Note: ranges from, 1=not important; to 5=very important

Source: Survey by the researcher, 2019

The user groups have different views on the primary purpose of providing information to the user groups. Most of the user groups perceive that the primary purpose of annual report is to provide information to the national bank for monitoring and supervision purpose. Investors and auditors perceive that the primary purpose of annual reports is to provide information to investors to assist them with future decisions. But auditors perceive providing information to help investors in monitoring their existing investments and to provide information to Ethiopian tax authorities also as the primary purpose of annual reports. This result is partly consistent with the study result by Dawd, et al., (2018) which found that information users' in Kuwait view that the most important purpose to provide information in annual reports is to help investors in making their investment decision.

The Kruskal-Wallis test results show that there is statistically significant difference among the user groups on their perceived purposes of information in annual reports to provide information to investors to assist them with future decisions at 1 percent, to help investors in monitoring their existing investments at 5 percent and to provide information about corporate governance standards at 1 percent. But there is no statistically significant difference among the user groups on the other purposes of information provided in annual reports.

Attributes of The Information Disclosures in Annual Reports

Table 4. Assessment Of the Attributes of The Financial Information in Annual Reports of Ethiopian Banks

Attributes	Academics	Investors	NBE officers	Tax officers	Auditors
Quantity of the information	3.6	3.6	3.5	3.6	3.5
Understandability of the information	3.9	3.7	3.6	3.9	3.7
Relevance of the information	3.9	4.0	3.8	4.2	3.9
Reliability of the information	3.8	3.9	3.8	4.1	4.0
Comparability of the information	3.8	3.8	3.8	3.9	3.8
Materiality of the information	3.8	3.9	4.0	4.0	3.8
Kruskal-Wallis test(χ^2): All results are not significant					

Note: ranges from, 1=very poor; to 5=excellent

Source: Survey by the researcher, 2019

The quantitative and qualitative attributes of Ethiopian banks accounting information that drawn from ASB (1991) and FASB (2005) were assessed using user groups' perception. Accordingly three (academics, investors and tax officers) of the five user groups attached the highest ranking for the relevance attribute for the information disclosed in Ethiopian banks annual reports. Academics user groups attached understandability of the information highest

ranking equal with the relevance of information. NBE officers and auditors attached highest ranking for the materiality and reliability of the information respectively for the information disclosure in annual reports. Stainbank and Peebles (2006) have found that in South Africa users attached high importance for the comparability, faithful representation and relevance; Whereas Naser et al., (2003) have found that in Kuwait users viewed credibility and timeliness of information as the most important features of useful information; in contrary Dawd (2010) has found that in Kuwait users perceived reliability and understandability of information as the most important feature of corporate information. User groups perceived that quantity of information is the attribute least maintained by banks in information disclosure in annual reports. However, in terms of importance (based on their interest) most of the user groups view reliability of information as the most important attribute of information and all user groups view relevance as the second most important attributes of information.

The Kruskal-Wallis test result indicates that there is no statistically significant difference among the user groups in their perception in all attributes of financial information disclosure. Thus, the hypothesis that there is no significant difference among the user groups on the attributes of information disclosure on annual reports is supported.

Public Bank Versus Private Banks in Terms of Attributes of Information

Table 5. Assessment Of the Attributes of Public Bank Annual Reports Relative to Private Banks

Attributes	Academics	Investors	NBE officers	Tax officers	Auditors
Quantity of the information	3.7	3.6	3.6	3.7	3.6
Understandability of the information	3.8	3.7	3.5	4.0	4.0
Relevance of the information	3.8	3.8	3.9	4.0	3.9
Reliability of the information	3.8	3.7	3.8	4.1	3.9
Comparability of the information	3.8	3.6	3.8	4.0	3.7
Materiality of the information	3.8	3.7	3.7	4.1	4.0
Kruskal-wallis test(χ^2): Understandability of the information					8.683(p=0.048)

Note: ranges from, 1=very poor; to 5=excellent

Source: Survey by the researcher, 2019

As shown in table 5 most of the user groups rate that the public bank information disclosure as either good or very good relative to private banks information disclosure that is in terms of quantity, relevance, reliability, understandability, comparability and materiality of information disclosed in annual reports. Users attached the highest rank for the relevance and reliability attributes for information disclosed by the public bank than other attributes when compared with the attributes of information disclosed by the private banks. The Kruskal-wallis test result indicates that there is significant difference among the user groups on their perception of the understandability of the information disclosed by public bank relative to private banks which is statistically significant at 5 percent. But the user groups have no significant differences on their perception of the attributes of the information disclosed by public bank relative private banks. Therefore, the hypothesis that there is no significant difference among the user groups' views on information disclosed by public and private banks is not supported for the attribute of understandability, while the hypothesis is supported for the other attributes.

Significance of Problems in Using Annual Reports

Table 6. Views On the Significance of The Problems When Using Ethiopian Banks' Annual Reports

Problems	Kruskal-wallis test(χ^2)
Delay in publishing annual reports	11.466(p=0.022)
Lack of access to annual reports	10.095(p=0.039)

Note: ranges from, 1=not significant at all; to 5=very significant

Source: Survey by the researcher, 2019

According to three user groups (Academics, NBE officers and Auditors) delays in publishing annual reports is the most serious problem. Investors viewed lack of reliability of information and lack of access to annual reports as the most serious problems and delay in publishing annual reports as the second most important problems in using companies' information. Tax officers viewed lack of compliance with accounting standards as the most serious problems. Studies conducted by Mirshekary and Saudagaran (2005) in Iran, De Zoysa and Rudkin (2010) in Sri Lanka and Dawd et al., (2018) in Kuwait found that the user groups viewed delay in publishing the annual report is the main factor restricting the use of annual reports. Kruskal-Wallis test indicates that there is a statistically significant difference among the user groups on the delay in publishing annual reports and lack of access to annual reports both at 5 percent significant level. The hypothesis that there is no significant difference among the user groups' views on the significance of the problems when using the annual reports of information is not supported for the delay in publishing annual reports and lack of access to annual reports. But the hypothesis is supported for the other problems.

Importance of The Section of Annual Reports

Table 7. Users View on The Importance of The Sections of Annual Reports in Their Financial Decision Making (Or Judgment) Regarding Ethiopian Banks

Sections of annual reports	Academics	Investors	NBE officers	Tax officers	Auditors
Balance sheet	4.1	4.4	4.4	4.2	4.3
Income statement	4.2	4.5	4.5	4.3	4.6
Statement of cash flows	4.0	4.3	3.9	4.2	4.6
Notes to the financial statements	3.9	4.2	3.8	4.1	4.5
Statement of retained earnings	3.9	4.3	3.5	4.1	4.6
Accounting policies	3.9	4.1	3.8	4.3	4.6
Directors' report	3.8	3.9	3.7	4.1	4.5
Auditor's report	4.2	4.3	4.2	4.2	4.3
Kruskal wallis test:					
Balance sheet			19.655(p=0.001)		
Income statement			16.891(p=0.002)		
Statement of cash flows			16.241(p=0.003)		
Notes to the financial statements			16.108(p=0.003)		
Statement of retained earnings			29.790(p=0.000)		
Accounting policies			17.945(p=0.001)		
Directors' report			13.955(p=0.007)		

Note: ranges from, 1=not important at all; to 5=very important

Source: Survey by the researcher, 2019

As indicated in table 7 the users perceive that income statement as the most important section of annual reports. This study result is consistent with the result of study conducted by Mirshekary and Saudagaran(2005) in Iran and Naser et al., (2003) in Kuwaiti that their study found that information users perceived income statement as the most important section of annual reports. Different with the current study result study conducted by Stainbank and Peebles (2006) found that the component of annual report which the information users in South Africa read thoroughly most is cash flow statement and followed by income statement. From these evidence we can understand that most users prefer to use income statement among other components of annual reports. This study found that the users' rate directors' report as the least important section of annual reports. The Kruskal-Wallis test reveals that there is significant difference among the user groups on the importance of balance sheet, income statement, statement of cash flows, notes to the financial statements, statement of retained earnings, accounting policies and directors' reports at 1 percent significant level. Only on importance of the auditor's report there is no significant difference among the user groups. Therefore the hypothesis that there is no significant difference among the user groups' views on the importance of the sections of the annual reports is not supported.

Public Versus Private Banks in Terms of Extent of Disclosure

Table 8. Public Versus Private Banks Extent of Disclosure

Year	Public		private	
	Score in number	Percentage	Score in number	Percentage
2010	44	48.4	44	48.4
2011	47	51.6	44	48.8
2012	47	51.6	46	50.8
2013	48	52.7	46	50.9
2014	53	58.2	46	51.1
2015	53	58.2	47	51.4
2016	53	58.2	48	52.5
2017	53	58.2	49	53.3
2018	53	58.2	49	53.3

Note: disclosure score based on transparency and disclosure items of standards and poor

Source: Annual reports of banks 2010-2018

As shown in table 8 both public and private banks level of disclosure has shown increases during the period. But their overall disclosure level is almost half of the transparency and disclosure items set by standards and poor. In recent years the disclosure level of public bank was constant, while the private banks disclosure level shows constant for some consecutive years and then increases and alike. Generally speaking during the analysis period the level of disclosure by public bank was higher than disclosure by private banks except in 2010 the disclosure level of both categories of banks was equal. This may indicate that private banks are not disclosing the detail and additional information voluntarily.

V. Conclusions and Recommendations

From the results this paper concludes that there is variance among the information user groups on the frequency of information usage, public banks disclose more information with better quality than private banks, the user groups perceive that the primary purpose of annual report is to provide information to the national bank for monitoring and supervision and to investors to assist them with future decisions. Most of the user groups regard annual reports as the most important source of information and majority of the user groups attached highest ranking for the relevance attribute for the information disclosed in annual reports by Ethiopian banks. Regarding to the importance of the attributes of information most of the user groups view reliability as the most important attribute of information. Moreover, users view income statement as most important section of annual reports.

Delay in publishing annual reports, lack of reliability of information, lack of access to annual reports and compliance with accounting standards are perceived by users as the most serious problems in using banks information. Further the views of the user groups have significant difference on the frequency of annual report usage, purposes of annual reports, sources of

information, significance of the problems and on the importance of sections of annual reports. However, there is no significant difference among the user groups on their views on the attributes of annual reports.

Therefore, the study suggests that management of Ethiopian public and private banks are suggested to work towards solving problems related to information disclosure such as delay in publishing, reliability of information, access to annual reports and compliance with accounting standards. The Ethiopia governing bodies of the corporate reporting are also suggested to formulate and enforce the policy to make the companies solve information disclosure related problems; improve the quantity and quality of information disclosure. The managements of the banks are suggested to increase the quantity of information they disclose.

This study suggests for the future research to focus on areas not covered in this study that includes the perceptions of the preparers of information disclosure and user groups of non-banking sector.

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3. PUBLIC EXPENDITURE MANAGEMENT

3.1. The Budgetary Implication of Aid Flow Pattern and Modalities onto Ethiopian Health Sector, by Zekia Yimam

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Abstract

In Ethiopia health sector foreign aid is a major source of revenue which contributes to the achievement the sector development goals. The purpose of this study is to examine the existing aid modalities and channels and how it is impacting the budget practice specifically the Ethiopian Health sector. The research employed a descriptive research method which involves both quantitative and qualitative approaches. The total population of study is composed of different experts found in the Federal Ministry Health and the two Cities Administration and all of them were taken as a study unit. Interview and questionnaires were used as a data collection tool. Qualitative data of the study were analyzed narratively while quantitative data were analyzed descriptively and presented using tables, graphs, and percentages. The study found out that, Ethiopia's health sector is greatly depending on donor financing. In the sector donor's support has been provided through three different funding channels and modalities which all of them have different impact on the management of foreign aid and budget practice specifically on allocation of resources. Accordingly, channel one A and channel two A found the most preferred funding modalities for the sector since it helps in budget management and resource allocation efficiency of the sector. On the other hand, channel three funding modality, while it contributes a significant amount of resource to the sector, it is difficult to track and record and ultimately makes difficult to know much is being spent on health hence affect resource allocation efficiency of the sector. Therefore, the research recommends that there is a need for further negotiation with donors to shift off -budget financing to on-budget to better track, plan and execute foreign aid along the country own resource and direct funding towards sustainable financing of the health.

Key words: resource allocation efficiency, aid modality and budget management

I. Introduction

Aid modality as a means of delivering aid determines how funds and knowledge are transmitted to recipient countries, how goods are procured, and how recipients and donors interact in such processes. Consequently, it importantly affects the nature of aid relationship and the effectiveness of addressing development problems in recipient countries (Ohno & Niya, 2004). During the last decade in aid effectiveness agenda, aid modality is one of the central issues that

determine effectiveness of development assistance. It is in a sense that aid effectiveness is about delivering aid in a way that maximizes its impact on development and achieves value for aid money. It is clear that the way aid delivered affects outcomes, and some aid modalities are argued to be more effective than others (Bandstein, 2007).

The modern aid-modalities argument says that, as a general rule, "it is better for countries' development in the medium and long run to channel assistance through their official budgetary and accounting systems" (Booth, & Fritz 2008). Further this issue is strengthened by the agreements in the Paris Declaration (2005) and Accra Agenda for Action (2008) and become the only international framework on the quality of aid. Accordingly this agreement put a significant pressure on donors to integrate aid resources into recipient country budgets, so that aid can be allocated alongside domestic resources and provide a comprehensive and accurate estimate of total available resources by increasing aid transparency and predictability. Accordingly improving the predictability, transparency and accountability of aid flows and strengthening the government capacity for integrating projected and actual (disbursed) flows in the budget process are essential elements of "good donor ship" principles (Ohno & Niya, 2004).

Ethiopia, like any other developing country is not in a position to mobilize enough domestic resources to finance government spending on different sectors of the economy. To finance this gap, it resorts to external assistance. According to OECD-DAC statistics, net ODA disbursement to Ethiopia amounted to USD 4074 million in 2018, making it the largest recipient among top ten aid receiving developing countries (OECD, 2018).

Being the largest recipient of official development assistance in the African region and other developing countries, donors play a significant role in Ethiopia's health system. The health sector has been one of the top aid investment destinations for several bilateral and multilateral donors. For instance, Ethiopia received the highest share of total development assistance for health amounting to US$ 828.3 million in 2015 and 50% of annual health sector budget in the year 2014/15. And in this specific year the average annual share of bilateral ODA to the health sector was one of the highest which is 23% of the total. Though this is large in terms of magnitude, the way of aid delivery, donor harmonization and fragmentation has been affecting the quality and its effectiveness.

Evidences showed that uneven aid disbursement and uncertain financial flow in the sector can undermine long term effort to build health system especially in the country like Ethiopia which aid covers most of the sector's budget form (Tolesa, 2017). The unpredictability of future funding and the sizable funding gap that existed in the sector worsened by the existence of low budget credibility which ranged from 94% to 17% during the2013/14–2016/17 period and timely utilization of resources. These may be explained by limited budget preparation and forecasting capacity, as well as unpredictable external aid flows to the sector (UNICEF, 2017).

Donor may contribute much amount of money than the government, however if this can be performed in such a way that maximize the value for money, it may not finance the priority of the government. This means that the fund allocated to programs and projects that may not always contribute to reaching the country's priority. Therefore, priorities identified in the

health sector strategic plan may remain underfunded while other less prioritized areas may be funded enough or over funded.

In this regard there are few studied conducted in Ethiopia. Tolesa (2017) conducted a study on the role of development partners on the Ethiopian Health sector during Health Sector Development Program IV and found out that the sector heavily financed by foreign aid. However, utilization of foreign aid resulted in less performance in the sector. Similarly, a study by Shumey, Teshome & Paul (2018) on the topic of Aid, Ownership, and Coordination in the health sector of Ethiopia found out that the sector has at once been heavily dependent on foreign sources and characterized by high aid fragmentation. A study by Getnet (2009) considers aid effectiveness in the health sector and found out that aid is not effectively coordinated in the health sector rather it is fragmented and unpredictable. There are several donors that have several projects but only a small share of the aid market.

However, none of these studies were tried to connect aid with the budget practice in Ethiopia. Therefore, the literature on the interplay between foreign aid and budgetary practice is so scarce that it could be said to be almost non-existent. In this respect, the researcher hope that this paper will provide an important contribution to a debate that has mostly happened in the policy arena the contribution of foreign aid flow in the country budget practice, largely unsupported by rigorous underlying research.

Thus, the current study has tried to investigate the impact of different aid modalities on the budget allocation and utilization specifically in Ethiopian Health sector and addressed the following specific objectives:

- *To evaluate the extent of aid predictability in Ethiopia health sector.*
- *To assess the effectiveness of different aid modalities from the perspective of budget allocation and utilization in Ethiopian health sector.*
- *To identify the challenges and constraints that affect effective aid utilization in the sector.*

II. Methodology

The research employed descriptive research method and have both qualitative and quantitative approaches during the data collection and analysis. However because of the nature of the problem and study questions, it profoundly depends on qualitative analysis of data from both primary and secondary source. For qualitative component data were collected from concerned parties on their opinions of the current aid flow pattern and the modalities in Ethiopian health sector and how impacting budget allocation efficiency of the sector. The quantitative component has been employed in collecting and analyzing data generated in quantitative form through questionnaires which are distributed and collected from the experts found FMOH and Bureau of Health.

Regarding the study area because most of the transactions related with the external assistance are managed at the federal level, the study focused on the ministry level which is the ministry of health (MOH). Nevertheless, in order to critically see the resource management, budgeting and financial reporting structure and relationship down the line, the two-city administration

(Addis Ababa and Dire Dawa) are considered together with the federal ministry. Therefore, the target population of the study is individuals which are found in the MOH and bureau of health of the two city administrations. Thus, departments which have a direct linkage with research area are targeted for the research. Therefore, individuals or experts which are found in these departments are taken as a target population of the study and the study applies census method by taking all the total population as a study unit.

In the study both primary and secondary source of data were used to obtain the required data. Therefore, questionnaires and in-depth interview were used as a primary data collection tools from primary source and secondary data was collected from different data bases of FMOH, OECD/DAC, and NHA. Accordingly, the data's collected both from primary and secondary sources have been analyzed using different techniques sequentially. Therefore, the qualitative data obtained from different sources were analyzed narratively and the quantitative data collected were analyzed descriptively and presented using graphs and percentages.

III. Results and Discussion

The Predictability of Aid in the Health Sector Financing

It is known that aid transparency is crucial for giving recipient governments clarity on available resources; line ministries can better formulate sector policies and plans, while ministries of finance and planning can allocate resources more efficiently among sectors (OECD, 2016). In this part of the study analysis were made to investigate to what extent aid is predictable to be included in the medium-term expenditure framework and in the annual budget of the sector. Aid predictability can be measured in different way. One of the common ways is comparisons of aid flows expected at the beginning of the year and outturns or comparing aid flows anticipated by aid recipients and ultimate disbursement by the donors of these recipients (Celasun & Walliser 2008).

Therefore, in this regard analysis of secondary data showed that even though medium term and annual aid predictability is increasing from time to time, there are still challenges that require further attention. The table above (Table 1) indicates that among the 24 donors only 15 (62%) of them provided resource projection during resource mapping exercise in the health sector transformation plan preparation. therefore, the information on the amount donor's contributions has been incomplete as information from some donors has not been captured.

Accordingly, to tackle this problem and to reduce the effect on overall resource management and allocation, the sector has a good practice of preparing the plan by considering this uncertainty. This is done by preparing the long-range plan under the two scenarios which is scenario one based on the financial data or resource projection by donors and the other is based on the simple analysis of past trend on the provision aid. In the preparation of the current HSTP a total of 3.3 billion USD was projected to be available for HSTP period under the first scenario. And a total of 4.3 billion USD was projected to be available for HSTP period under the second scenario. This shows there is one-billion-dollar gap between the two scenarios. Preparing the budget under different scenario would be helpful from the perspective of resource allocation decision (HSTP, 2015/16 - 2019/20).

Table-1: HSTP Resource Mapping summary of commitment by Development Partner

Development Partners Name	Provision of Medium Term Resource Projection	Development Partners Name	Provision of Medium Term Resource Projection
USAID	2015/16 to 2019/20	WHO	3 years
PEPFAR	5 years	World Bank	5 years
DFID	3 years	Global fund TB	3 years
EKN/the Netherlands Embassy	3 years	Global fund malaria	3 years
Irish Aid	5 years	Global fund HIV	3 years
Coraid	3 years	Global fund HSS	3 years
European union	5 years	GAVI HSS	3 years
Spanish aid	5 years	CIFF	3 years
UNICEF	5 years	GAVI Vaccine/forecasted	5 years

Source: Health Sector Transformation Plan, 2015/16 - 2019/20

On the other when we see the predictability based on commitment verses disbursement, donors are more predictable on annual than on medium term. The table below (table 2) indicates that donors make a commitment of USD of 946,915,360 for the year 2015/16 on the HSTP resource mapping or projection during the preparation of HSTP which is made on medium year bases whereas donors make a pledge of USD 271,508,677.44 on annual bases for the same year 2015/16. This shows a deviation of 248 % between the two. This indicate that when donor provide projection on medium term bases it is more relaxed and less realistic and ultimately the affect the resource allocation decision especially on the medium-term bases during the preparation sector programs.

Table: 2 Comparison of Aid Projection on Annual Bases and On Medium Year Bases

	Year 2015/16		Year 2016/17	
Development Partners Name	Annual pledged resource based on medium year commitment	Annual pledged resource based on commitment on annual bases	Annual pledged resource based on medium year commitment	Annual pledged resource based on commitment on annual bases
DFID	89,602,858	56,498,792	75,354,562	57,578,205
EKN/the Netherlands Embassy	115, 891,429	15,891,429	15,000,000	11,000,000
Irish Aid	8,051,530	8,051,530	8,051,530	5,019,751
Coraid	2,485,009		1,295,836	
European union	26,434,563	9,487,386	64,181,970	9,658,125
Spanish aid	2,348,363	1,200,000		1,115,500
UNICEF	43,550,000	2,496,420	42,050,000	3,722,795
WHO	15,363,000	21,647,616	15,514,500	10,767,913
World Bank	31,575,230	10,000,000	30,222,135	6,000,000
global fund total	93,484,922	110,562,067	165,544,598	109,706,259
GAVi total	76,800,000	35,673,438	88,166,331	28,121,941
Total	946,915,360	271,508,677.44	505,381,462	242,690,489.00

Source: author calculation based on FMOH HSTP 201414-2019/20

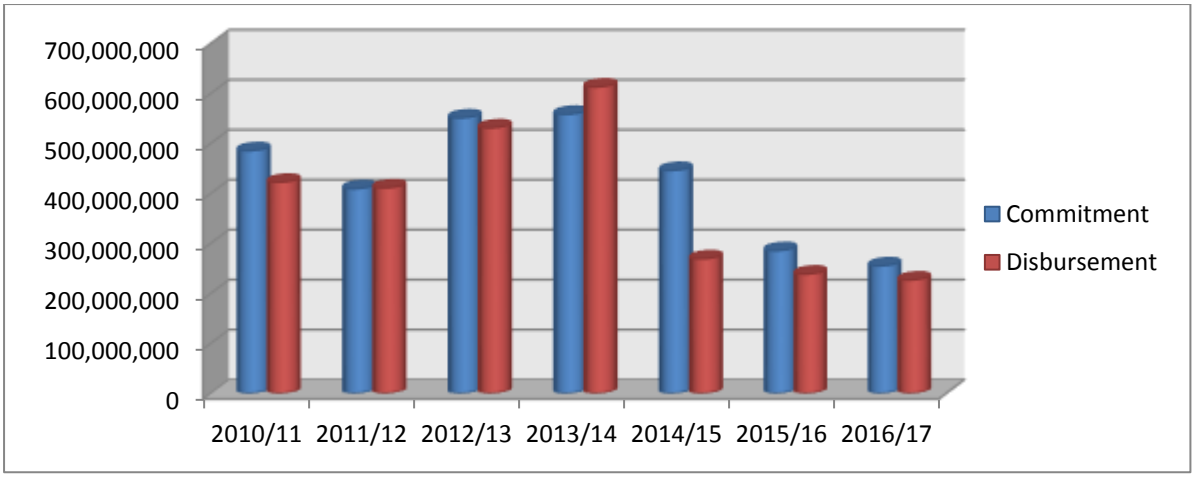
Annual predictability of aid considered to examine to what extend aid provision can be included in the annual budget of the sector and to be planed and allocated alongside the country own resources.

Table 3: Comparison of Commitment Vs. Disbursement of Aid

Year	Commitment	Disbursement	% of disbursement
2010/11	485,439,775	422,351,726	87%
2011/12	409,345,028.61	410,996,784.23	100%
2012/13	550,989,473.01	531,133,786.35	96%
2013/14	558,327,539.00	612,865,345.00	109%
2014/15	445,962,581.60	269,070,132.35	60%
2015/16	285,432,599.70	238,538,548.10	83%
2016/17	255,026,932.00	226,734,672.00	89%
2018/19	364,206,971 83	312,181,715 12	85 %

Source: Annual reports of FMOH for the year2010/11-2018/19

Data shows that even though it is improving there is still a challenge. The annual report of FMOH showed that aid predictability trend is not uniform and volatile from time to time. The graph below (graph 1) shows predictability rate varies from year to year which ranges from 60% minimum to 100% of the maximum. Again the graph depicted that not only the predictability of aid but also the donor contribution for the sector is also decreasing from time to time. This alarms the government for mobilizing additional resources from different domestic sources. It is obvious that when the committed amount is not released based on the plan, it is difficult for the sector to keep the budget credible and provide the planned service or it requires other source of revenue which affects the efficiency of the sector.



Graph 1-Aid Commitment vs. Disbursement by development partners. Source: FMOH HSDP annual reports2010/11-2016/17

Aid Modalities and Its Effect on Budget Practice

It is obvious that the regular inclusion of development co-operation funding on budget helps to align development efforts with countries' own priorities; strengthens the comprehensiveness and credibility of domestic budgetary system (OECD, 2016). Thus, in this part of the study analysis was made to identify the funding modalities and how much they are effective from the perspective of budget management specifically form the perspective of ensuring resource allocation efficiency of the sector. Accordingly, for most of the decade of the 2000s, the largest source of funding for Ethiopian Health sector was international development co-operation. This support has been provided in many ways and through different funding channels (Channel 1a and 1b, Channel 2a and 2b and Channel 3).

Channel one A which have subcomponent of A and B is a funding channel on which channeled from MOF to the implementers. This channel of funding uses MOFED's financial management system, integrated budget, and expenditure (IBEX) system and is fully on budget, on treasury and on account (MOF cash management manual, 2016). Even though this channel is the most preferable channel for government of Ethiopia it is less effective for the FMOH. As it is stated as by one of the interviews:

Channel one fund, even though it helps to put aid on budget and help the government to know the comprehensive amount of resource and helping efficient allocation and management of resources, at the sector level it is less effective because it increase the complication of fund flow as the government release the fund after achievement of specific target which could be achieved by the contribution effort of different sectors; which is challenging to coordinate across sectors. Therefore, the release of fund is impacted by the performance of different sectors.

It is known that budget support aid modalities are advantageous to both the recipient government and donors for aid management and development planning. Therefor the government should put additional effort to mobilize such resources to increase the budget efficiency of the sector and to get the most out of it.

On the other hand, channel one B, even though funds are earmarked for specific purpose, this fund use the government financial management system, allocation follows national allocation criteria using the "off-setting" principle. This modality used mostly used by UN agencies and resource transferred in this channel is fully on budget, on treasury and on account and managed according to the financial management procedure of the federal government. However, the amount of resource through channel is very small. As per the report from MOF, donors that provide budget support at the national level take the smallest share of the entire donors' fund that is only 4.7, 8.2 and 7.1% in the year 2014/15, 2015/16 and 2016/17 respectively (MOF, ODA statistical bulletin, 2016/17).

Channel 2 funding which has a component of channel 2 A and B is managed by the Federal Ministry of Health to finance specific programs with resources allocated by donors. Channel 2A is an un-earmarked funding channel which mainly consists of Sustainable Development Pool Fund (SDG PF) of the health sector. It is a pooled funding mechanism managed by the FMOH, using the government of Ethiopia financial procedures. It provides flexible resources, consistent with the 'one plan, one budget and one report concept, to secure additional finance to the Health Sector Transformation Plan. This is explained by one interviewee as:

"SDG fund is the most preferable funding modality, as it is a pooling fund arrangement it decrease the transaction cost for the government. For instance, if there are eleven donors in the SGD fund arrangement, if it would have not been SDG fund; it would have required eleven plans and another eleven reports".

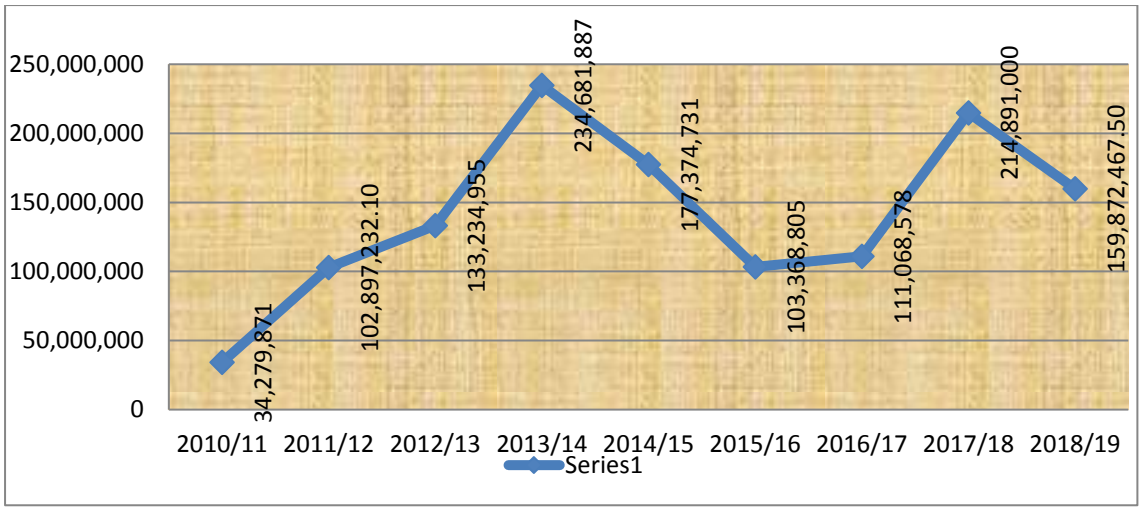
The preferably of SDG fund is expressed by other interviewee as: "SDG pool fund is flexible fund, the government can allocate the resource for the most preferred and prioritized area, so it increases the allocation efficiency of the government and it can minimize transaction cost that come from special management and reporting requirements by multiple the donor since it follow the harmonized donor accounting and reporting procedure".

However, even though it is one of the GoE's preferred modalities for scaling up development partners assistance in support of HSTP, the amount of fund channeled in this modality very small. In this channel resources are allocated based on agreed work plans and follow the

decentralized system, meaning the FMOH allocates resources to the Regional Health Bureaus (RHBs) which are then allocate to the Woreda Health Offices (WHOs). The specific scope of activities to be financed by MDGPF is determined through a consultative process involving all key stakeholders every year (WB, 2017).

Contributions to the MDG PF have been steadily increasing over the last 10 years, as apparent from graph 2 below. While the number of contributors has been increasing from 2 up to 12 in 2017/18, there is also an impressive increase in the amount of US$ 34 million in 2010/11 to 215 million in 2017/18. According to FMOH 2018/19 annual report starting from the initiation of this performance pooled fund, a total amount of USD 1.32 billion has been collected in the last one decade from twelve DPs. This indicate that the FMOH has putting effort to attract many donors to this channel envelop. However, the major funder of the health sector Global fund (37% contributor of the 2018/19 donor fund is not part of this modality which require further work and negotiation of the ministry. This result is also substantiated by Shumey, Teshome et al, (2018).

When the trend of MDG/SDG PF flow is seen, it shows fluctuation from time to time which affects the sustainability of the fund. The figure below shows that it has been a sharp growth in the year between 2010/10 till 2013/14 with the amount of 585% growth rate (USD 3, 4279, 871--234,681,887). And then continue to decrease gradually to 103,368,805 in the year 2015/16 and increased to 21, 4891,000 in the year 2017/18.



Graph 2: Trends in the disbursement of MDG/SDG PF. Source: Author presentation form HSDP annual report of FMOH

A question was raised for interviewee that what is the reason for that other donor are not joining the SDG pool fund as it is the most preferred funding modality. The interviewee responded as:

“Some donors do not want to join the SDG fund because SDG Pull fund is un-earmarked fund that the government can use it flexibly, but the earmarked fund is used only for special purpose for which the fund is allocated therefor joining SDG fund may cause to loss donors focus or priority area”.

From this it is possible to understand that the SDG PF is one of the effective funding channels with high country ownership by the Ministry of Health. It is one of the most preferred funding modalities which provide flexible fund to fill the financing gap of underfunded area. The fund gives unremarked resources that is used for flexible resource allocation and leave the government discretion on resource allocation decision and better use of the government financial management system. This is helpful to strengthen the overall budget system especially resource allocation efficiency of the sector as it is used to allocate resource based on the priority of the government and used the government financial management system.

On the other hand, earmarked fund of channel 2B resources from partners, such as Global Fund, GAVI, and UN agencies allocate resource for specific programs may affect the resource allocation decision of the sector. Because the funds are reported on and accounted for separately, and used to pay only for activities agreed by the particular donor, often according to its specific procurement and disbursement procedures. These resources are managed by the FMOH but accounting and reporting mainly follow donor procedures.

The interviewees were asked why the other channel two donors do not want to join the SDG pooling fund arrangement since it is the most preferred one, and they responded that "Some donors do not want to lose their focus special area. And if they join the SDG pooling funding arrangement the government may allocate the resources flexibility for the area most prioritized which may not be their priority".

Channel 3 is a channel on which donors provide support in kind and directly to the final beneficiary without the intervention of government. In this funding arrangement even though partially donor agency may report on the use of funds in the resource mapping, the day-to-day financial management and procurement and management of the project are firmly in the hands of the donor (interview result).

Since it is Off-budget financing, donors allocated fund to programs and projects may not always contribute to reaching the country's priority populations, interventions and services. Donor may contribute much amount of money than the government, however if this allocation cannot use the government budget system it may not finance the priority of the government. As result and the primary health care and other priorities identified in the health sector strategic plan may remain underfunded while other less prioritized areas may be funded enough or over funded.

NHA, 2017 report substantiate this. According to the report the priority of the government and donors are in different. And this is reflected in the share of resource allocation between two different health policies of the sector. It is known that the Ethiopian government, as a health sector policy it gives priority for prevention and allocate 51% of the government managed resource while donors allocate only 29% of the donor's fund for prevention and (NHA, 2017).

This is also reflected between the share of resources in capital and recurrent expenditure. Government provides larger share of resource allocation for capital budget. Accordingly, in the NHA report, the capital spending out of government-managed resources was approximately 17%, while NGOs spent only 5%. And over the last decade from the aggregated national health

expenditure nearly 59 % was allocated to finance capital expenditure. However donors had been making some contribution for aligning with the government budget.

According to one of the interviewees "even though channel three funds are not aligned with the budget, plan alignment exercise is there every year in the month Hamele. And this helps to enhance efficiency of resource allocation in the budget practice of the government."

Challenges and Constraints That Affect Efficient Aid Utilization in The Sector

In this study different problems and challenges were assessed that affect tracking and including of aid resource in the national budget of the health sector which is analyzed by triangulating secondary data, survey of questionnaires and interview results.

Accordingly, the first issue considered was the utilization of aid. In this regard evidences showed that there is a problem of timely utilization and reporting of resources which could affect the smooth release of fund from donors. The problem of aid utilization in the sector was also substantiated Tolesa (2017). In this regard the result of secondary data analysis showed that aid utilization ranged from 62% (minimum) in the year 2013/14 to 93% (maximum) in the year 2016/17.

According to the information from grant management department of the sector, the reason for less utilization was the bureaucracy of procurement and construction. Concerning this the respondents were asked the underlying reason for underutilization and reporting problem of the sector and said that "Long chain (from federal to region then to *worada*) on the release of the fund and reporting affect the timing of resource utilization and reporting. This also affects the timely receipt, utilization of resources and reporting of the utilized resources".

According to the survey result, implementation capacity problem is also one of the factors that affect the aid flow pattern of the sector. As one of the interviewees mentioned that: "The sector requires gap felling in terms of human resource, ICT and technology for effective management of grant. Most of the existing staffs especially on resource mobilization and grant management are hired by the donors as a support of felling the capacity gap and this responsible should be also taken over by the government too".

Therefore, the government should take the initiation for building the capacity in terms of human capacity and better financial management for attracting donors to the government preferred funding modality.

Because, if the organizations cannot have the required capacity to manage and coordinate the resource, donors might be forced to use other less preferred modalities or channels. Because donors may not have a confidence to use the government financial management and procurement system and leads them to use modalities such as project fund which help them more intervention and control of the finance and the program.

The survey result also shows that, late transfer of fund is affecting the timely utilization of resources in the sector. To know the reason for this interview question was asked for respondents and their response indicate that: "Late transfer of the fund is because of not

utilizing, liquidating and reporting by regional governments is the main reason for late transfer of the fund by the donors".

There are also different issued that are raised by the respondents through open ended questions that are considered as a problem in the sector that affect efficient aid utilization by the sector. Such as having different budget year between donors and the government, Poor utilization and reprogramming of activities, timely liquidation, and reporting of budget down the line in the financial administration.

IV. Conclusion and Recommendation

In this study the availability of aid information or aid predictability and the efficiency of different aid modalities and channels have been evaluated from the perspective of efficient budget allocation and utilization mainly using secondary data and document analysis annual aid predictability is gradually increasing from time to time. However, in the medium-term aid predictability, even though there is a progress, there are still challenges, which require better donor coordination and negotiation by the sector so that this medium-term predictability will be completed to advance the budget allocation and utilization.

The study found out that different aid modalities have different contribution and impact on the budget management of the sector. modalities such as channel 1A or direct budget support and channel two A sector budget support of SDG pool fund are the most preferable funding modalities since it provides un-earmarked and flexible resource which can be used the fill the financing gap and managed according to the government budget and finance management procedure. However, the share of this modality is very small when it is compared with the entire fund of other modalities. And significant amount of resource in the health sector flowed off- budget which is not reflected in the national health sector budget which means the state health budget reflects only a portion of Ethiopia's health spending and this understate the total amount of health expenditure and difficult to know how much is spent in the sector. Therefore, this ultimately biases the overall resource allocation decision of the government. Hence the government must put additional effort and further negotiate to attract various donors to the preferred modalities to effectively prepare and plan a comprehensive budget and utilize it accordingly.

The finding of the research also indicated that there are several challenges which have an impact the budget management of the sector. Such as timely utilization, liquidation, and reporting on the use of resources, capacity problem on aid utilization especially on skilled manpower, ICT technology, late transfer of fund is among the identified challenges that affect the budget performance of the sector. Therefore, the government must consider these problems put the necessary measures to solve, to attract donors to the most preferred modalities and utilize the limited available resource efficiently and effectively

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3.2. Determinants of Micro-Finance Institutions Sustainability: The Case of Selected Microfinance Institutions in Ethiopia, by Amina Ahmed

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Abstract

Microfinance institutions are established to serve the poor which are ignored by the conventional banking sector. To achieve such a golden objective continuously for a long period of time these institutions need to be financially self-sufficient. The objective of the study is therefore to assess the sustainability of MFIs found in Ethiopia. To achieve the objectives of the study both primary and secondary data sources has been used. The primary data was collected from managers and finance related officers via questionnaire and interview. The Secondary data was gathered basically from the annual bulletins of the Association of Ethiopian Microfinance Institutions and National Bank of Ethiopia. A purposive sampling technique was applied to select the sample Micro Finance Institution. Accordingly based on the availability of 10 years data; twenty-five MFIs are selected forming a panel data observation of 250. Conducting appropriate tests fixed effect model was used to analyze the determinant factors. The regression output of the study shows that PAR> 30 and risk coverage have a positive and significant effect on the financial self-sufficiency of the MFIs. While the age of MFI, cost per borrower and percent of women borrowers, debt to equity ratio, average loan balance per borrower and borrower per loan officer have no significant effect. based on the findings of the study the researcher recommend to enhance the number of active borrowers; small and new MFIs are recommended to share experience from their elders; close supervision and organized efforts should be made to minimize the default rate (PAR> 30) and enhance the provision of appropriate level of risk coverage; the government is also recommended to help the efforts of the MFIs by provision of different infrastructures and framing flexible and up-to-date regulations and directives.

Key words: financing structure, productivity, efficiency, liquidity, outreach, financial self-sufficiency, MFIs found in Ethiopia

I. Introduction

Microcredit is the practice of providing small loans to poor people who are not conventionally being served by the commercial bank, was first pioneered in Bangladesh in by Nobel laureate Mohammad Yunus and the organization he founded, Grameen Bank. Following the success of Grameen Bank, this financial innovation has not only been used in Bangladesh alone, but also

has been replicating by the most other countries in the world with some modification based on contextual differences (Ferdousi, 2013).

The history of microfinance in Ethiopia is often associated with the rise of nongovernmental organizations (NGOs) providing micro credit services to the poor and the development of a handful of microfinance institutions. In the early 1990s (E.C), standards began to emerge calling for stronger financial management of micro credit providers, particularly in their delinquency management and reporting. The government of Ethiopia has made significant steps toward economic development over the past decade, with relatively stable macro-economic indicators and the gradual privatization of its economy (Basaznew, 2009).

Since the mid- 1980s, many non-governmental organizations (NGO) in Ethiopia have started providing micro- credit to poor households for income generating activities (Michael 2006). Moreover, as cited in Goshim (2011), the development bank of Ethiopia, in collaboration with the ministry of trade, has launched a micro enterprise lending program (Kereta 2007). While the formal microfinance in Ethiopia started in 1994/5 E.C. In particular, the Licensing and Supervision of Microfinance Institution Proclamation of the government (proclamation40/96) encouraged the spread of Microfinance Institutions (MFIs) in both rural and urban areas as it authorized them among other things, to legally accept deposits from the public, to draw and accept drafts, and to manage funds for the micro financing business (Getaneh, 2005).

As per the Proclamation No. 626 /2009 Federal Negarit Gazeta of the Federal Democratic Republic of Ethiopia the purpose and activities that are allowed to MFIs include collecting deposits and extend credit to rural and urban farmers and people engaged in other similar activities as well as micro and small scale rural and urban entrepreneurs.

To achieve the objective of any institution, periodic evaluation of the performance is a must. Several performance evaluation indicators and different measurement models are emerged in relation to different areas of management from time to time. At the same time different organizations are applying different measurement tools like CAMEL, PEARLS and MIX model to measure the performance of MFIs.

CAMEL model: As discussed in Rai and Anil, (2011), ACCION and Women's World Banking have given some popular tools for the performance indicators and standards for MFIs. This Model uses 21 indicators to evaluate performance emphasizing on the financial management of the MFIs. The abbreviation CAMEL represents 'C' for Capital adequacy (Leverage, Reserve adequacy and other indicators); 'A' stands for Assets Quality (PAR, write off ratio and other quality level indicators.); 'M' stands for Management (Human resources, process, controls and audits); 'E' stands for Earning (ROE, Operational efficiency and other earning indicators.) and 'L' stands for the level of Liquidity (Cash flow projection and other liquidity level indicators)

Another performance measurement tool is PEARLS Model (1990) as discussed in (Rai, 2011) from the World Council of Credit Unions. The model uses 45 indicators aiming at monitoring performance of microfinance finance institutions. The abbreviations of the PEARLS model represent as 'P' for Protection; 'E' for Effective Financial Structure; 'A' for Asset Quality; 'R' for Rate of Return and Costs; 'L' for Liquidity and 'S' for Sign of Growth.

The MIX provides detailed financial and social performance information from Microfinance Institutions (MFIs), as well as business information from market facilitators and leading donor organizations and investors in Microfinance. To address the issue of diversity in operating environment of MFIs it has adopted a peer group framework, where financial performance of MFIs are compared among peer group members on 8 broad parameters (Institutional characteristics; Financing Structure; Outreach Indicators; Macroeconomic Indicators; Overall Financial Performance; Revenue and Expenses; Efficiency as well as Risk and Liquidity parameters) which have list of different ratios for each of the performance indicators (Rai, 2011).

It is obvious that performance of any institution shall be measured from the objectives of the organization angle. Microfinance's goal is to eradicate poverty. In the early days when MFIs started, they were financed by donor funds that have a poverty eradication goal. Hence, the performance of the MFI was measured on how much MFI reach to the poor and impact. But as the MF industry grows, the need for increased financing coupled with unpredictability of donor funds trigger the issue of building a sustainable MFIs that stand on their own leg. Generating their own revenues that could cover the expenses incurred (Letenah, 2010). The direction of focus was changed (that is not only serving the poor but also sustaining for a long period of time) as a result of failure of most MFI due to high default rates, poor fund management and lack of knowledge on the better use of funds among the community members served (Kipesha, 2013).therefor there is a need to identify the main determinants of financial performance of the MFIs that could help them made an informed decision. While reviewing the works done on similar areas; Gershwin (2015) conducts a study by taking 25 MFIs found in Ghana entitled 'Determinants of Financial Sustainability of Microfinance Institutions in Ghana'. This study uses unbalanced Panel data of 2006-2011 From MIX Market. The finding of the study shows that sustainability of MFIs is positively and significantly related to the yield on gross portfolio while the ratio of operation cost to loan portfolio and staff productivity has a significant negative influence on sustainability. The results of (Mahapatra & Dutta, 2016**)** shows that MFIs' operational sustainability is positively and significantly influenced by the ratio of gross loan portfolio to total asset and size. Management inefficiency and PAR > 30 days are found to have a negative and significant impact on operational sustainability of MFIs in India. Similarly, the study conducted by (El Kharti, 2014) shows that share of equity in total assets, staff productivity and the percentage of female clients and PAR >30 have a negative and significant effect on financial performance of MFIs found in Morocco. Whereas the findings of Tinotenda, (2019) shows a positive but not statistically significant effect of PAR>30 days and lending rate whereas the OSS of the MFIs is found to have a negative and statistically insignificant effect while inflation rate is found to have a negative and statistically significant effect on the performance of the MFIs found in Zimbabwe.

While reviewing the studies conducted in Ethiopia; the findings of (Woldeyes**,** 2012**)** shows that the size of a MFI, average loan balance per borrower, cost per borrowers and yield on gross loan portfolio affects the operational sustainability of Ethiopian MFIs significantly. Similarly, the output of **(**Gudeta**,** 2013**)** shows that Age of microfinance institutions has a positive and statistically significant effect on the profitability of the MFIs. However, operating expense ratio

and PAR> 30 have a negative and statistically significant effect on the performance of the MFIs understudy. Still the findings of **(**Zeray**,** 2013**)** shows that Debt to Equity Ratio and Deposit to Total Asset have negative and significant effect on the performance of the MFIs i.e., ROE while size of MFIs have a positive and significant effect on ROE of the MFIs.

The findings of Yenesew (2014), show that, operational efficiency, GDP and size of MFIs affect MFIs financial performance significantly whereas, Age of MFI has a positive but statistically insignificant effect on the financial performance of the MFIs. While the study found that Portfolio at risk>30, Gearing ratio, capital to asset ratio and Market concentration affect negatively but not significantly. Similarly, the output of Mirani (2015), shows that grant to asset ratio, cost per borrower, GDP growth rate, deposit to loan ratio and gross loan portfolio, affects the financial self-sufficiency and sustainability of Ethiopian MFIs significantly. Similarly, return on asset, experience of MFIs, cost per borrower, portfolio at risk and operating expense ratio affect their operational sustainability. While the study of Haile**,** (2016) shows that PAR, operating expense ratio and size of the MFI affects ROA negatively and significantly whereas, OSS, and FSS have a positive and significant impact on ROA. While reviewing the existing literatures conducted to analyze the determinants of sustainability (profitability) of MFIs both the dependent (OSS, FSS, ROA, ROE) and independent variables used by the scholars is not consistent even the output of the studies conducted is not conclusive. Therefore, the objective of the current study is to analyze the determinants of financial sustainability of the MFIs found in Ethiopia by taking the MIX model and using the financial self-sufficiency as a proxy to financial sustainability.

Moreover, the study involved different finance related officials and managers of the MFIs to share their experience regarding the factors that affect the financial performance depending on their institution's perspective and assess the challenges and problems faced related to operation of MFIs. Since it is important to evaluate the activities and efforts that are undertaken to minimize the negative effect the significant factors; the current study assessed the activities of the MFIs in mitigating the different problems that can affect the financial self-sufficiency of the MFIs.

The main objective of the study is to assess the Sustainability of Micro Finance Institutions found in Ethiopia. Specifically, the study tried to achieve the following specific objectives

- ✓ *To analyze the determinants of financial performance of the selected microfinance institutions*
- ✓ *To assess the practice of the MFIs managing the financial performance of their organizations*
- ✓ *To assess the challenges and problems faced by MFIs*
- ✓ *To assess the actions undertaken by the MFIs to mitigate the problems faced*

Hypothesis

Hypothesis 1: Age has a significant effect on FSS.

Hypothesis 2: debt to equity has a significant effect on FSS.

Hypothesis 3: numbers of active borrowers has a significant effect on FSS.

Hypothesis 4: average loan balance per borrower has a significant effect on FSS.

Hypothesis 5: percent of women borrowers has a significant effect on FSS.

Hypothesis 6: cost per borrower has a significant and on FSS.

Hypothesis 7: borrower per loan officer has a significant effect on FSS.

Hypothesis 8: portfolio at risk >30 has a significant effect on FSS

Hypothesis 9: risk coverage has a significant effect on FSS

II. Methodology

The study employed casual and descriptive research design as well as mixed research approach. Sample of 25 MFIs were selected based on the availability of at least 10 years (2009-2018) data that has been reported to the Association of MFIs (AEMFIs). Accordingly the sample MFIs taken into consideration includes AVFS, Degaf, Letta, Meklit, Lefayeda,, Dynamic, Harer, Dire, Gasha, Metemamen, Aggar, Shashemen, Harbu, Benishangul, PEACE, SFPI, Sidama, Eshet, ACSI, ADCSI, DECSI, Buussa gonfa, OCSSCO, OMO, and Wasasa.

Both primary and secondary data sources were considered. To this end the secondary data was collected from the annual bulletin of the association of Ethiopian Microfinance Institutions (AEMFI) and audited financial statement submitted to the national bank of Ethiopia. As a primary data source, the participants have been selected based on the availability of head office or branch MFIs in the capital city Addis Ababa. Accordingly, 230 finance related officials (five finance related officers from each MFIs and 2 from 2 from AEMFI) and 42 managers (manager from each MFIs and 4 from AEMFIs) have been voluntarily participated. To analyze the indicators of sustainability of MFIs correlation analysis and regression analysis has been used.

To measure the sustainability of the MFIs different scholars used different indicators of financial performance including but not limited to ROA and ROE; Next to these traditional measures, financial performance is also evaluated by using indicators that are more specific to microfinance. These indicators include measures such as the operational self-sufficiency and financial self-sufficiency (Niels and Marek, 2018). In the current study the financial self-sufficiency of the MFIs taken as the dependent variable; it is due to the reason that this indicator measures how well an MFI can cover its costs, considering a number of adjustments to operating revenues and expenses. This indicator is used by different scholars to identify the major determinants of sustainability especially for microfinance institutions (AbdurRahman & Mazlan, 2014; Bhuiyan et.al. 2011 as cited in AbdurRahman & Mazlan, 2014, Rai and Anil, 2011; Rai, 2011, Aemiro, 2013).

To measure the predictor variables of financial self-sufficiency, nine measures have been used as independent variables. These independent variables constitute from different indicators such as Institutional characteristics (age), Financing structure (Debt to equity ratio), Outreach (Number of active borrowers, percent of women borrowers and average loan balance per borrower), Efficiency (Cost per borrower), Productivity (Borrower per loan officer) as well as Risk and liquidity (Par>30 days and risk coverage) indicators based on the MIX model.

The regression model which is adopted from (AbdurRahman & Mazlan, 2014), with major modification as per the MIX model is expressed as follows:

$FSSit = \alpha i + \beta 1 logAGEit + \beta 2 DERit + \beta 3 logNABit + \beta 4 logCPBit + \beta 5 LogALBPBit + \beta 6 PWBit + \beta 7 logBPLOit + \beta 9 PAR{>}30it + \beta 10 RCit + \varepsilon it$……..equation 1

Where: FSSit is the financial self-sufficiency ratio of microfinance i at time t (which is the dependent variable).

αi is a constant term; β measures the partial effect of independent or explanatory variables in period t for the unit i (MFI); X is the explanatory variable as described above; and ε it is the error term. The variables,

III. Results and Discussion

Descriptive statistics

The following session discuss the description of the variables understudy i.e. mean, standard deviation, minimum and maximum values of the different indicators used in the study. Age of the MFIs ranges from minimum of 2 years to 21 years throughout the study period.

Table 1 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Age	250	12.86	4.316821	2	21
DER	239	2.093967	1.783737	.2	18
NAB	171	124613.4	252073.9	128	1490356
ALBPB	170	4030.922	4416.291	553	39077
PWB	167	49.64503	19.1223	0	85
CPB	233	508.0017	416.3307	36	2203.1
BPLO	226	468.2876	343.1029	38	3018
PAR30	229	6.050131	9.418692	0	81
RC	228	85.17101	84.74973	1	937
FSS	236	94.45339	31.92574	22	191

Source: survey result, 2020

Age of the MFIs shows minimum of 2 years operation in the market, maximum 21 years of operation and on average 12 years of service.

Based on the above table (table 1), The **debt-to-equity ratio** of the MFIs understudy shows a minimum of 0.2%, maximum of 18%and on average 2.1% with an overall SD of 1.8. Since this measure provides information on the capital adequacy of MFIs and assesses their susceptibility to crisis, microfinance investors mainly rely on this ratio as it helps predict the probability of an MFI honoring its debt obligations. On the other hand, this ratio depicts the extent to which an MFI has leveraged its own funds to finance its portfolio and other assets. However Excessive leverage increases the risk profile of an MFI, as the institution may have limited ability to absorb unexpected credit losses, or it may have borrowed more than it can repay in times of troubles. According to AEMFI, (2013) report Ethiopian micro finance institution on average debt to equity ratio was able to maintain 1.5 of their equity.

To assess the level of outreach of the microfinance institutions the study used the number of active borrowers, the percent of women borrowers and average loan balance per borrower. Accordingly, The **number of active borrowers'** of the MFIs shows a minimum of 128 borrowers, maximum of 1,490,356 borrowers and on average 124, 613.4 borrowers throughout the study period with a SD of 252, 073.9. The **average loan balance per borrower** shows a minimum of Br 553 per borrower, maximum 39,077 and on average Br 4031 per borrower throughout the study period with SD of 4416.29.

The **percent of women borrowers** (PWB) which is also as a basic indicator outreach of MFIs shows a minimum of 0%, maximum 85% and on average 49.6% with SD of 19.1. As the objective of the MFIs is to serve the poor who are ignored by the conventional banks as well, he the women deserves a special attention. While assessing the percent of women served during the study period the minimum share is 0% that implies there was a time by which even a single woman didn't take the service of the MFIs. On average from the number of active borrowers served by the MFIs 50% are women and the maximum percentage is only 85% on which the MFIs are devoted to serve the women borrowers.

To assess the level of efficiency and productivity of the MFIs the study used the most widely used indicator that is the cost per borrower and borrower per loan officer. Accordingly, the **cost per borrower** (CPB) which is one of the efficiency indicators of the MFIs shows a minimum of Br. 36 per borrower, maximum of 2203 per borrower and on average Br 508 per borrower with overall SD of 416. The **borrower per loan officer** as an indicator of productivity of the MFIs shows a minimum of 38 borrowers per loan officer, maximum of 3018 borrowers per loan officer and on average 343 borrowers per loan officer with a SD of 468.

Concerning the **portfolio at risk greater than 30 days**, as an indicator of risk, of the sample MFIs the minimum is zero percent, while the maximum is 81% and the average shows 6% with SD of 9.4. There was also a significant variation on this variable across microfinance institutions and over observation periods. Since the higher the value of the PAR > 30, the riskier the credit portfolio, which can have a negative influence on the financial performance of the MFI (Abebaw, 2014). In addition to this as discussed in the bulletin of the AEMFI (2013), a par> 30 days greater than 10% is a cause for concern. While the average level of the PAR> 30 is less than the threshold (6%) there are MFIs with good level of par 30 (0%) and some MFIs institutions are also in serious problem of PAR 30 that is up to 81% of their loan portfolio is post due for greater than 30 days. This calls for serious attention for the specific MFIs.

In line to the level of the riskiness of the loan portfolio MFIs need to be prepared for the worst scenario. This is measured by the level of **risk coverage** of the MFI. This ratio shows the percent of portfolio at risk that is covered by actual loan loss reserves as recorded in the balance sheet. The risk coverage level of the MFIs shows a minimum of 1%, maximum 937% and on average 85% with SD of 84.7. which the average level of preparedness for MFIs shows 85% which shows that the actual loan loss reserve is going to cover only 85% of the portfolio at risk while there are institutions that have only 1 % available reserve for the PAR which is far less prepared for the worst-case scenario while others highly (over) prepared for the worst case scenario that is 937%.

Diagnostic Tests

VIF Test for Multicollinearity

To make sure the independent variables are not highly correlated (existence of multicollinearity) The variance inflation factor (VIF) of the variables under study was checked as depicted below, which depicts all the variables have no multicollinearity problem even the VIF is less than 5 since as a rule of thumb VIF of less than ten refers to no multicollinearity problem and the 1/VIF is less than 1. Note that all the variables are free from multicollinearity.

Table 2 VIF Test for Multicollinearity

Variable	VIF	1/VIF
Number of active borrowers	3.77	0.265110
Cost per borrowers	3.43	0.291275
Average loan balance per borrower	2.37	0.421084
Age of the MFI	1.76	0.569103
Borrower per loan officer	1.60	0.625650
PAR>30 days	1.25	0.800648
Percent of women borrowers	1.24	0.808804
Risk coverage	1.15	0.870116
Debt to equity ratio	1.14	0.876658
Mean VIF	1.97	

Source: survey output

Homoscedasticity Assumption

To test for the presence of heteroscedasticity, the popular reusch-Pagan / Cook-Weisberg test was employed. The result of the test shows a Prob > chi2 = 0.5537; since the p value of the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity, as depicted below, with Ho: constant variance is greater than 0.05 the data is homoscedastic.

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of FSS100

chi2(1) = 0.35

Prob > chi2 = 0.5537

Normality Test

To check the normal distribution of the data, the shappiro- wilk test for normal data was employed. The output shows that financial self-sufficiency, average loan balance per borrower and cost per borrower are normally distributed while the remaining variables are not normally distributed.

Table 3 Shapiro-Wilk W Test for Normal Data

Variable	Obs	W	V	z	Prob>z
Financial self-sufficiency	236	0.99199	1.380	0.748	0.22735
Age of the MFI	250	0.88783	20.343	7.010	0.00000
Debt to equity ratio	171	0.97298	3.519	2.872	0.00204
Number of active borrowers	171	0.97298	3.519	2.872	0.00204
Average loan balance per borrower	170	0.98449	2.010	1.593	0.05559
Percent of women borrowers	166	0.95090	6.233	4.170	0.00002
Cost per borrower	233	0.99016	1.678	1.200	0.11513
Borrower per loan officer	226	0.97868	3.538	2.925	0.00172
PAR>30 days	224	0.53973	75.806	10.015	0.00000
Risk Coverage	228	0.50317	83.106	10.237	0.00000

Autocorrelation Test

To test for autocorrelation the Wooldridge test for autocorrelation in panel data was employed. The result of the test, as depicted below, couldn't reject the null hypothesis there is no first order autocorrelation.

Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F (1, 22) = 9.018

Prob > F = 0.0066

Regression Analysis

Model Specification

To select an appropriate model to conduct the regression analysis for the panel data on hand the Breusch and Pagan Lagrangian multiplier test for random effects was conducted to select either OLS or random effect is appropriate. Since the output of the test has a significant test result (0.0001) the OLS shouldn't be used.

At the end to select either random or fixed effect model the hausman test is conducted and the prob. value of chi-square in hausman test is 0.0000 that shows null hypothesis is rejected and alternative is accepted. Therefore, fixed effect model is an appropriate model for this study. Since the data under study area, as depicted in the diagnostic tests discussed above, are autocorrelated a command xtregar has been used to produce an output that are robust standard error to disturbances being autocorrelated with AR (1). The following session discusses the finding of the regression result based on table below.

Table 4 summary of regression output of OLS, random effect and fixed effect

	(1) OLS	(2) RE	(3) FE
Age	16.58**	17.94*	14.74
	(6.264)	(7.123)	(9.310)
Debt to equity ratio	-2.015	-1.317	-0.753
	(1.274)	(1.229)	(1.357)
Number of active borrowers	0.0000208	0.0000172	-0.00000510
	(0.0000113)	(0.0000128)	(0.0000155)
Average loan balance per borrower	29.98*	10.48	-14.16
	(12.12)	(12.23)	(13.97)
Percent of women borrowers	-15.82	-2.138	25.41
	(14.48)	(14.62)	(16.73)
Cost per borrower	-43.20***	-32.06***	-10.33
	(9.889)	(9.599)	(11.34)
Borrower per loan officer	-37.66**	-20.04	-14.14
	(11.55)	(10.80)	(11.19)
Portfolio at risk > 30 days	-5.797	39.43	67.00**
	(21.67)	(20.75)	(21.80)
Risk coverage	4.505	6.656	9.710*
	(4.971)	(4.553)	(4.575)
_cons	159.5**	133.2*	146.4**
	(59.51)	(53.40)	(55.48)
N	117	117	117
R^2	0.367		0.221

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: survey result, 2020

Institutional Characteristics (Age) Of Mfis and Financial Sustainability Of Mfis

The age of the MFIs positively but not significantly affects the FSS of the MFIs understudy. Depicting as the age of MFIs increases from new to maturity their experience will be high, and level of activities will be complex resulting in improvement in the level of the financial self-sufficiency of the institutions. This is in confirmation to the hypothesis developed at the beginning of the study and descriptive statistics and correlation analysis conducted in the previous sessions. This result is also in line with the findings of Mirani (2015); Yenesew, (2014) and Woldeyes, (2012) who found a positive but statistically insignificant effect on the financial performance of the MFIs. This indicates that there is no evidence for microfinance institutions financial sustainability to depend on their age. Whereas the study conducted by Sima, (2013) and Lahcen, (2014) found a positive and significant effect of age on the profitability of MFIs

Financing structure (DER) of MFIs and financial sustainability of MFIs in Ethiopia

The **DER** has found to have a negative but not significant effect on the FSS of the MFIs understudy during the study period. Several studies provide empirical evidence supporting this negative relationship between debt level and firm's performance or profitability. This finding is similar with the finding of Yenesew (2014), Sisay, (2016) and Mirani (2015) who found a negative but not statistically significant effect on profitability of MFIs; as well as with the findings of Muhammad et. al. (2016); Rahman and Mazlan (2014); Kinde (2012); Moususmi and Swati (2016) as well as G/Michael (2013) who found negative and significant effect of DER on the financial performance of the MFIs.

Outreach Indicators (ALBPB, NAB and PWB) Of Mfis and Financial Sustainability of Mfis in Ethiopia:

The **average loan balance per borrower** (ALBPB) has a positive and statistically insignificant effect on the FSS of the MFIs. This finding show that the increment of the loan balance dispersed for the borrowers have a positive effect on the FSS of the MFIs even though it is not statistically significant. This finding is in line with the findings of Sintayehu and Mesfin (2017) and Woldeyes, (2012). The NAB has a positive effect on the financial performance of the MFI implying that as the number of active borrowers increases the financial performance of the MFIs is improved. In addition to this the **percent of women borrowers** has found to have a positive but not significant effect with coefficient of .3287395 on the level of the FSS of the institution under study. Since the increment in the outreach (i.e., PWB is an indicator of an outreach of the MFIs) of the MFIs which is expected to increase in the level of FSS. This is in line with the findings of Sintayehu and Mesfin (2017) and El Kharti, (2014) who found a positive and statistically significant at 5% significant level effect of female borrowers on the financial performance of the MFIs. Generally, as the level of outreach of the MFIs increases the financial self-sufficiency of the MFIs is also improved since the findings of the regression result shows that ALBPB, NAB and PWB positively but not significantly affects the FSS of the MFIs.

Efficiency and Productivity Level of Mfis (CPB and BPLO) and Financial Sustainability of Mfis In Ethiopia

The **cost per borrower** has found to have a negative and statistically insignificant effect on the FSS of the MFIs understudy implying that as the cost per borrower increases the FSS of the MFIs will decrease which calls for the officials of the MFIs manage their cost. Since minimization of cost is expected to maximize performance. This finding is in line to the findings of Muhammad *et. al.* (2016); Rahman and Mazlan (2014); Mirani (2015); and Kinde (2012). The **borrower per loan officer** is found to have a negative and statistically insignificant effect on the level of the FSS of the MFIs understudy in the study period. This is in line with the findings of Gershwin Long, (2015) and Moususmi and Swati (2016) while to the contrary of the findings of Muhammad *et. al*. (2016) and Kinde (2012); El Kharti, (2014). This might be explained that the excess number of borrowers per loan officer might result in worker overload and might result poor portfolio quality which in turn affects the financial performance of the MFIs. This calls for serious attention by the MFIs to critically analyze the productivity level of their employees because over burden of this officers might affect the quality of the loan portfolio.

Risk And Liquidity Level of Mfis (PAR> 30 And RC) nd Financial Sustainability Of Mfis In Ethiopia

The **PAR >30 days** Which is an indicator of the risk of default of the outstanding, loan having a positive and significant effect, with a coefficient of .8515, on the FSS of the MFIs understudy during the study period. The current finding is similar with the finding of El Kharti, (2014) Mersland and Strøm (2009) as cited in El Kharti (2014); Tinotenda (2019) as well as Zeray (2013) While to contrary to the findings of Muhammad et. al. (2016); Gudeta (2013); Haile (2016); Moususmi and Swati (2016); Yenesew (2014). The **risk coverage** on the other hand is an indicator of the preparedness of the MFIs has positive and statistically significant effect on the FSS of the MFIs with a coefficient of .08240. showing the level of readiness of the MFIs to the worst level of default rate scenario saves from undertaking unplanned and infeasible decisions which results in improvement in their sustainability.

Primary Data Analysis

Profile Of the Participants

To assess the perception of the managers and finance related officials about the financial performance of their institutions 230 questionnaires were distributed to the finance related officers of the sample MFIs. From these 130 questionnaires were properly filled and returned back constituting a response rate of 56%. To support the findings of the questionnaire an interview was conducted with 42 MFIs managers. The following session briefly summarizes the output of both the questionnaires and interview to strengthen the findings of the descriptive as well as inferential analysis conducted in the previous session and assess the perception of the different stakeholders.

Table 4: Educational Background and Work Experience Of The Participants

Profile of participants		position		Total	%
		manager	finance		
Educational Background	B.A degree	-	100	100	58%
	Postgraduate	42	30	72	42%
	Total	42	130	172	100%
Work experience	Less than 3 years	7	25	32	19%
	3-5 years	7	40	47	27%
	6-10 years	20	50	70	41%
	Above 10 years	8	15	23	13%
	Total	42	130	172	100%

Source: primary data, 2020

Some (48%) of the participants are master's holders and others are degree holders (52%). regarding their experiences some (13%) have more than 10 years' experience; others (41%) do have 6 to 10 years of experience and still some others (27%) have 3 to 5 years of experience and 19% of the participants have less than 2 years of experience.

The managers and finance related officials of the MFIs understudy believe that the financial performance of the MFIs should be evaluated periodically, and they confirmed that they are conducting the assessment of the financial performance of their institutions monthly, quarterly as well as annually. and they confirmed that age, size, DER, NAB, ALBPB, PWB, CPB, BPLO, PAR> 30 and RC are utilized as a basic indicator to assess the financial performance of their institutions. In addition to this some institutions are also using PAR> 1 day, ROA, ROE, profitability, total portfolio outstanding, operating expense ratio, saving to loan ratio as an indicator

The participants were also asked to **identify the challenges and problems** faced. Accordingly lack of management information system and core banking system; lack of awareness of the society about MFIs; high level of default rate; Lack of capital; lack of good infrastructure; Lack of experienced man power; carelessness to see and control the operations seriously; low productivity of credit and saving officers; high turnover of operations staff; High transaction cost ; The legal environment which does not allow MFIs to sell assets which are taken as collateral without declaring to the court; Low saving habits of the society; portfolio funding limitation; high portfolio at risk and low attention by the government to support MFIs other than the government owned MFIs were the challenges and problems faced by the sample MFIs managers and finance related officers.

Based on the identified problems and challenges, the participants were requested to share the **strategies and techniques used to mitigate it**; accordingly awareness creation and promotion; designing different products; capacity building (intensive training); mobilizing huge amount of saving from the public; facilitating commercial loan access; soliciting donors; targeting women and attracting new financial intervention programs of NGOs were the efforts made by the institutions to mitigate the challenges and problems faced.

At the end respondents were requested to **provide recommendation on how to enhance the sustainability of the MFIs**. creating an efficient long term strategy; strengthening corporate governance; conducting continuous researches; regulatory bodies should customize the regulations to be flexible based on international best practices of similar industries; create staff commitment; improving infrastructure to reach to the poor who is found in different parts of the country; increasing the attention to the poor people found in rural areas of the country; to create a suitable legal environment especially in the equity market; mobilizing saving to address the problem of loanable fund; portfolio funding diversification; have appropriate interest rate that can result in sustainability; operate with minimum operating and administrative responses; have sound financial management and check efficiency and portfolio quality along with sustainability; cost minimization; build robust management information system; design affordable saving and loan products; pay better and competitive salary and benefits to the employees; the government should avail loanable fund to MFIs as much as possible; National Bank of Ethiopia or development bank of Ethiopia should support MFIs in liquidity problem as it is done for banks; government to focus on facilitating balanced financial market and Customer need assessment and impact of existing services should be undertaken continuously were the major recommendations of the participants to improve the performance of the MFI and sustain in the market serving the poor.

IV. Conclusion and Recommendation

To assess the financial sustainability of MFIs in Ethiopia, descriptive statistics and inferential analysis have been undertaken. As per the descriptive statistics the debt-to-equity ratio of the MFIs is on average goo but some MFIs have more than the required level of leverage that calls for an attention by the responsible bodies. While the number of active borrowers though increasing from time to time the lion share is taken by the large and established MFIs so a lot of efforts should be made to enhance the number of active borrowers. The number of women borrowers entertaining by the MFIs is on average 50% which is not reasonable while dealing from the objective of the MFIs. The productivity and efficiency indicators of the FSS show that there is a great difference among the MFIs indicating that there are institutions which are highly productive and efficient g and others which are not productive and less efficient. the risk level and risk coverage level of the MFIs still depicts a significant difference among the MFIs, indicating that some of the MFIs have low level of risk and risk coverage and others have extremely high level of risk as well risk coverage. The regression result shows that age, DER, ALBPB, NAB, PWB, CPB and BPLO have no statistically significant effect on the level of the FSS the first seven hypotheses were rejected. While the level of PAR > 30 days and RC have positive and significant effect on level of the FSS of the MFIs. So one can conclude for MFIs understudy as the level of PAR>30 days and level of RC increases the FSS of the institutions also increases accepting the last two hypotheses.

regarding the challenges and problems faced by MFIs the managers and finance related officers have mentioned multi-dimensional challenges and problems which can be concluded as a infrastructural problem (lack of MIS and core banking system); administrative challenges and high level of default risk; lack of skilled man power and portfolio funding limitation. to mitigate the problems and challenges a lot of efforts has been made by the MFIs including awareness creation, creating a linkage with donors and banks, capacity building activities, mobilizing saving.

based on the findings of the study the researcher **recommend** to enhance the number of active borrowers through awareness creation, introduction of new and needed services like provision of Islamic micro financing services and other required as well as affordable services which can help to increase the outreach level by serving to the poor and women; small and new MFIs are recommended to share experience from their elders since age has a positive effect on the level of the sustainability of the MFIs which can be done through introduction of different programs that can help to share experiences among MFIs; to enhance the efficiency and productivity of the workers still the management bodies by collaborating with different stakeholders are recommended to modernize the way of doing their activities like by introducing strong MIS, core banking system and other tools; the government is also recommended to help the efforts of the MFIs by provision of different infrastructures and framing flexible and up-to-date regulations and directives.

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3.3. Evaluation of the Effectiveness of Internal Control Practice in the Ethiopia Public Universities, by Abdella Hussen

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Abstract

The main objectives of this study were to evaluate effectiveness of the internal control practices in selected Ethiopia Public Universities. Semi-structured questions were designed based 17 principles of internal control framework model of the Committee of Sponsoring Organizations of the Treadway Commission (COSO), five elements of internal controls: control environment, risk assessment, control activities, information and communication, and monitoring. The data was collected from five properly selected public universities and a total of 100 of their respective administrative and academics employees were used as the study unit. The research employed the explanatory research approach using both qualitative and quantitative data (i.e., mixed approach). And furthermore, qualitative information from interviews was supplemented the quantitative data. The data was analyzed using descriptive statistics and multiple regression analysis methods. The result is presented in statistics such as mean, standard deviation, frequency, and percentage with help of SPSS outputs. Overall finding of the study reveals that Effectiveness of Internal control practice positively and highly correlated with all Elements of internal control system. Moreover, the study indicated that, Higher education institutions (HEIs) managing bodies are less than average in proactively responding to changing aspects of HEIs fraud risks, weak in IT securities control and less effective public university board of directors oversighting functions. Thus, the study recommended that the HEIs needs more effective implementation and monitoring of its policies and procedures and creating proactive risk assessment to improve its internal control system.

Key words: Internal control effectiveness, Higher education institutions, principles of ICF and, public universities of Ethiopia.

I. Introduction

Internal control is designed to provide reasonable assurance that the organization's general objectives are being achieved. As per Institute of internal auditors (IIA, 1999) internal control is actions taken by management to plan, organize, and direct the performance of sufficient actions to provide reasonable assurance that accomplishment of established objectives and goals for operations and programs, the economical and efficient use of resources, the safeguarding of assets, reliability and integrity of information, compliance with policies, plans, procedures, laws, and regulations. Hence, clear objectives are a prerequisite for an effective internal control process. The COSO, in the year 2013, identifies five essential components of an effective internal control system namely: control environment, risk assessment, control activities, procedures and practices that ensure that management objectives are achieved, and risk mitigation strategies implemented information and communication, and monitoring. These

elements must be present and functioning effectively for any internal control system to achieve an organization's objectives. According to the study made by the Organization for Economic Co-operation and Development (OECD, 2011), of 29 member countries, 26 (91%) countries, adopted an internal control framework (ICF) comprising control activities, control environment, risk assessment, and monitoring. Affirming the above points, the price water house coopers (PwC), Global Economic Crime Survey (2011), for the public sector, 31% of fraud is detected by an internal tip-off and 14% by external tip-off, and 14% by accident. Another survey by AIC's survey found that 90% of external fraud and 40% of internal fraud is detected by internal controls.

In Kenya, according to Joseph et al, 2015, between 25 and 30 percent of the national budget or about Kshs. 270 billion is lost annually through fraud as result of weak internal controls. These losses were mainly attributed to the escalation of costs in Government procurement occasioned as result ineffective control functions. There is a significant relationship between financial governance control, budget control and level of fraud prevention and detection (Kabue et al, 2017).)

In Ethiopia, Office of Auditor General(OFAG), as major overnighting body in the country, emphasized that the internal control systems must be structured so that it can deliver reasonable assurance to management and stakeholders that to all revenues accrue to its benefit, all expenditure is duly authorized and properly disbursed, all assets are adequately safeguarded, all liabilities are recorded, all statutory requirements relating to the provision of accounts are complied with and all financial reporting provisions followed (MOF, 2006).

Besides, in recent times there has been an emphasis on not just the presence of internal control but also the effectiveness of internal controls practice. The internal control unit can be present, but they are not effective (Omonyemen et al, 2017). still existing ICF implementation has facing many challenges such as by the independence of internal audit, the competence of internal audit, the management support for internal audit, and the quality of internal audit.

Ethiopia's higher education sector has been considered by a remarkable expansion over the last 25 years. According to (Kibrom,2020) described about Ethiopia HEs, Education in general and the country's 51 public universities are among key priority sectors of public investment, attracting the highest spending allocation in federal budget. Nevertheless, the sector faces challenges, which call for new approaches.

Revised Higher education proclamation number 1152/2019 of FDRE the public universities required to report to the Ministry of science and higher education of Ethiopia (with exception of some like Ethiopian civil service university) to ensure its compliance with the law and strategic plan agreements. The president of public HEIs shall conduct the financial affairs of the institution following the law and with the principles of efficiency, efficacy, frugality, and transparency. The proclamation also instructs the top management of the universities to install an accounting system, including income and expenditure accounting, and a reporting system, appropriate to its responsibilities. Accordingly, top university management is responsible for developing an effective internal control system in their respective institutions. However, personnel throughout an entity play important roles in implementing and operating an effective

internal control system. Simply, internal control helps university management achieve desired results through effective stewardship of public resources.

In recent years, the Ethiopia government expanding the public Universities intensively to attain objectives of growth and transformation plans (GTPI & GTP II). According to information from (Dea, 2016) the total budget allocated to education, lion share (up to 40 %) of the recurrent and capital budget goes to Ethiopian higher institutions.

The office of the general auditor oversees auditing public bodies and presents its findings before the House of Peoples Representative reporting to ensuring whether the revenue utilization is according to rules and regulations, the disbursement is made according to budget, public property is kept safe, and also the recording and accounting procedures are up to the required standard. Starting from 2004, most public HEIs in Ethiopia been trying to introducing and implementing program budgeting system in its financial management. This includes introducing accrual budgeting and accounting, double- entry accounting, IFMIS, and program budgeting. But despite the efforts, there are strong claims by (FEACC, 2012), increasing investment in the sector is increasing corruption risks in procurement, management, and delivery of stock and building equipment, and so on. According to another source (Kibrom B. 2020) the expansion of public universities has also put university administrations under pressure. The administrative sections of most Ethiopian public universities appear to be insufficient and unable to effectively manage modern universities with huge budget. Still the role and capability of administrative staff are also problematic.

This all issues call worth to undertake study on higher education internal control practice in Ethiopia. Therefore, the focus of the current study is to evaluate and provide empirical findings on internal control practical effectiveness in five selected public universities of Ethiopia.

The major causes of public money misuse are mainly resulted because of ineffective internal control mechanism, ineffective court system to prosecute frauds, corrupt behaviors of top management (Oduro et al 2018). according to Baltaci and Yilmaz (2006), economic implications of ineffective, weak internal control & internal audit function: may result in such problems as unethical, uneconomic, inefficient, and ineffective operations; weak accountability links; unlawful actions; and lack of safeguarding measures against waste, abuse, mismanagement, errors, fraud, and irregularities.

The office federal auditor general (OFAG) report to the parliament of the FDRE government for the budget year ended 2017/2018, revealed figures of unaccounted and illegal expenses as well as uncollected revenues. From the report, public universities are dominating in their practice of public money mismanagement. In view of that, a total of over one-billion-birr worth illegal procurements were made by several government offices during the budget year. The government offices committed a sum of over 1.3-billion-birr worth of unaccounted and inappropriate expenditures during the last budget year. What more problematic is that this type of report is not new for the auditor general who presented similar reports for 10 consecutive years. From the same source, several public universities were at the forefront in presenting erroneous reports and 67-85 percent of their purchases were not done essentially following

procurement procedures. The audit report has also identified several institutions for breaching the budget proclamation.

In blueprint, OFAG is legal oversighting body to conduct monitoring and take strict measures on case of any incidence of malpractices on public money. While on ground practice so challenged. As it is known, the ministry of science and higher education is giving due attention to higher education sector administrating more 51 universities and much of the resource is being allocated to it. Education holds the highest spending allocation in Ethiopia, in this year's (2019/20) FY federal budget, at Birr 50.6bn, with funding in this line-item mainly allocated to about 51 federally administered universities (for an average allocation of around one billion per university). But there are strong claims by (FEACC, 2012), increasing investment in the sector is increasing corruption risks in procurement, management, and delivery of stock and building equipment, and so on. According to the other source (Kibrom B. 2020) the expansion of public universities has also put university administrations under pressure.

Presently limited HEIs studies are existed, they are also with narrow scope and focus, and they fail to explain why public universities internal control system has major weakness in their internal control practice. All things considered, it is essential to evaluate effectiveness of the current internal control of practice in higher education institutions of Ethiopia; particularly these public universities largely funded by tax payer's money.

In this study the following research hypotheses were formulated and tested:

H_1: Control environment has positive significant effect on effectiveness of internal control practice.

H_2: Risk Assessment practices have positive significant effect on effectiveness of internal control practice.

H_3: Control activities have positive significant effect on effectiveness of internal control practice.

H_4: The presence of information and communication has positive significant effect on effectiveness of internal control practice.

H_5: Availability of monitoring activities has positive significant effect on effectiveness of internal control practice.

More specifically, the research aims:

1. *To determine the effect of control environment on internal control practice effectiveness in selected public universities.*
2. *To assess the effect of risk assessment on internal control practice effectiveness in selected public universities.*
3. *To evaluate the effect of control activities on internal control practice effectiveness in selected public universities.*
4. *To examine the effect of information and communication on internal control practice effectiveness in selected public universities.*
5. *To examine the effect of monitoring activities on internal control practice effectiveness in selected public universities.*

II. Methodology

Research Design and Approaches

The research employed explanatory research approach using both qualitative and quantitative data (i.e., mixed approach). The combined methods are aimed to complement one another and gather reliable information to draw representative outcome and conclusion.

Source Of Data and Collection Producers

Both quantitative and qualitative types of data from both primary and secondary sources was used. The primary data source was from selected public organizations internal auditors, accountants, and academic staffs. Secondary data was obtained from audit reports, published a journal and different published oversighting bodies reports. The researcher focused on these public universities which have sufficient internal audit staff, accountants' staffs, financed by big-budget, homogenous, very popular and have a greater impact to influence the country's overall social, political, and economic issues. And for the selection of the universities, the serious irregularity finding of OFAG audit report criticism was considered.

Population

The total population of the study includes 51 public universities in Ethiopia. From which representative sample size was drawn. It is not possible to know the exact number of targeted employees in some of selected universities because of the absence of reliable statistics of the number of auditors, audit department heads, accountants, procurement officers, and ethics-officers for the reasons mentioned, high turnover of employees and lack proper track record human resource data in these selected universities. So average numbering was used to determine sample size from each university.

Sampling Size and Techniques

The study used purposive sampling specifically expert sampling techniques. There are a wide range of purposive sampling techniques that you can use (see Patton, 1990, 2002; Kuzel, 1999, for a complete list). Expert sampling is a type of purposive sampling technique that is used when your research needs to glean knowledge from individuals that have expertise. The target respondents who were participated in this study was selected with purposive sampling particularly (purposive expert sampling) from selected public organization employees who are the accountant, budget officers, internal auditors, audits departmental heads and senior accountants, procurement officers and university lectures. This sampling technique is proposed to be employed because the targeted respondents are experts in their position and said to have access to vital information, experience, and professional skills that were necessary and relevant for the study. Due to their public service duty and responsibility, they have a better understanding of internal controls system of their respective institutions. Therefore, From the population of 51 public universities, only 5 public universities are purposively selected, and these universities administrative and academic staffs' responses are accessed and useable for data analysis. Specifically list of these universities and their respective respondents from: Ethiopia Civil Service University (ECSU),25, Debre-Berhan University (DBU), 12, Kotebe

Metropolitan university (KMPU), 20 ,Haramaya University (HU),20, and from Dire Dawa (DDU), 23, respectively used . Of 100 individual participants 20 of them (who are Finance Director, IT directors, budget officers, senior lectures, Internal Auditors and procurements officer) were interviewed to get further clarifications on application of internal control elements in their respective universities.

Methods Of Data Collections and Instruments

This study used survey type questionnaires and key informants' interview to gather data from different sources were used. Standardized Semi-structured questions were designed based 17 principles of internal control framework model of the Committee of Sponsoring Organizations of the Treadway Commission (COSO), five elements of internal controls: control environment, risk assessment, control activities, information and communication, and monitoring.

The semi-survey questionnaires are designed in the form of the Likert-scale type that shows respondents agreement or disagreement by constructing it into a five-point scale. In addition to survey questionnaires, primary data is collected through key informants' interviews from selected public organizations especially focusing on Finance directors and internal audit leaders.

Methods of Data Analysis

The data collected from different sources is analyzed using descriptive statistics and multiple regression analysis. The data is presented in statistics such as mean, standard deviation, frequency, and percentage with help of SPSS outputs. From inferential statistical tools, correlation, ANOVA (F-test), T-test, OLS estimator of multiple regression analysis, chi-square (R2) etc. is used. OLS estimator of multiple regression Analysis is also conducted to examine ICS determinant factors effect over ICS effectiveness. And furthermore, qualitative information from interviews was analyzed narratively.

Model Development & Specifications

Hence, the researcher adapted the following formula, and the model equation is presented mathematically as follows: -

$$\text{ICEi} = \alpha + \beta 1(CE)i + \beta 2(RA)i + \beta 3(IFC)i + \beta 4(CA)i + \beta 5(MA)i + \varepsilon \qquad Eq\ 1$$

Where,

$\text{ICE} = Internal\ Control\ Effectiveness$

$CE = Control\ Environment$

$RA = Risk\ Assessments$

$IFC = \text{Information and Communication}$

$CA = Control\ Activities$

$MA = Monitoring\ Activities$

$\beta 1 - \beta 5: Parameters\ or\ coefficients\ of\ explanatory\ variables\ to\ be\ estimated$

$\alpha = Constant\ term$ (Intercept of the Regression Line)

$\varepsilon = Residual/error\ terms\ of\ the\ model$

$i = ith\ observations\ \ for\ the\ given\ variables$

III. Results and Discussions

Demographic Profile of the Respondents

The demographic information of the respondents' gathered for this study was gender, level of education, work experience and field of study. From total of 100 overall respondents of the survey, 67 % were male and 33% were females. Regarding level of education, 6% of the respondents were diploma holders, 61% of them were Bachelors, and 27% of them were Master/second degree holders and 6% of the participants Ph.D. holders. This indicates that most of the respondents are highly educated can easily comprehend and fill out the questionnaires. Job responsibility, accountants 36%, Auditors 9%, lectures 29%, HODs and directors 11%, and others 15% respectively.

Concerning work experience of the respondents, 24% of them were up to 5 years of work experience, 37% had work experience between 6-10 years, 25% of them had 11-15 years of experience and the remaining 14% had worked for over 15 years. This indicates that most of the respondents are at their senior level stage of their career has rich experience in the internal control practice of their respective universities.

Reliability and Model Fitness Test

the Cronbach's alpha coefficients for CE, RA, CA, IFC & MA Were 0.9, 0.8, 0.92, 0.91 & 0.85 respectively and their internal consistency were reliable while the internal consistency (reliability) of overall internal control effectiveness was excellent as its Cronbach's is alpha value is 0.96.

Descriptive Statistics of the Variables

Control Environment: Regarding, control environment, 48% of respondents agreed that their organization demonstrated a commitment to integrity and ethical values. This implies that selected HEIs committed to integrity and ethical values for ICS of control environment. But above average respondents 39% uncertain that the university Board of Directors periodically exercises oversight responsibility. Only 26% agree they do.

There is high agreement 53%; the University established an effective structure, reporting line, and appropriate authorities and responsibilities in the pursuit of objectives. Similarly, 48% highly agree that the university management demonstrates a commitment to attract, develop, and retain competent individuals in alignment with objectives and 40% agree the university Management holds individuals accountable for their internal control responsibilities in the pursuit of objectives. However, interviewee participant's claims that control environments of public universities are practically ineffective. Because of University Board of Directors are not exercising oversight responsibilities effectively. Some said the role of the BOD not known, they are busy, and their assignment is not professional; they did not know characteristics of modern higher education. HR system of HEIs needs to be audited for verification how

individuals are recruited, employee's performance efficiency, and retention of employees and segregations of duty.

Presenting more reasoning, lack of proper fulfillment employee's individual role and responsibility as per rule and regulations. Enormous gap exists between their qualification and competency. Additionally, stated lack of qualified personnel at administrative wing and no rotation of duties (unless they are promoted, retire or die); they said one person may work up 10 years in the same position without change the same position. Sometimes posts (positions) are left vacant for relatively longer time and covered by other individuals who may their role overlap control requirement of segregations of duties.

An assistant professor, who has serviced different public university over 10 years, said

> *'I don't think that the most of public Universities are good in controlling and auditing practices. The university has very poor financial management approaches as well as auditing approaches. It has weak approach in recruitment and job rotation on highly sensitive areas such as financial administration, procurement, and finance and property management. These areas are very risky and the areas where high embezzlements take place in public universities. There are no good practices and no responsiveness to take corrective actions although many times communicated for correction during in various academic meetings as well as overall university discussions. Moreover, there are very less freedom for internal auditors though the Ministry of Finance has provided some independence of internal auditors and detached hierarchy of reporting.*

Risk Assessment: Concerning Risk Assessment, above average respondents (43%) agreed that their organization specified objectives with sufficient clarity to enable the identification and assessment of risks relating to objectives. Also, above average respondents (40%) agreed that their organization identified risks to the achievement of its objectives across the entity and analyzed risks as a basis for determining how the risks should be managed. And nearly average respondents (39%) also agreed that the university management considers the potential higher education related fraud in assessing risks to the achievement of objectives. But only 35% participants agreed decided that their organization identified and assessed changes that could significantly impact the system of internal control. However, this result contrasts interviewee finding claiming HEIs managing bodies are not effective in proactively responding to changing aspects of HEIs specific fraud risks.

Control Activities: Control activities include methods such as preparation of reliable reports, update documentation, authorization of transactions, independent review and more in era advanced technology control activities also includes information technology data process and IT infrastructures controls. There is high agreement regarding the establishment of internal control over activities (45%) and their effective implementation (53%) but majority of respondents (46%) keep natural to say HEIs has effective information technology system controls.

About control activities, interview participants narration indicated that, there is little relationship between budget as formulated and budget as executed, poor planning, work scheduling and End of year over spending leading to wastage public money, procurements of less quality and high price good and service. Some procurement is made mostly from limited suppliers at unfair price. Others saying stating rework of tasks are common which leads to high cost of repairs and nonessential expenditures.

while few saying IC, activities are relatively effective in HEIs where IFMIS in practice because they use IT system to controls most Financial transaction flows, controls material, service provisions and also reporting to within given time period.

Information & Communication: Internal communication is how information is disseminated throughout the organization, flowing up, down, and across the entity. Based on frameworks of an effective information and communication in an internal control system. the survey result and interpretation as analysis shown generally, the higher mean value for all question of IFC activities ranging 3.36 to 3.74. This implied respondents' agreement on several expected questions, therefore the Public HEIs in general is good in using information and communicating across departmental level and including external communication with MoSHE and MOF. But evidence from interview opposite this conclusion as one assistance professor said, *"My University is effective in communication with MoSHE and others but weak to communicate internally using appropriate means and not ready to accept complaints from the university community.*"

Monitoring Activities: These parts of COSO Components evaluate the processes used by university management team to examine and assess whether its internal controls are functioning properly. Thus, from the result of the survey majority academic and administrative participates are uncertain (41%) regarding effectiveness of self-evaluation performance of ICS practice. Where us (44%) agreed that university leadership /with BOD implements major corrective recommendations of internal audit, external audit / management consultants on a timely basis.

Generally according to qualitative evidence from interviewee participants, ICS implementations are challenging because of the following reasons: Political interest & Interference, lack of commitment, lack of adequate penalty or no measurement taken by the appropriate body, Lack of proper Segregation of duties, less effort to shape behavior of employees, ethics and code of conducts, lack of effective policies & Procedures specific to HEIs. And Data base system (Documentation) Problem, lack clear awareness about ICS especially IT controls, Lack of knowledge of modern HEIs leadership and oversighting. More severely ineffectiveness of internal audit function and non-value adding audit work, less commitment from management to implementing internal auditors' recommendation and suggestions. Finally, existence of less motivated employees and with mismatched qualifications and inefficiency are mostly described by interview participants as hindering factors.

Inferential Statistics

Correlation Analysis

Pearson correlation analysis result indicated, Internal control effectiveness is highly positively correlated with Control Environment, risk assessment, Control Activities, Information & Communication and Monitoring Activities positively (r= 0.858 at p-value of 0.00), (r= 0.822 at p-value of 0.00), (r= 0. 868 at p-value of 0.00), (r= 0. 803 at p-value of 0.00) and (r= 0.734 at p-value of 0.00) respectively.

The findings again demonstrated that, there is a positive relationship between the dependent variable "internal Control effectiveness" and all the independent variables "control environment, risk assessment, control activities, information & communication and monitoring activities. For example, The Pearson's correlation coefficient between internal Control effectiveness and control environment is 0.858 at P-value of 0.000, this means that the two variables move in the same direction. This implies that an increase in control environment activities increases internal control effectives. The same token increasing Risk assessment Control activities, information and communication and monitoring activities will increases positively internal control effectiveness respectively.

Regression Analysis

Model summary

To verify the assumptions of classical linear regression model fitness the researched conducted normality, multi-collinearity, and homoscedasticity tests/assumptions and proved the data used are relevant to conducted regression analysis and explore the relationship between the independent and dependent variables.

Tabulated result from statistical analysis of the multiple correlation coefficients (R = 98%), represent the linear correlation between the observed and model-predicted values of the dependent variable.

Its large value revealed a positive and strong relationship between the predictor variables and the dependent variable. R2 is 96%, adjusted R Square is 95% and F-statistics is 463 with p-value = 0.000 < 0.05. The result of Durbin Watson stood at an acceptable level of 1.731. The results from the multiple regression analysis therefore showed that 96% variation in the dependent variable, internal control practice effectiveness is accounted for by the predictor variables, CE, RA, CA, IFC and MA when taking as a whole. Also, considering the overall influence of all the components of the COSO internal control framework on organizational effectiveness of the selected tertiary HEIs, the results showed that COSO internal control components had significant influence on organizational effectiveness of internal control practice of investigated public universities of Ethiopia. ($F=463$, $P<0.05$).

Analysis of Variance (ANOVA) or F-Test

The ANOVA table shows the overall significance of the model from a statistical perspective. As the significance value of F statistics shows a value (0.000), which is less than 0.05, the model was significant. This indicates that the variation explained by the model is not due to chance. the p-value of 0.000 for the model was less than 0.05 significant level. This indicates

that the sample data provides sufficient evidence to conclude that the regression model was well fitted. In other words, the p-value (0.000) is highly significant and can be concluded that the five internal control components can predict effectiveness over all internal control practice significantly.

Coefficients of Variables

In addition, the study revealed that internal control components had positive influence on the internal control practice of selected HEIs in terms of Control environment (CE), Risk assessment (RA), Control activities (CA), Information & communication (IFC) and Monitoring activities (MA). Moreover, only 4 out of the 5 predictor variables were statistically significant to explain the unique variance in the dependent variables. Considering the influence of each component of internal control on the overall effectiveness of controls , the results showed that Control activities (CA) (t = 9.774, p = 0.000 < 0.05),Risk assessment (RA) (t = 9.312, p = 0.000 < 0.05), Control environment (CE) (t = 8.55, p = 0.000 < 0.05) and information and communications (IFC) (t = 7.111, p = 0.000 < 0.05) had significant and positive influence on internal control effectiveness of the public universities while monitoring activities (MA) (t = 1.656, p = 0.101 > 0.05) had positive but insignificant effect on overall control effectiveness at 5% significance level.

Incorporating the coefficient of the predictor variables, the multiple regression analysis can be written as follows:

$$\text{ICEi} = -0.161 + 0.266(CE) + 0.221(RA) + 0.308(CA) + 0.2(IFC)i + 0.041(MA) + \varepsilon \quad Eq\ 2$$

Equation 2 above depicted that internal control practice effectiveness of selected public universities will be enhanced on average by 0.266, 0.221, 0.308, 0.2, and 0.041 given a 1-unit increase to strengthen control functions will contributes to improved control environment, better risk assessment, increased control activities, improved information distribution and effective communication and increased monitoring activities respectively.

Testing the Research Hypotheses

Table 5. 1 Summary of Hypotheses Results/Decisions

	Hypotheses	St.Coef Beta	Sig. and T value	Decision/Result
H_1	CE had positive significant effect on effectiveness of internal control practice	.280	.033(-2.17)	Fail to Reject HO
H_2	RA had positive significant effect on effectiveness of internal control practice	.282	.000(8.56)	Fail to Reject HO
H_3	CA had positive significant effect on effectiveness of internal control practice.	.316	.000(9.31)	Fail to Reject HO
H_4	IFC had positive significant effect on effectiveness of internal control practice.	.222	.000(7.11)	Fail to Reject HO

H_5	MA had positive significant effect on effectiveness of internal control practice	.050	.101(1.66)	Rejected H0

Source: Own Survey (2020)

The study result indicated that the effect of CE on effectiveness of internal control practice was significant and positive. That is means statically Hypothesis 1 which stated that control environment has **positive significant** effect on effectiveness of internal control practice in selected Ethiopian public universities is retained. From the result in table 5.1 above, the quantitative analysis fails to reject, Hypothesis 2 (H2) stated that Risk Assessment practices have positive significant effect on effectiveness of internal control practice in selected Ethiopian public universities.

Similarly, Hypothesis 3, Control Activities have positive significant effect on effectiveness of internal control practice in selected Ethiopian public universities and Hypothesis 4, the presence of Information and Communication has positive significant effect on effectiveness of internal control practice in selected Ethiopian public universities are accepted. But Hypothesis 5, rejected. That means Availability of Monitoring Activities has positive but insignificant effect on effectiveness of internal control practice in selected Ethiopian public universities.

IV. Conclusion And Recommendations

Conclusion

Overall finding of the study reveals that effectiveness of IC practice positively and highly correlated with control environment, risk assessment, control activities, information & communication, and monitoring activities. Moreover, the study indicated that HEIs managing bodies are less than average in proactively responding to changing aspects of HEIs fraud risks, weak in IT securities control and less effective public university board of directors' oversighting functions. The study concludes HEIs have wide-ranging internal control policy and procedures similar COSO components but in the practical functionality of these controls are limited. Overall, the HEIs internal control system was not very effective.

Recommendation

The damage made to public money indicates in this study could probably have been avoided, or otherwise minimized, had the HEIs maintained functional effective internal control systems practiced. Such systems would have prevented or enabled earlier detection of the problems that led to the losses, thereby limiting damage to public money. Accordingly,

1. To Enhance the HEIs ICS effectiveness, policy makers and higher education leaders should reform modern HEIs specifics integrated internal control process which is supported by strong external oversight bodies and making them true center of excellency and relatively independent institutions to achiever their established objective.
2. The BOD is required to exercising strong strategic oversight responsibility effectively considering lesson of modern higher education leadership system.
3. Enhance the institution's risk assessment policies to detect and prevent any possible risk before occurrence of loss via ongoing risk assessment and effective risk based Internal audit functions.

4. HEIs need to implement/strengthen use of IT based system products and proactive controls. Also advised to seize opportunities of National digital strategy titled "Digital Strategy for Inclusive Prosperity 2025" initiatives of e-governance service by FDRE which university specific Digital Technologies to modernize academic and administrative activities, data protection, security, and confidentiality.
5. Develop human resource controls, motivation, and retention scheme ensuring that the segregation of duty and authority of each administrative and academic employee is properly implemented.
6. Finally, it is important to work on institutional controls in collaboration with external oversighting bodies, Including Information Network Security Agency and Office Of Federal Auditor General.

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