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Analysis of the global and local emerging issues and its influence on the Ethiopian sugar industry

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Abstract---This article aimed to assess the global and local emerging issues and the effects of these issues on the Ethiopian sugar industry. A qualitative research design was applied in the course of the study. Data was collected from the participants in the Ethiopian Sugar Industry Group and the Group's key stakeholders through interview and Focus Group Discussion. Fifty three participants, selected through a non-probability sampling method, took part in providing data, which later was analysed qualitatively. It was concluded that the shifting of consumer preferences in the global market due to the growing health concerns, the sugar production volatility caused by climate change, pressure of global forces calling for eco-friendliness in production, and strict competition between the old-new emerging markets for the sugar product are the major key issues which determine the sugar industry's development prospects in Ethiopia. The interaction between global issues like sugar price and demand trend, trade policies, and technological advancements in production and processes, and the local situations of a nation such as state policies, production efficiency and related resources like the labour determines the industry's ability to compete both locally and internationally. Thus, in order to address the global and local challenges impacting Ethiopia's sugar industry development, actionable strategies such as heightening the private sector investment to bring new insights, technologies and experiences to the industry, continued infrastructure development, industry diversification into the value-added products, implementation of the environment-friendly production practices, and introducing supportive policies that address the supply chain issues are suggested.

Keywords---Sugar-industry, Emerging-issues, Global-issues, Local-issues, Sustainability.

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1. Background

The Ethiopian sugar industry has a rich history and plays a significant role in the country's economy. It began in 1951 with the establishment of the Wonji Sugar Factory, located about 110 km east of Addis Ababa. This factory was a joint venture between foreign private investors and the Ethiopian government. Over the years, the industry expanded with the addition of factories, and now the industry, under the Sugar Industry Group established in 2022, owns and directly administers Omo- Kuraz Sugar Factory two and three as well as Omo- Kuraz Sugar Development one and five; Arjo Didesa Sugar Factory, Welkayiet Sugar Development Project while the Group is the full shareholder of Wonji/Shoa, Metehara, Fincha, Kesem and Tana Beles sugar factories which are converted into share companies of the Group (Ethiopian Sugar Industry Group, 2023).

The Ethiopia's sugar industry has embarked on a growth trajectory that hinges on comprehensive development strategies aimed at increasing production capacity and enhancing sustainability. The government's initiatives seek to establish state-of-the-art sugar factories and expand cultivable land for sugarcane, leveraging both domestic and foreign investments (Binyam Semret, 2014). Thus, with 86,355 Hectar total land covered with sugarcane, the Ethiopian Sugar Industry Group has been working towards reaching the production of 726,670 tons of sugar by 2026/2027 in its five year strategic plan (Ethiopian Sugar Industry Group, 2022). In this article, the emerging issues with potential to affect the sugar industry's development endeavour are thus assessed.

2. Problem statement

The Ethiopian sugar industry is a critical sector for the country's economic growth, employment, and export earnings. However, it faces mounting challenges from both global and local emerging issues. On a global scale, factors such as fluctuating sugar prices, climate change, and shifting trade policies are reshaping the industry (Sheetal, & Kumar, 2019; Anito, 2023; Clark, 2024). Locally, issues like policy inefficiencies, infrastructure gaps, and evolving market demands exacerbate the sector's struggles (Ethiopian Sugar Corporation, 2018; Abraham Demissie, 2020). Despite its potential, the Ethiopian sugar industry has been unable to fully capitalize on opportunities presented by these emerging trends, hindering its competitiveness and sustainability (Abraham Demissie, 2024). An in-depth analysis of these global and local dynamics is essential to understand their impacts and identify strategies for ensuring the industry's resilience and growth.

3. Objective

The general objective of this research is to assess the global and local emerging issues and the effects of these issues on the Ethiopian sugar industry. Specifically, the research aims to (1) carry out a comprehensive assessment of the key global emerging issues affecting the sugar industry, and how do they influence the Ethiopian sugar industry specifically; (2) evaluate what local issues are shaping the Ethiopian sugar industry's performance and development; (3) analyse how the global and local factors interact to impact the competitiveness of

the Ethiopian sugar industry in the market; and (4) propose actionable strategies of adaptation to sustainability concerns in the industry while maintaining productivity and profitability.

4. Methods

A qualitative research design was applied in the course of this research. From the population of Ethiopian Sugar Industry Group, sugar factories, and key players in the sugar industry, sample participants are selected by means of judgmental sampling methods. Thus, 29 participants have provided data through interview, and 24 have taken part in the Focus Group Discussion. Key informant interview, and focus group discussions are used to collect data. The data was analysed qualitatively.

5. Literature review

5.1. Determinants of the sugar industry development

The sugar industry faces numerous global and local challenges that impact its sustainability and economic viability. Climate change and environmental degradation pose significant threats to sugarcane production worldwide, particularly in developing countries, which are more vulnerable due to poor adaptability and insufficient mitigation strategies (Mudassar et al., 2024). The industry also grapples with economic and market-related issues. In Fiji, the sugar sector faces a 'perfect storm' of difficulties, including world trade challenges and local production problems (Dean, 2022). Similarly, the Indian sugar industry struggles with cyclical production patterns, financial distress of mills, and rising problems for sugarcane farmers (Sheetal & Kumar, 2019). The COVID-19 pandemic has further exacerbated these issues, impacting the entire value chain of the sugar industry in India and globally (Solomon et al., 2020). Interestingly, while the industry faces numerous challenges, there are also opportunities for improvement and innovation. The concept of a circular bio-economy is emerging, with potential for developing sustainable bio-refineries annexed to existing sugar industries (Farzad et al., 2017). Additionally, the sugar industry has the potential to align with the 2030 agenda for sustainable development and circular economy principles, which could help maximize its sustainability potential.

5.2. Regional and multilateral trade arrangements

In terms of the regional and multilateral trade arrangements, the participants from the Ethiopia's sugar industry have limited knowledge. However, relevant global scenarios can be drawn. In this regard, Kumar (2016) indicated India's bilateral development cooperation with Ethiopia has had a significant impact on the Ethiopian sugar industry. In 2006, for instance, India provided a USD \$640 million Line of Credit (LoC) to Ethiopia for sugar industry development. This bilateral arrangement has helped Ethiopia move towards self-reliance in sugar production, with the potential to produce 1.6 million tonnes of sugar per year upon completion of on-going projects.

Similarly, studies on intra-African trade suggest mixed results regarding the impact of regional trade arrangements on economic growth. One study found a positive long-run relationship between intra-African merchandise trade intensity and economic growth (Musila & Yiheyis, 2023). In another study, a negative relationship between various measures of intra-African trade intensity and real GDP per capita growth was observed (Musila & Yiheyis, 2022). Yet, bilateral cooperation like India's LoC have direct impact on the Ethiopia's sugar industry, but the impact of broader regional and multilateral trade arrangements on the industry is not explicitly addressed currently. Thus, taking into account contextual issues, it is vital to identify the impact of such arrangements that determine the Ethiopian sugar industry development.

International trade agreements significantly impact the sugar industry's development through various mechanisms: Free Trade Agreements (FTAs) play a crucial role in shaping sugar trade. The North American Free Trade Agreement (NAFTA) and the Dominican Republic and Central American Free Trade Agreement (CAFTA-DR) have influenced sugar imports to the United States from Western Hemisphere producing countries (Hernandez, 2016; Aquino, 2018). These agreements typically reduce or eliminate tariffs and trade barriers, making it easier for sugar producers to export their products to foreign markets. However, the impact of FTAs on sugar trade is often overshadowed by tariff rate-quotas (TRQs), which have shown to weigh more heavily than other factors in U.S. sugar imports (Hernandez, 2016).

5.3. Trade regulations

The sugar market has historically been one of the most regulated in the agri-food sector, with administrative restrictions on supply, protectionist foreign trade policies, and minimum procurement prices (Hryszko & Szajner, 2017). The Sugar Protocol between the European Union (EU) and African, Caribbean and Pacific (ACP) countries significantly affected sugar trade until its renunciation in 2007. This led to a gradual reform process, culminating in reciprocal Duty Free Quota Free non-preferential access for all sugar producers in 2017 (Nyirenda et al., 2017). The reforms implemented thus far have positively influenced the industry.

Besides the local issues, numerous emerging issues determine the development of the sugar industry lest the issues might vary from country to country. According to Afrin (2023), economic viability of the sugar industry is a major challenge in many regions of the world. Thus, according to the study, the industry is falling short of profitability due to sustained losses, which in turn led it unexpectedly less economic contribution and viability. The effectiveness of government policies and regulatory frameworks also has significant impact on local sugar industries. In Ethiopian case, as argued by Zikargie, Wisborg, & Cochrane (2022), the state-led modernization efforts have raised questions about power dynamics and local players.

In conclusion, the sugar industry globally faces a complex set of challenges, ranging from environmental concerns to economic and market-related issues. However, there are also opportunities for innovation and sustainable development. Addressing these challenges will require coordinated efforts from

various stakeholders, including governments, industry players, and farmers, to ensure the long-term viability and sustainability of the sugar industry (Aguilar-Rivera, 2022; Sheetal & Kumar, 2019).

6. Result and Discussion

The sugar industry is facing several global emerging issues that are reshaping production, trade, and consumption patterns. These challenges also have direct implications for Ethiopia's sugar sector. In this section, the result of discussions in light to the research objects is presented.

6.1. Key Global Emerging Issues Affecting the Sugar Industry

The discussion with key stakeholders and analyses of literature on this area threw light on the issues such as the shifting health concerns, climate change, technological advancement, and emerging markets (SGS Digicomply, 2025). Accordingly, due to health concerns like diabetes and the excessively growing investment requirement on social services, the actors in the health sector in many countries, are implementing sugar taxes and regulations to curb excessive consumption (World Health Organization, 2022). Thus, for high tendency of such jurisdictions, the demand for reduced-sugar products is rising.

During the interview, it was revealed that “the sugarcane production is highly sensitive to climate conditions the common phenomenon like drought causes production volatility in Ethiopia as it is elsewhere globally” (Interviewee 3 & 6). In a similar tone, the interviewees highlighted, at global level, there are calls for “sustainable sourcing initiatives focusing on eco-friendly sugar production” along with the precision agriculture and genetically modified crops that improve yields while improving reducing environmental impact” (FGD 1; Interviewee 6).

In terms of the trade Dynamics, currently, the role of the traditional powerhouses such as the EU and the U.S. is being replaced (gradually) by the new players in Asia and Africa, and thus eyeing on these new markets will certainly be of high importance (Interviewee 8; 7 &2).

Since sustainability poses questions on the practices of the sugar out growers at local level, discussions focusing on the out growers indicated sugarcane out-growers in Ethiopia face several challenges in the sugar industry, which in turn impact production and sustainability. One of the key issues is “access to inputs.” (FGD1 and 2). Out-growers often struggle with obtaining quality seedlings and fertilizers; and irrigation facilities are poor, which affects crop yield and profitability. Moreover, many out-growers are dependent on the state’s sugar mills as they are the only players which set the price.

The other issue is financial- out growers have limited access to credit and financial services to invest in better farming practices or technologies. Moreover, the out growers do not have necessary technical support and training for efficient sugarcane farming practices.

These responses go in line with findings of some available researches on sugarcane out-growers in countries like Tanzania (Mbua, & Atta-Aidoo, 2023; Andreoni, Mushi, & Therkildsen, 2020). These studies highlighted the importance of integrating sugar cane out growers into broader economic frameworks so as to improve their output and livelihoods. Thus, addressing these challenges is crucial for enhancing the sugar industry development while enhancing the industry's contribution to the national and local economy and community livelihood.

In terms of private actors, the discussion with key management and stakeholders in the Ethiopian sugar industry pointed out the “issues in privatization along with continued government interference, shortage of infrastructure and loops in regulatory framework.” (FGD 1 and FGD 2). Perhaps, pooling private players to the sugar industry can bring multiple advantages to the industry's development. Taking this into account, privatization of the sugar factories have been attempted numerous time yet it failed (Abraham, 2020). Past studies indicated why the privatization of the sugar industry in Ethiopia has failed due to several obstacles that have hindered its success. According to Yidneckachew, Wisborg, & Cochrane, 2022), the government's continued involvement in the sugar sector is the primary factor that has been undermining the privatization efforts in sugar industry in Ethiopia. The study added that the “state-led modernization initiatives overshadowed private investments; leading to power struggles and conflicts over control and resources” (Yidneckachew, Wisborg, & Cochrane, 2022).

6.2. The local issues shaping the Ethiopian sugar industry's performance and development

Regarding the regulatory and policy challenges, at the local level, researches indicate unclear regulatory framework and inconsistent policies in terms of management, setting price, and distribution of the product among others creates uncertainty for private investors. This lack of a stable business environment can deter potential investment and complicate operational strategies (Maiwada, & Khalid, 2012). Similarly, deficiency of infrastructure such as road networks and energy supplies determine the attractiveness of private investment to sectors that operate in remote areas like the sugar sector in Ethiopia. Without significant improvements in these infrastructure, private operators cannot be attracted to the industry (KI 2, 6 and 7; FGD I and FGD II).

Another critical issue in the context of the Ethiopian sugar industry relate to sugar trade. Underlined by the participants of interview and group discussion, some of the critical issues that impact efficiency and profitability in Ethiopian sugar industry are the influx of imported sugar, consistency of product quality, and inquiry of sustainable practices within the sugar trade. Interviewees (KI 7, 9, 11) pointed out “even though we are not self-sufficient in producing sugar, the inflow of illegally imported sugar is a threat for potential private investors as it would lead to price fluctuations in future while reducing the producers' market share.” Added to this, KIs (1, 4 and 6) indicated inconsistent trade regulations in Ethiopia create barriers for both domestic and foreign investors, and so need improvement to facilitate market entry and compliance for local producers”

During the FGDs, issues such as quality standard and occupational health and safety issues of the industry workforce were mentioned as critical emerging issues in the Ethiopian context. “Issues with quality can affect consumer trust and market competitiveness, and thus ensuring consistent quality in sugar production is essential for both domestic consumption and export potential” FGD I & FGD II). Moreover, occupational health and safety, and payment issues have remained within Ethiopia’s sugar industry as these affect productivity and worker morale, further complicating trade dynamics (Debela, et al, 2023).

In terms of sustainability practices in the sugar industry, waste management and environmental stewardship issues were emphasized by the participants (FGD I & II; KI 5, 8 and 12). “In any industry, there are global and local standards required to be met for sustainable practices in production as well as trade. Thus, failure to adopt these practices could lead to trade restrictions and reduced market access over time.” (KI 5).

These factors collectively contribute to the challenges faced by the Ethiopian sugar industry in Ethiopia.

A recent research work (ESIG, 2024) by the industry has come up with a list of major emerging issues like “the global market volatility, sustainability and environmental standards, trade policies and tariffs, shift in consumption patterns, and impact of global climate change.” Since sustainability is a critical issue, participants during the interview and discussion also indicated this:

... while Ethiopia is planning to export the commodity, it needs to take into account that the international buyers and markets are pushing for more sustainable sourcing of sugar, which includes reducing carbon footprints, conserving water, and minimizing chemical use. Thus, Ethiopia’s sugar industry needs to align with these global standards to stay competitive in export markets (KI 3; FGD II).

In country-specific scenario, the expansion of sugar plantations, especially in regions like the Lower Omo Valley, has led to conflicts with local communities over land use. Indigenous groups and pastoralists have been raising concerns about displacement, loss of grazing land, and inadequate compensation, and thus, a responsive strategy is required to cope up such challenges (FGD I and FGD II).

6.3. Interaction of the global and local factors to impact the competitiveness of the Ethiopian sugar industry

The competitiveness of the Ethiopian sugar industry is shaped by a complex interplay of global and local factors (Diao, et. al. (2021). Fluctuations in international markets can either boost or hinder competitiveness (Interviewee 7). Similarly, any change made effective in the time between the planning and implementation of a nation’s sugar industry development plan can “certainly be affected by the international trade agreements and tariffs in terms of the nation’s ability to compete in global markets” (FGD 1). Underlining this, an interview put the example: “preferential trade agreements can provide an edge,” which complies to a recent market research (Williams & Marshall Strategy, 2025)

Another key issue as trending globally is how advancements in technology can affect the industry in Ethiopia. In this regard, Anito (2023) underlined, innovations in sugar production and processing globally set benchmarks that Ethiopian producers must meet to remain competitive. According to I8 (Interview), the sugar factories in Ethiopia, on condition they wish to export their products, should meet the international standards- both in terms of processing capacity and technologies in place- but, the question is- do they have sufficient finance, or should they remain dependent on their loan sources?

During the focus group discussions as well, participants came up with strong deliberations about the interaction of global and local issues which go side by side in affecting the sugar industry development irrespective of a country's capacity to produce as much product as it wishes. Thus, the growing competition in technological advancements will always remain a challenge to compete in global market because "as outdated technology, inefficiencies in production, and limited access to modern farming techniques affect competitiveness" (Interviewee 5 & 7; FGD 1 & 2). Moreover, the impact of contribution of the policy issues as positively or negatively affecting the way the global and local emerging issues interact as indicated in the researches of Anito (2023; Feenstra, 2008), which stated, "Policies on subsidies, taxation, and infrastructure development play a crucial role in shaping the industry's growth and competitiveness (page 81).

7. Conclusions and ways forward

The study confirmed the shifting of consumer preferences in the global market due to the growing health concerns, the sugar production volatility caused by climate change, pressure of global forces calling for eco-friendliness in production, and strict competition between the old-new emerging markets for the sugar product are the major key issues which determine the sugar industry's development prospects in Ethiopia.

The interaction between global issues like sugar price and demand trend, trade policies, and technological advancements in production and processes, and the local situations of a nation such as state policies, production efficiency and related resources like the labour determines the industry's ability to compete both locally and internationally.

In order to address the global and local challenges impacting Ethiopia's sugar industry development, some actionable strategies such as heightening the private sector investment to bring new insights, technologies and experiences to the industry, continued infrastructure development, industry diversification into the value-added products, implementation of the environment-friendly production practices, and introducing supportive policies that address the supply chain issues are of high importance to tackle both immediate challenges and long-term development in the industry.

8. Limitation of the study

This article is an output of an entirely qualitative data obtained through interview and focus group discussion. Due to the time such study requires, the number of

samples is limited which in turn affects generalizability and replicability. However, for the article is based on the extensive PhD dissertation by the researcher, the extract article puts light into the key emerging issues the Ethiopian sugar industry players need to give attention to.

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