BOOK OF ABSTRACTS

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Empirical Analysis of International Trade and Economic Growth in Ethiopia

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ABSTRACT

This study would look at the empirical analysis of international trade and economic growth in Ethiopia for the period of 1992- 2022 by using annual data from World Bank. For the analysis of international trade and economic growth, Vector Auto Regressive Model, Johansen co-integration analysis were implemented. Moreover, the Granger causality test (GCT) was performed to see the causality between endogenous and exogenous variables. From applied Johanson cointegration and VECM The outcomes of this study showed that that there is no cointegration between exports and GDP growth and there is negative cointegration between imports and export and also imports with GDP growth in the short run, but both imports and exports have causality in the long run with GDP growth. However, unlike to exports, imports cause negatively to the GDP growth in long run. And from the Granger causality test, we found out that exports have strong unidirectional causality with GDP growth and bidirectional causality with imports. This implies that trade/export-led growth is the appropriate policy for Ethiopia and policy makers should follow this policy.

Keywords: Trade, Economic Growth, Co-integration, VAR, Ethiopia.

Intertemporal Dynamics and Determinants of Welfare Inequality among *Enset*-producing and Nonproducing Households in Central Ethiopia: Insights from Panel Data

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ABSTRACT

Reducing inequality is a critical sustainable development goal (SDG), yet welfare inequality remains a persistent challenge for development and food security in developing countries. This study investigates the dynamics and determinants of welfare inequality among Enset-producing and non-producing households in Central Ethiopia from 2019-2024. Using panel data from 270 households across two waves (2018/19 & 2021/22) LSMS Data from the Ethiopian Statistics Agency & the World Bank, and additional surveys (2023/24), the study employs descriptive statistics, factor analysis, the Atkinson index, and quantile regression models to analyze trends in welfare (asset and expenditure) inequality. The findings reveal that non-producer households consistently exhibited greater asset inequality, with the Atkinson index rising from 0.356 in 2019 to 0.781 in 2024, compared with an increase from 0.262 to 0.582 among producers. However, expenditure inequality for non-producers has steadily increased and fluctuations for producers over time. The determinants of inequality vary across groups and quantiles. For non-producers, education, sex, household size, age, credit access, income, and shocks significantly influence expenditure inequality. Among producers, factors such as education, remittances, land size, credit access, income, and shocks play pivotal roles. Asset inequality was similarly influenced by education, marital status, remittances, shocks, and land size, particularly in higher quantiles. These results highlight the heterogeneous effects of socioeconomic characteristics on welfare inequality, underscoring the need for targeted policies. Interventions should focus on improving education, credit access, and income opportunities; supporting shock-affected households; and promoting equitable land distribution and effective use of remittances to reduce growing inequalities in diverse household contexts.

Keywords: Atkinson index, Central Ethiopia region, Inequality, Quantile regression, Welfare

Comparative Study of Multidimensional Poverty among Peri-Urban and Rural Households in Siltie Zone, Central Ethiopia

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ABSTRACT

Multidimensional poverty is pervasive in rural and urban households but peri-urban poverty is neglected in previous studies. The general objective of this study is an analysis of the comparative study of multidimensional poverty among rural and peri-urban households in Silte zone, central Ethiopia. This research employed mixed research approach. The research data are collected from 417 randomly selected rural and peri-urban households using structured survey questionnaires. Alkire & Foster methodology is employed to measure multidimensional poverty. Ordered logistic regression model is used to investigate the determinants of multidimensional poverty. Results of the descriptive analysis show that 89 % of the sample respondents are multidimensional poor. The intensity of poverty is 78.2% and the adjusted headcount ratio is found to be 69.6%. Dimensionally, exposure to risk is the highest contributor to multidimensional poverty (25.2%) followed by the education (24.2%), living standard (21.6%), health (20.6%) and livelihood/social capital (8.3%) dimensions. Multidimensional poverty is higher in rural areas 71.5% than peri-urban areas (67.2. Additionally, the multidimensional poverty is higher in the Midland area (72.4 compared to) highland areas (65.9) within the study zone. Furthermore, results of the regression analysis indicated that; sex of household head and agroecology (topography) are inhibiters to multidimensional poverty. On the other hand educational, total farm size and area of residence are contributors to households being multidimensional poor. Policy should give top priority to minimize multidimensional poverty of female households, midland areas and rural areas.

Keywords: Rural, peri-urban, multidimensional poverty, ordered logit, Central Ethiopia

Sources of Inflation in Sub-Saharan African Countries: A System Generalized Moment Method

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ABSTRACT

Inflation has been a recurrent issue in Sub-Saharan African countries, impacting productivity, social welfare, and living standards. Understanding the fundamental causes is necessary, to develop innovative remedies tailored to each country's unique economic and social realities. This study looked into the causes of inflation in Sub-Saharan African countries by combining multiple inflation theories into a theoretical framework and using the system generalized moment technique as an analytical model. The study investigated panel data from 43 Sub-Saharan African countries and 34 sample years from 1990 to 2023. The descriptive findings demonstrated that inflation follows the direction of money supply expansion in SSA. In the SSA countries, high average economic growth was accompanied by low average annual inflation rates for the relevant periods. Zimbabwe, South Sudan, and Ethiopia have the highest average inflation rates in Sub-Saharan Africa over the last decade. The regression results showed that money supply, population growth, import level, and one-year lagged price are positively and significantly connected with inflation, whereas economic growth, government spending, and exchange rate are negatively and significantly associated with inflation in Sub-Saharan African countries. The findings support both the quantity theory of money and the demand-pull theory of inflation. Promoting economic growth through increased productivity, efficiency, and output diversification, as well as executing prudent monetary policy and reducing reliance on imports, may improve short-run inflationary pressure and long-term economic stability in Sub-Saharan African countries. Thus, controlling inflation necessitates a balanced approach that includes structural changes, competent monetary policy, and resilience to external shocks.

Keywords: Inflation, Economic Growth, Panel Data, Generalized Moment Method, Sub-Saharan Africa

Bridging the Gap: Digital and Financial Literacy Skills as Catalysts for Leveraging Financial Inclusion in Ethiopia's Socioeconomic Disparity Contexts.

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ABSTRACT

In Ethiopia, where financial exclusion remains an active policy agenda, this study investigates the influences of digital and financial literacy in driving digital financial service (DFS) usage, applying structured data from the Ethiopian socioeconomic survey. Through principal component analysis and mixed-effects logit/probit models accounting for adults' financial behavior dependency within the same household, the study uncovers critical disparities in DFS inclusivity. The analysis reveals significant inequalities. e.g., urban residents exhibit significantly higher DFL scores than their rural counterparts, and men report greater literacy than women. Mixed-effects regression reaffirms that both DFL and FL robustly predict adults' acceptance of DFS. A one-unit increase in DFL corresponds to a 5.6 times rise in the log-odds of DFS usage ($P<0.001$), while FL shows a smaller but significant effect (log-odds=0.37, $p<0.05$). The result implies literacy's pivotal beneficial role in bridging the deep digital divide. Notably, rural adults face nearly 50% lower odds of DFS adoptions compared to urban dwellers. Women lag by 49%. Regional disparities are persisting for Afar and Gembela, while Somali has shown gains. Income further stratifies digital finance access; weekly earners adopt DFS at 3.7 times higher than the rate of low-income groups ($\beta=1.32$, $P<0.001$). Robust household-level clustering explains 25% of the variance in usage patterns ($\alpha^2=5.23$, $P<0.001$), highlighting intra-household dependencies. These findings underscore the urgency of tailored interventions. Extending ICT developments in rural areas, providing gender and community literacy education, and designing income-inclusive DFS products could dismantle persisting barriers. By aligning digital ecosystem policy with socioeconomic heterogeneity, stakeholders can advance the national goals, ensuring no one is left behind in the digital finance revolution.

Keywords*: digital financial literacy, financial literacy, financial inclusion, Ethiopia, socioeconomic disparities, mixed-effects models*

Green Business Practices and Social Sustainability Performance in Ethiopia's Leather, Textile, and Garment Industries: The Mediating Role of Green Innovation --- A PLS-SEM Analysis

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ABSTRACT
The global shift towards sustainability has driven industries to adopt green business practices, particularly in Ethiopia's vital leather, textile, and garment sectors, which face significant environmental challenges. This study aims to clarify how synergistic green practices—such as Green Manufacturing Practices (GMP), Green Marketing Orientation (GMO), Green Human Resource Management (GHRM), and Green Investment (GIV)—impact the social sustainability performance (SoP) of medium and large companies in these sectors, alongside the role of green innovation (GIN). Utilizing a quantitative approach and cross-sectional survey methodology, the research engaged 201 top managers, executives, and heads of CSR and environment determined by parameter ratio approach, and through stratified sampling. The hypothesis was tested using Partial Least Squares Structural Equation Modeling (PLS-SEM). Results indicate that green practices—such as green marketing orientation, green HRM, green investment, and green manufacturing—significantly enhance firms' social performance. All practices, except green HRM training, notably influence green innovation. While green innovation strengthens the relationships between green marketing, manufacturing, investment, and social sustainability performance, it does not mediate the link between green HRM practices and social sustainability. This research aligns with UN Sustainable Development Goals (SDGs) 8, 12, and 13, offering a framework for understanding the role of green practices in achieving social sustainability and providing valuable insights for practitioners to prioritize eco-friendly procedures, improve customer relationships, and reduce environmental impact.

Keywords:
Green Manufacturing Practice, investment practice, marketing orientation, HRM practice, Innovation, Structural equation modeling (PLS-SEM), Social Sustainability performance.

Cultural Festivals and Events for Sustainable Tourism in Guraghe Zone, Ethiopia

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ABSTRACT

The Guraghe Zone in Ethiopia, renowned for its vibrant cultural heritage, presents significant opportunities for advancing sustainable tourism through its rich array of intangible cultural assets. This study investigates how cultural festivals in the region—such as Neque, Kurifiwe, Azemene, Sebat Bet Guraghe Traditional Council (Ejoka), and the annual Guraghe Cultural Festival—serve as catalysts for sustainable tourism by preserving cultural identity and fostering economic growth. Conducted from March 2022 to June 2024, the research utilized field observations, stakeholder interviews, and a comprehensive literature review, with data analyzed using SPSS version 29. These festivals are integral to the community's social fabric, playing a crucial role in maintaining traditional practices and enhancing community cohesion. They attract both domestic and international tourists and act as vital mechanisms for sustaining cultural heritage, preserving traditional ecological knowledge, and facilitating intergenerational learning. Beyond their cultural significance, these festivals have substantial economic impacts by promoting local crafts, cuisine, and hospitality services, which, in turn, create job opportunities and improve the livelihoods of residents. The findings suggest that effectively leveraging these cultural festivals can enable the Guraghe Zone to achieve a balance between cultural preservation and economic development. This approach aligns with Ethiopia's broader sustainable tourism objectives and positions the Guraghe Zone as a model for integrating cultural heritage into tourism strategies. By demonstrating how cultural festivals can drive sustainable growth while preserving and celebrating cultural identity, this model supports the region's long-term socio-economic development and highlights its potential for replication in other regions.

Keywords: *Sustainable tourism, cultural festivals, Guraghe zone, cultural heritage, Economic Development*

Factors determining the participation of pastoralists and agro-pastoralists in the value chain and marketing of products from *Dracaena ombet* in Afar, Ethiopia

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ABSTRACT

Pastoralists and agro-pastoralists collect several products and benefit from dryland forest species. However, the information on marketing systems and local producers' participation in the market is limited. This paper aims to analyze the market opportunities, market routes, key actors, and value chains of *Dracaena ombet* Heuglin ex Kotschy and Peyr products that determine the market participation of local communities in the Afar region, Ethiopia. The primary data were collected through semi-structured interviews, key informant interviews, focused group discussions, and field observation. A market and value chain analysis was carried out, and socioeconomic factors affecting production of marketed products and households' participation in the market of *D. ombet* products were evaluated using ordinary least square (OLS) and Probit regression model respectively. Utensils were the common products of the species in the local market. There is a significant variation in supplying products among the *D. ombet* producers in the area. Limited financial support for producers and a lack of marketing initiatives are affecting the production and marketing of the products and demotivating local producers. Age, educational status, market distance, forest distance, market information, source of income, wealth status, and location of the households had influenced the level of participation of the households in the market of *D. ombet* and this was statistically significantly *($p \leq 0.05$)*. The value chain for *D. ombet* products is not strong. Policy initiatives are required to strengthen marketing potential and value chain actors to enhance rural livelihoods for sustainable utilization and management of dryland forests.

Keywords: households, marketing system, market actors, market routes, value chain

The Effect of employees Competency on Organizational Effectiveness with the Mediating Role of Training: The Case of selected industrial parks in Ethiopia.

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ABSTRACT

In today's globalized economy, organizations face ever-increasing competitive and social pressures. In recent times, there has been an increasing interest in understanding the concept of organizational effectiveness. However, many of the studies fail to investigate the contextual factors that influence the effects of employee competency on organization effectiveness. This paper aimed to identify the effects of employees' competency on organizational effectiveness using the mediating roles of training. The effect of employee competency on organization effectiveness training as a mediator variable was studied using a sample of employees from selected industrial parks in Ethiopia. Both descriptive and explanatory research method was used. 340 sample employees were used for the analysis using stratified sampling procedure and proportionate stratified random sampling was employed. Both primary and secondary data were used for the study. Qualitative and quantitative (Mixed) research approach was employed for the study. The structural equation model and multiple regression analysis were employed for this study. The study finding revealed that Self-competency, team competency, change competency, and ethical competency were found to be significant influencers of organizational effectiveness through training. Only communication competency was found to be insignificant contradicting the hypothesis and previous empirical findings. Therefore, the researcher recommended that it is very important for policy makers and regulatory bodies to minimize the administrative pitfalls that are visible in devoting more time to assure organizational effectiveness.

Key words: Self-competency, team competency, change competency, and ethical competency, organizational effectiveness.

Addressing Identities Inequality and Social Exclusion for Diversity Management in African States: Lessons to Ethiopia?

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ABSTRACT

Diversity management is both a requisite and an outcome of peace building, which entails the integration of different identity groups into a community of citizens under a shared system of institutions. There is a general consensus that diversity, in itself, is not directly a cause of conflicts. There are hardly any countries in the world that are not characterized by diversity and yet most of them do not experience diversity-related conflicts. Hence, the problem rather emanated from the conditions that govern the relations among diverse groups. The study examined few African states indigenous approaches to foster equality and promote inclusiveness in diversity. Challenges of managing diversity and experiences of diversity management in a few African states, which can be lessons for Ethiopia, were also the targets of this study. The methodological analysis of this study was based on secondary data i.e. document review. The results show that African states have faced problems in managing diversity, which is reflected in the form of ethnicity, religion, language, and political competition. Diversity based challenges are associated with historical and colonial legacies of uneven development as well as institutional fragmentation; grievances by different identities over real or perceived relative deprivation in access to resources, and deficit in governance. On the other hand, progressive indigenous cultures like Ubuntu, which promote human dignity and social harmony, provide valuable insights of embracing diversity for sustainable peace. It can be concluded that poor management of diversity made some African states unable to ensure equality and social inclusiveness. In Ethiopia too, the federal system, which has been used since 1991, emphasizes and promotes identities of diverse groups constitutionally. However, Ethiopia is not free from diversity based conflicts yet. Hence, it is recommended to strengthen institutions of democratic governance, promote inclusive narratives, and encourage cultural harmony via mutual respect. In addition, educational and training programs should also be given based on progressive indigenous values to embrace inclusiveness in diversity.

Key words: *Diversity management, Equality, Inclusiveness*

Challenges for Reintegrating female Victims of Human Trafficking: From the Voice of Ethiopian Female Migrants Returned from the Kingdom of Saudi Arabia (KSA) in case of Jimma Town

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ABSTRACT

The purpose of this study is to explore the Challenges for Reintegrating female Victims of Human Trafficking who Returned from the Kingdom of Saudi Arabia (KSA). The data for the study were collected from returned female migrants (n=7) and experts of labor and social affairs office (n=2) using snowball and purposive sampling respectively. The study used a phenomenological design and the data were gathered through unstructured interview. The researchers organized and thematically categorized the data using explicitation. As the findings of the study revealed the challenges that hinder the returned migrants from reintegrating in the society were access to market, lack of support, the returned migrants themselves, training opportunity, dissatisfaction with current work, acceptance of the society, life difficulty in Ethiopia, miss-match of the perceived information about their country, the economic status of the returnees and the miss-match of the experience of the returned migrants with their current job. It was concluded that to make the returned migrants successful in their reintegration process, the commitment of the returned migrants and the similarity of the work experience when they were in the KSA with the present work plays a great role than any other factors. Therefore, the responsible bodies should work on strengthening their commitment and matching their reintegration process with their previous experience that they have plays an invaluable role.

Keywords*:* reintegration, challenges, human trafficking

Policy Frameworks for Poverty Reduction and Social Well-being: A Meta-analytic study of Global Best Practices and Lessons for Evidence-based Policy Innovation in Ethiopia's Knowledge Economy

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ABSTRACT

The quest for poverty reduction and enhanced social well-being has driven global policy reforms, particularly in countries transitioning to knowledge-based economies. This meta-analytic study investigates the effectiveness of policy frameworks aimed at reducing poverty and promoting social well-being by synthesizing evidence from 30 studies conducted between 2010 and 2024 across 10 countries. The selected studies assess the impact of three key independent variables—social protection policies, education investment policies, **and** healthcare accessibility initiatives—on the dependent variable**,** poverty reduction and social well-being outcomes. Comprehensive searches in SCOPUS, PubMed, JSTOR, and Google Scholar identified relevant studies, from which effect sizes (ES) were calculated using Hedges' g to ensure precision across varied sample sizes. The pooled effect size (g = 0.62, 95% CI [0.48, 0.76]) indicates a moderate but statistically significant impact of these policy frameworks on improving social well-being. Among the independent variables, education investment policies demonstrated the strongest effect (g = 0.75), followed by social protection policies (g = 0.59) and healthcare accessibility initiatives (g = 0.52). The heterogeneity analysis (I^2 = 68.5%) suggests moderate variability, reflecting contextual differences in policy implementation and socioeconomic conditions across countries. The findings highlight the importance of integrating multi-sectoral approaches to policy design for sustained poverty reduction. Lessons drawn from global best practices underscore the need for Ethiopia's policymakers to invest in targeted education and social protection programs while ensuring equitable healthcare access. Addressing implementation gaps and enhancing collaborative governance frameworks will be critical for maximizing social well-being outcomes.

Keywords: Policy frameworks, poverty reduction, social well-being, knowledge economy, meta-analysis

Severity of Household Food Insecurity and Coping Strategies in Hadiya Zone, Central Ethiopia Regional State, Ethiopia

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ABSTRACT

Food insecurity is the main challenges of today's world. In order to combat threats of land degradation combined with erratic rainfall, drought, weak extension services, low productivity of the labor, weak infrastructural and poverty problems carriage a serious threat to households' food security in Ethiopia. The objective of this study is to assess food security identify determinants of food insecurity status and severity on food insecurity, and analyze local coping strategies in the study area. Three-stage sampling technique was used to select sampled household in Duna Woreda Hadiya Zone. In this study, a total of 198 households were selected by using systematic random sampling with proportional to population size from five sample kebeles. Both primary and secondary data were collected for this study. Both descriptive and econometric models were used to analyze the collected data. Household calorie acquisition was employed to categorize households into food secure and food insecurely status. For the econometric analysis binary logit model and ordered probit model were used to identify determinates of household food insecurity status and severity in the study area. The survey results show that 63.64% and 36.36 %households were food insecure and food secure and severity food insecurity 34.34%, 10.6%, 18.69% and 36.36% food secure, mild, moderately and severely food insecure respectively. Thus, based on the results of logit model, age and education level of households, remitance ,cultivalted land membership in cooperative, credit amount, size of cultivated land and receiving remittance negatively and significantly affect households' food insecurity. Sex of households 'positive effect and significant relationship with households' food insecurity. Age education draught resistant seed PSNP, access to climatic information, cultivated land size and off-farm and non-farm positively affect food security, on the other hand negatively affect moderately food insecure and severely food security. Distance to market and family size negatively affect moderately food insecure and severely food security. The common coping strategies choosing on seasonal migration, receiving support from productive saftent program participation, sale of asset, borrow food from relatives. It was recommended that the government should enhance productivity per unit from a given land by using improved agricultural technologies like drought resistance seed in, government should provide productive saftent program participation, capacity building on age, educational level and sex of household head, providing climatic information for farmers, providing drought-tolerant seed on time and with low input cost and enhance in off and non-farm income generating jobs.

Keywords: Binary logit model, Coping Strategies, Determinant, Duna, Food insecurity, ordered probit model

The Role of Women in Peace Building and Conflict Resolution: Cases from Gurage Community

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ABSTRACT

The aim of this study was to investigate the role of women in peace building and conflict resolution in Gurage zone, Central-Ethiopia. This research primarily aims to explore how women contribute to conflict resolution and peace building, the difficulties they encounter, and how stakeholders can support them in preventing challenges they face. Qualitative research method was employed to collect data from two purposively selected districts of Gurage Zone. Purposive sampling technique was employed to gather information through in-depth interview, key informant interview and Focus group discussions. The data collected through different sources was analyzed by using thematic analysis. The study found that Gurage society's traditional assembly for managing conflicts (Yejoka) has no space for women, who are peace educators in the family and who make up half of the population. Although women of Gurage community have been neglected in the Yejoka customary peace process, they have had a large role to play indirectly via various women's groups. Women in the study areas played a significant role in conflict resolution and peace building at the time of antroshet, which is mother's day festival of Gurage community. Patriarchal norms, culture and religion, illiteracy and poverty, lack of funding and capacity among women are some of the challenges that hinder women from participating in peace building processes. Maximizing the roles of women in peace building and tackling various challenges they face requires political will, capacity building and funding to empower women and harness their unique perspectives in all the pillars of peace-building efforts.

Keywords: women, peace building, conflict resolution, exclusion

Agriculture and Rural Development in Ethiopia: Challenges, Opportunities, and Sustainable Pathways for Prosperity

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ABSTRACT:
Agriculture remains the backbone of Ethiopia's economy, sustaining livelihoods for the majority of its population and contributing significantly to national GDP. This research abstract presents a comprehensive analysis of the dynamics, challenges, and opportunities in agriculture and rural development in Ethiopia, highlighting pathways towards sustainable growth, poverty alleviation, and inclusive rural transformation. Drawing upon a systematic review of literature, policy documents, and empirical studies, this research synthesizes current knowledge on the state of agriculture and rural development in Ethiopia. Key themes explored include agricultural productivity trends, land tenure systems, rural livelihood strategies, natural resource management practices, and the role of agricultural policies and interventions in shaping rural landscapes. The abstract underscores the multifaceted challenges confronting Ethiopian agriculture and rural communities, including land degradation, climate variability, limited access to markets and finance, inadequate infrastructure, and socio-economic inequalities. These challenges are exacerbated by population pressure, land tenure insecurity, and the prevalence of subsistence farming practices, which hinder the adoption of modern agricultural technologies and practices. In light of these challenges, the abstract identifies opportunities for enhancing agricultural productivity, promoting rural livelihood diversification, and fostering inclusive rural development in Ethiopia. Key opportunities include investments in agricultural research and extension services, adoption of climate-smart agricultural practices, promotion of value chain development, strengthening of rural institutions, and empowerment of women and youth in agriculture. Furthermore, the abstract emphasizes the importance of holistic and integrated approaches to rural development that prioritize sustainability, resilience, and social inclusion. This includes the adoption of participatory and community-driven development strategies, promotion of agroecological farming systems, expansion of rural infrastructure and social services, and strengthening of local governance structures. Aligned with Ethiopia's national development priorities, such as the Agricultural Transformation Agenda (ATA) and the Growth and Transformation Plan (GTP), this research advocates for policy reforms and investments that prioritize smallholder farmers, pastoralists, and marginalized rural communities. By addressing structural constraints, promoting innovation, and fostering partnerships between government, civil society, and the private sector, Ethiopia can achieve inclusive and sustainable rural development, thereby improving food security, reducing poverty, and fostering resilient rural economies.

Keywords: Agriculture, Rural development, Ethiopia, Sustainable development, Poverty alleviation, Inclusive growth.

Antibacterial Activity of *Echinops Kebericho* against *Staphylococcus aureus, Escherichia coli* and *Salmonella:* Environmental Sustainability and Social-Wellbeing Nexus

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ABSTRACT

Traditional medicines remain the primary source of health care in developing countries and are sources of therapeutics for 70% of human and 90% of livestock. *Echinops kebericho* is endemic plant to Ethiopia and is used to treat several diseases. Antimicrobial resistance among bacteria to conventional antimicrobials becomes a serious challenge and is a threat to us all. However, the antibacterial activity of *E. kebericho* against *S. aureus, E. coli* and *Salmonella* in Wolaita Sodo town was not yet known. The study was carried out to evaluate the antibacterial activities of aqueous and ethanol based crude extracts of *E. kebericho* against *S. aureus*, *E. coli* and *Salmonella.* The 70% ethanol and aqueous extracts of *E .kebericho* was prepared by maceration. In vitro susceptibility test was done using filter paper disc diffusion method. The extract was prepared at concentration of 25, 50, and 100 mg/ml. The least susceptibility was observed for the aqueous extract with the inhibition zone of (7.67±0.57 mm) at 25mg/ml concentration against *E .coli*. Salmonella was highly susceptible (16.00±1.00 mm) to aqueous extract at concentration of 100 mg/ml. The 70% ethanol extracts of *E. kebericho* showed smaller zone of (8.00±0.57 mm) against *Salmonella* at 25 mg/ml while, the larger inhibitory zone was observed against *S. aureus* (15.00±1.00 mm) and *E. coli* (13.33± 0.57 mm) at concentration of 100 mg/ml. The inhibitory activity against the tested bacteria suggests *E. kebericho* root extracts could help alleviate AMR challenges we face and threatens us all currently. Hence, an *in vivo* study using laboratory animals should be conducted to test the safety, efficacy, dosage and toxicity of the extract so as to validate its antibacterial activity and strong awareness has to be created among the population to conserve medicinal plants for sustainable use.

Keywords: Antibacterial, *Echinops kebericho, Escherichia coli, Salmonella, Staphylococcus aureus*

Assessing the Carbon sequestration potential of church forest and their implication for climate change mitigation in Jabitehinan District

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ABSTRACT

The purpose of this study was to examine the carbon stock potential of church forests and their contribution to climate change mitigation. A stratified systematic sampling approach was utilized, and data were gathered from 60 sample plots using sampling quadrats of 15×15 m for large trees, 10×10 m for shrubs, and 5×5 m for grassland areas. The diameter at breast height of trees was measured at 1.3 cm. The findings of this study revealed that in the semi-arid agroecological zone, church forests had a total mean aboveground, belowground, and total carbon stock of 76.6 t/ha (280.3 CO_2), 19.2 t/ha (70.4 CO_2), and 95.8 t/ha (350.8 CO_2), respectively. In the sub-humid agroecological zone, church forests had a total mean aboveground, belowground, and total carbon density of 12.4 t/ha (45.14 CO_2), 3.1 t/ha (11.37 CO_2), and 15.5 t/ha (56.51 CO_2). In the temperate highland agroecological zone, church forests had a total mean aboveground, belowground, and total carbon stock of 11.2 t/ha (40.73 CO_2), 2.8 t/ha (10.27 CO_2), and 14.02 t/ha (51.01 CO_2). The mean aboveground, belowground, and total carbon stock for the three agroecological zones were 33.4 t/ha, 8.3 t/ha, and 41.8 t/ha, respectively. A one-way analysis of variance (ANOVA; $F=3.54$, $DF=2$, $p<0.033$) indicated a significant difference in carbon stock between agroecological zones.

Keywords: climate change, carbon sequestration, agro-ecological zone, church forest

Assessing the Impacts of Land Use/Land Cover Changes on Water Resources of the Nile River Basin, Ethiopia

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ABSTRACT

Land use/land cover change and climate change have diverse impacts on the water resources of river basins. This study investigated the trends of climate change and land use/land cover change in the Nile River Basin. The climate trends were analyzed using the Mann–Kendall test, Sen's slope estimator test and an innovative trend analysis method. Land use/land cover (LULC) change was examined using Landsat Thematic Mapper (TM) and Landsat Enhanced Thematic Mapper (ETM+) with a resolution of 30 m during 2012–2022. The findings revealed that forestland and shrub land area decreased by 5.18 and 2.39%, respectively. On the other hand, area of grassland, cropland, settlements and water bodies increased by 1.56, 6.18, 0.05 and 0.11%, respectively. A significant increasing trend in precipitation was observed at the Gondar (Z = 1.69) and Motta (Z = 0.93) stations. However, the trend was decreasing at the Adet (Z = 0.32), Dangla (Z= 0.37)and Bahir Dar stations. The trend in temperature increased at all stations. The significant changes in land use/land cover may becaused by human-induced activities in the basin.

Keywords: climate trend; land use land cover; Nile River Basin; water resources

Coffee Production Efficiency and Marketing System Analysis: the case of Gedeo Zone, Southern Ethiopia

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ABSTRACT

The principal objective of this study was to examine the coffee production efficiency and its marketing in the study area. The estimated coffee production function exhibited increasing return to scale, revealing scope to upsurge production. Further it is responsive to organic fertilizer, farm size and irrigation. However, the cost function is responsive to cost of farmland and coffee production. The efficiency score analysis revealed the existence of significant economic inefficiency in coffee production in the area with an average score 0.43. The households scoring less than 0.5 exceed 60 per cent. Furthermore, the average TE and AE scores are 0.68 and 0.71, respectively, meaning the farm households could increase their production up to 32% saving 29% of their cost subjected to efficient input allocation. Accordingly, institutional capacity building works are needed to improve efficiency in strengthening the coffee producers' cooperatives, extension service quality and coverage, credit service, farmland and practical training delivery. On the other hand, the marketing system analysis identified two principal channels in terms of sales volume with 39.9 per cent and 35.6 per cent total margin added to the coffee price, respectively. Similarly 59.4 per cent of coffee transactions were dominated by the top four large traders. Finally, household education, participation in the non/off-farm activities, price and quantity produced were essential factors determining households' market supply. Therefore, creating alternative markets, improving the coffee certification process, strengthening farmers' cooperatives, and continuous coffee diseases management works are recommended in line with the efforts to enhance the coffee value chain and coffee quality, focusing on the aforementioned variables.

Keywords: Efficiency, Value-chain, SFA, OLS, Tobit, Cobb-Douglas, Coffee.

Environmental Stewardship in Gurage: Searching for Socio-ecological Wellbeing, Sustainability, and Challenges

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ABSTRACT

The people of Gurage have a strong affiliation for nature that re-backs with socio-ecological well-being and sustainability. *Ensete culture* is their overall manifestation of living, technology, and identity; their environmental stewardship is strong and historical to balance nature-culture interactions and predominant livelihoods. This paper aims to explore the nature and manifestations of the Gurage environmental values, stewardship, and their implications for the socio-ecological well-being and sustainability of human-environment interactions. The report is based on firsthand data from fieldwork and document review, mainly focusing on West Gurageland. Ethnographic approaches of data collection, such as in-depth interviews, key informant interviews, focus group discussions, observations, and transaction walks, were used to generate data from the research settings. Document reviews are also done as supplementary sources, focusing on research on Gurage socio-ecological settings. Historical and spiritual ecology approaches were used to understand historic and contemporary stances of environmental stewardship from past to present among the Gurage across generations. Nature and culture have no dual identity among the Gurage; rather, one manifests itself within the other. The Gurage view themselves as part of nature, responsible for wise use and management of public resources, sometimes with spiritual restrictions, focusing on cultural and sacred forests. *YeJoka Kicha*, a law governing nature and culture interaction, promotes environmental stewardship through *Gurda* oaths and diverse segments of law, ensuring socio-ecological well-being and sustainability. However, detachments are growing from the historical and spiritual significance of environmental resources with the decline of environmental stewardship that affects societal and ecological benefits.

Keywords: challenge, environmental stewardship, Gurage, socio-ecological wellbeing, sustainability,

Exploring adaptation strategies of coffee-based farming systems and determinant factors to climate change and variability: Insights from smallholder farmers in Western Ethiopia

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ABSTRACT

Coffee farming supports the livelihoods of over 15 million people in Ethiopia. However, around 90% of coffee producers in the country are smallholders making them particularly vulnerable to global changes. Therefore, adapting to the effects of climate change is crucial for coffee growing farmers to sustain their livelihoods. This paper explores the adaptation strategies of coffee-based farmers and the factors that determine their response to climate change and variability in West Wallaga Zone, Western Ethiopia. The study used a cross-sectional survey design to collect data from 642 household head farmers across five districts. Rainfall and temperature data were also used. Mann-Kendall and Sen's slope tests, and multinomial logistic regression (MLN) were employed for data analysis. The findings reveal that rainfall and temperature have increased over the past four decades. Farmers have recognized several risks associated with climate change including a decline in expected rainfall, a shorter rainy season, increased temperatures, a rise in pests and diseases, and reduced coffee yields. About 94% of coffee-farming households use various adaptation strategies, mainly agroforestry (51.78%), followed by crop diversification (15.73%), improved coffee varieties (11.06%), soil-water conservation (10.44%), and pest management (6.85%). The multinomial logistic model showed that age, family size, education level, farmland size, and access to credit significantly influenced farmers' adaptation choice. The implications of these results are highly relevant for a range of stakeholders, including policymakers who are responsible for creating supportive environments that facilitate adaptation to agricultural challenges.

Keywords: Climate change impact, coffee, small-scale coffee farmers, adaptation strategies

Factors contributing to youth illegal Migration and its implication to Sustainable Development in Ethiopia

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ABSTRACT

Youth illegal migration has become a pressing issue in Ethiopia, driven by a complex interplay of socio-economic, political, and environmental factors. This research investigates the underlying causes of this phenomenon and explores its implications for sustainable development in the country. Systematic review and qualitative approach was utiluzed to gather comprehensive data from a diverse research work and medias report. Preliminary findings indicate that high unemployment rates, political instability, and environmental degradation significantly influence youth decisions to migrate illegally. Additionally, the study reveals that illegal migration poses serious challenges to sustainable development, including brain drain, loss of human capital, and increased vulnerability of migrant populations. The research underscores the urgent need for targeted policy interventions to address the root causes of illegal migration and promote sustainable development initiatives. By providing actionable recommendations for policymakers and stakeholders, this study aims to contribute to a more nuanced understanding of youth migration in Ethiopia and to foster strategies that enhance the prospects of youth while supporting national development goals. The findings are expected to inform on-going debates and initiatives aimed at creating a sustainable future for Ethiopian youth.

Keyword: illegal Migration, sustainable development, youth

Green Taxation as a tool for Environmental protection: An appraisal of its legality and feasibility under the Ethiopian legal frameworks

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ABSTRACT

The pressure on global communities to find ways to lessen environmental damage while minimizing harm to economic growth is being increased by environmental challenges to an unprecedented degree. With the ultimate goal of significantly reducing pollution, green taxes are a novel idea to impose or introduce taxes on substances that will pollute the environment. Green taxes are defined as taxes imposed to preserve the environment by controlling the negative effects of certain activities and products on the environment. Getting to the Ethiopian situation, Environmental protection is at a crossroads. Even Ethiopia's lax environmental regulations or race to the bottom under bilateral investment agreements have made matters worse. As a result, the goal of this study is to determine whether green taxes are feasible and legal under Ethiopian law. In doing so, the research has employed doctrinal legal research Methodology. The study's findings demonstrate that while the FDRE Constitution, Environmental Policy, and other subsidiary laws on the environment have established various mechanisms, obligations, and duties of stakeholders with regard to environmental protection, green taxes, a newly developed tool for environmental protection, are not mentioned at all under the Ethiopian tax system. The study also shows that green taxes are practical because they are ultimately intended to ensure environmental protection, which is supported by both the legal system and the environmental policy currently in place. As a result, if Ethiopia wants to achieve sustainable development, it should implement green taxation schemes.

Keywords: Green tax, Environment, polluter pays principle

Impact of Conditional Cash Transfer Program on Household Welfare in Southern Ethiopia: A Matching Estimator Approach

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ABSTRACT

Cash transfers (CTs) are now high on the agenda of most governments in low- and middle-income countries. Chronic food insecurity is one of the problems that has plagued millions of Ethiopians for centuries. To address this problem, the Ethiopian government launched a social protection program called the Productive Safety Net Program (PSNP) in 2005 in collaboration with development partners. This study examined the impact of participation in the Conditional Cash Transfer (CCT) component of the PSNP (Public Works or PW) on household *livestock* holding and total income in Karat Zuria District, Konso Zone, Southern Ethiopia. The cross-sectional survey data were collected in 2022 from 244 sample households drawn from beneficiary and control groups using a multistage sampling method. Propensity score matching (PSM) was used to evaluate the impact of the program on livestock and total income. The result obtained from the logit regression showed that participation in a conditional cash transfer program was negatively influenced by access to credit and the size of cultivated land, while it was positively influenced by shock experiences and a house with an iron roof. The result of the econometric model shows that the program intervention increased the livestock holding (measured in TLU) of beneficiary households by 24.8 percent (0.53 TLU) and total income by 33 percent (1705.095 ETB) compared to control households. This study showed that the program had a significant impact on household livestock holdings and total income. Therefore, re-thinking or re-evaluating the program objectives at national, regional, and other operational levels is inevitable to actualize the desired objectives.

Keywords*:* Conditional Cash Transfer Program*;* Household; Food Security; Propensity Score Matching, logit regression, Karat Zuria District.

Impact of crops land uses on rate of soil erosion and its relation to rainfall characteristics in the Abay Basin, Ethiopia

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ABSTRACT

Cultivated land is the primary source of runoff and sediment loss in a watershed. Quantifying the soil erosion response of dominant cereal crops at different slope gradients is vital to sustainable land use, crop management, and conservation options. This study evaluated the runoff loss (Ro), runoff coefficient (RoC), and soil loss (SL) responses of teff (Eragrostis tef), maize (Zea mays), and wheat (Triticum aestivum) cropland use under different slope conditions. During 2020 and 2021, 18 experimental erosion plots (3m x 10m) having 3 crops x 3 slope gradients (8, 18, and 32%) with two replicates were installed. Soil loss and runoff analysis were made and the significance variation among land uses and slopes was tested using ANOVA. On average, the highest Ro is recorded from teff (700mm) followed by wheat (651.2mm), and maize (570mm). The Ro generated from the teff crop exceeds 18.5 and 6.9% compared to maize and wheat crops ($P < 0.05$). The lower proportion of the rainfall was converted to runoff (RoC=38%) under the maize crop, however, nearly half of the rainfall (RoC=46.6%) became runoff in the teff crop. The average (three slope gradients) rate of SL in teff, wheat, and maize crops was found to be 54.86, 45.61, and 38.27 t ha-1 year-1, respectively. This study result revealed that the correlation of rainfall with runoff is found very strong ($r2 = 0.86$, $p<0.001$) but moderate with soil loss ($r2=0.41$; $p<0.05$). Besides, rainfall duration and runoff showed moderate positive relationship ($r = .69$), but negative relationship with soil loss. This implies that high rainfall amount (mm) and duration (minutes) in cultivated land resulted severe soil erosion. Although the result shows high soil erosion in all cereal crops, cultivation of the teff crop in general and on steep slopes in particular leads to a high Ro and SL. Therefore, sustainable land management practice and setting rural land use policy is recommended.

Keywords*:* Cropland uses, runoff, soil loss, rainfall duration, rainfall depth

Impact of Land Use/Land Cover Changes on Ecosystem Service Values: A Case Study of the Suluh River Basin, Northern Ethiopia

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ABSTRACT

The total value of ecosystem services in the Suluh River Basin is greatly impacted by land use/land cover change. Alterations in near-natural habitats lead to substantial changes in specific ecosystem services. This study first examines land cover and use changes over the last three decades using GIS and RS technology. Land use/land cover values were assessed alongside global datasets created for biomes to evaluate total and specific changes in ecosystem service values (ESV) for the designated study area and timeframe. A sensitivity analysis was conducted to test the reliability of our estimations using proxies. The findings show that plantation areas increased by 43.7%, built-up lands expanded by 135.5%, cultivated land rose by 7.98%, and barren land grew by 9.8%. Conversely, several land categories experienced notable declines: grazing land decreased by 48.6%, shrub-bushland fell by 61.7%, water bodies declined by 79.6%, and forest land was drastically reduced by 576.7%. As a result of these land use changes in the watershed, ecosystem service values decreased by $21.7 million per hectare per year between 1990 and 2018. In terms of specific ecosystem services, regulating services were significantly affected, with climate regulation (2.36%) and water regulation (1.34%) showing the highest declines, while food production (2.27%) and soil formation (0.57%) experienced increases. Overall, both the river basin and individual ESV have declined during this period, highlighting the urgent need for improved land management techniques to enhance the sustainability of ecosystem service delivery in the area.

Keywords: Change analysis, ecosystem service valuation, sustainability, Impact

Implementation of Environmental Regulations to Promote Sustainable Development in Ethiopia

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ABSTRACT

Effective enforcement of environmental regulations is key to achieving sustainable development. It ensures that companies comply with environmental laws to help protect natural resources and minimize the negative impact of human activities on the environment. Counting examples of enforcement mechanisms that must include monitoring, inspections, and sanctions for violators be implemented because enforcement creates a culture of environmental stewardship, incentivizes innovation in pollution control technologies, and ensures fair access to ecological resources. It also contributes to solutions to environmental injustices and safeguards vulnerable communities. Environmental justice is crucial today, especially in Ethiopia, where ecological degradation hinders sustainable development. This paper explores the enforcement of environmental regulations within Ethiopia's legal framework as a path to sustainable development and environmental justice. It assesses whether current laws support sustainable development practices and identifies obstacles like procedural complexities, resource constraints, and institutional shortcomings that hinder the enforcement of environmental regulations. Using a doctrinal methodology, the study analyzes legal texts and scholarly literature to address its research questions. Findings reveal the need for comprehensive reforms to enhance enforcement mechanisms, bridge legal gaps, and improve access to justice for affected individuals and communities. The study recommends legislative amendments, capacity-building initiatives, and the establishment of specialized environmental courts or tribunals. Strengthening legal frameworks, raising public awareness, and enhancing enforcement mechanisms are essential for Ethiopia to protect its environment and ensure a healthy, sustainable future for its people.

Keywords: Environmental regulation, enforcement, challenges, sustainable development, Ethiopia

Improving the Agronomic and Economic Performances of Cassava (*Manihot esculenta* crantz) Production through varieties and planting positions in Gena Bosa district of Dawuro Zone, South-western Ethiopia

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ABSTRACT

Limited varieties along with planting position are among the major factors that limit cassava production in Ethiopia. Therefore, afield experiment was conducted in the Mela and Bodi sub-districts of Gena Bosa district in Dawro Zone during 2017 cropping seasons, to determine the response of cassava varieties to different planting position. The treatments consisted of four varieties (Local, Variety, Kello and Awassa-04 varieties) and three planting positions (inclined at an angle of about 45°, 90° and 180°). The experiment was laid out as a randomized complete block design (RCBD) and replicated three times per treatment. Data were collected on phenology, growth, yield components and yield. The data were subjected to analysis of variance. The results indicated that interaction effect of variety and planting position were significantly affected all parameters. Kello variety planted slant planting position both at Mela and Bodi sub-district significantly improved phenology, growth, root morphology, yield components, and root yield of cassava. The average root yield of cassava obtained in Kello variety planted slant planting position at Mela sub-district Kello variety planted slant planting position at Mela and Bodi sub-districts exceeded the average root yield obtained from local cassava planted horizontally at Mela and Bodi sub-districts. The highest mean net benefit (210,544 ETB ha^{-1}) with an acceptable marginal rate of return of 12,493% was obtained from Kello variety planted slant planting position. Thus, planting Kello variety in slant planting position is suggested for maximize the agronomic and economic returns of cassava farmers in the study area.

Keywords: Economic analysis; Growth; Root morphology, Yield components Root yield

Modelling the Impacts of Climate Change on Flood Hazard in the Rift Valley Basin of Ethiopia

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ABSTRACT
The increase of climate change-induced events, such as flooding, has intensified, particularly impacting developing countries over the last few decades. It is essential to develop flood hazard maps to identify and protect vulnerable regions. This will also help establish early warnings system execute both structural and non-structural measures effectively. The study area is the Rift Valley basin of Ethiopia, which has experienced 11 out of 15 recorded flood events in the past. The aim is to forecast the impacts of climate change on flooding, considering both present and future climate scenarios. Through the participatory approach by engaging stakeholders, this study evaluates the reliability of conventional flood risk assessment approaches. Primary and secondary datasets were acquired through field visits and from both non-governmental and governmental organizations. To achieve the objectives of the study, eight flood risk indicators namely, rainfall, distance from the river, land elevation, slope, topographic roughness index, topographic wetness index, land use/land cover, and soil type were chosen. Two climate scenarios namely SSP245 and SSP585 were used to project the near and far future rainfall based on CMIP6. The study makes use of three standout climate models namely, NoRESM2, CNRM-ESM2-1, and CanESM5. The AHP model and PGIS were used for relative importance analysis, including affected communities from Bilate, Kulfo Gina, Sile-sego, and Lake Hawassa sub-basins. The finding revealed that in 2060, both SSP245 and SSP585 scenarios show an increasing trend in high and very high flood-risk areas, with SSP585 indicating a more considerable rise. By 2100, the spatial distribution of very high and high class concentrates in the northern and central parts, emphasizing greater risk under SSP585. Comparison with the baseline period reveals a spatiotemporal change, suggesting climate change's potential contribution to increased flood likelihood and extent in the Rift Valley basin.
Keywords; Analytic Hierarchical Process, Climate modelling, CMIP6, Flood risk, Near and far future, Participatory geographical information system, SSP

Sustainable Urban Mobility: Evaluating the Role of Cable Car Systems in Ethiopia's Transportation Infrastructure

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ABSTRACT

Urban cable car systems have developed as effective and eco-friendly transportation options. This study examines the possible function of cable car systems within Ethiopia's transportation network, with a focus on locating suitable locations for economically viable implementation. A mixed-methods approach was employed, combining quantitative data collected via structured surveys with qualitative insights gathered through semi-structured interviews. The research focused on a specific group of 22,050 travelers, with projected daily peak-hour traffic of 11,250 passengers between 7:00 and 9:00 AM, and 10,800 passengers between 4:00 and 6:00 PM. Data from 393 participants were examined utilizing descriptive statistics and thematic analysis methods. Research suggests that Addis Ababa, especially the Megenagna district with links to four crucial routes, possesses considerable potential because of its extremely high population density. Studies of passenger flow have shown that 85% of travelers head to residential areas such as Gerji, Goro, Yerer, Summit, and Kotebe, 81% to Piassa, Arat Kilo, Merkato, 73% to Bole, and 70% to Lebu, Jemo, and Kaliti, with ongoing difficulties in taxi wait times at Megenagna. The research also highlights tourist areas like Lalibella, Bale Mountains, Simien Mountains, and Danakil Depression as potential sites where cable cars could improve access, increase tourism, generate employment opportunities, and revitalize local economies. In summary, integrating cable car systems could have a substantial impact on enhancing the efficiency of Ethiopia's transportation infrastructure, providing both economic and environmental advantages.

Key words: Sustainable Urban Mobility, Cable Car Systems, Transportation Infrastructure.

The Impacts of climate and non-climate factors on cereal crop yield in the East of Africa (A Generalized method of moments (GMM) panel data Analysis)

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ABSTRACT

Crop yields and productivity are low in East Africa due to the climatic and non-climate factors that affect cereal crop yields. In contrast to the East Africa countries, which only produce 2 t/ha on average, industrialized nations produce an average yield of 10.77 t/ha. The large productivity gap in East Africa is the main topic of this proposed study. East Africa's cereal yield productivity has failed of its genetic potential. There has not been much previous study on how climate and non-climate factors affect the yield of cereal crops in East Africa using panel data. Further, this study seeks to fill a gap in existing research by employing a generalized method of moments (GMM) panel model. This study examines the impacts of climatic and non-climatic factors on cereal yield in East Africa, analyzing data from seven nations (Burundi, Somalia, Ethiopia, Kenya, Eritrea, Tanzania, and Uganda) from 1993 to 2018. The World Bank Development Indicators provided the data for cereal yield, seed, fertilizer, and carbon dioxide emissions, while Climate Change Knowledge Portal provided the data for mean annual temperature and mean annual precipitation. The results of the investigation suggest that there is expected to be a continuous decline in cereal yield in East Africa due to the effects of both climatic and non-climate factors. Key findings indicate that the amount of fertilizer consumed and the amount of seed applied have positive effects. The yield of cereals increases by 0.833 kg/ha for every 1 percent increase in precipitation. Moreover, the yield of cereals is decreased by 4.354 kg/ha for every 1 percent increase in temperature. Utilizing high-temperature and drought-resistant cereal crop varieties is also advised to lessen the adverse impacts of climate change and non-climate factors. Adaptive strategies are needed in policy to alleviate the effects of climate and non-climate factors. This study has significant policy implications for the need to assist farmers in implementing new agricultural technologies, breeding stress-tolerant plants, and altering their production and farm management practices.

Keywords: Climate change, dynamic model, cereal yield, East Africa

Harnessing Artificial Intelligence for Transformative Skill Development and Personalized Education: A Meta-Synthesis Approach

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ABSTRACT

The integration of Artificial Intelligence (AI) in education is transforming skill development and personalized learning, especially within higher education workforce development. This study employs a meta-synthesis approach to systematically analyze existing research and examine the impact of AI-driven interventions in these fields. Following PRISMA guidelines, over 1,160 studies were screened, with 21 meeting the inclusion criteria. These studies were analyzed for their relevance to AI's role in enhancing skill acquisition, personalizing education, and fostering workforce readiness. The synthesis reveals that AI technologies—such as adaptive learning systems, intelligent tutoring platforms, and predictive analytics—significantly improve personalized learning experiences, increase workforce engagement, and align skill development with evolving labor market demands. In higher education, AI offers customized academic support, while in workforce development, it supports continuous upskilling and reskilling, addressing skill gaps and promoting equity through lifelong learning initiatives. Despite these advantages, several frustrations and challenges persist in AI adoption. Over-reliance on AI can undermine human agency, as algorithms often replace complex, human-driven decision-making in education and skill development. This dependence risks stifling critical thinking, creativity, and personal interaction, which are vital for well-rounded development. Furthermore, technical issues such as algorithmic bias, data privacy concerns, and inadequate digital infrastructure continue to limit AI's potential. These challenges highlight the importance of integrating AI thoughtfully, ensuring it complements rather than replaces human input in shaping education and workforce development. Ethical considerations related to fairness and inclusivity also require attention to prevent the reinforcement of societal inequalities. Ultimately, this study provides a deliberate framework for leveraging AI to foster adaptive learning ecosystems while mitigating the risks of overdependence, contributing to a more inclusive and sustainable knowledge economy and workforce development.

Keywords: Artificial Intelligence, workforce development, skill acquisition, adaptive learning, upskilling, lifelong learning.