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Gross Domestic Product and Economic Growth in Burundi (2005-2024): A Systematic Review of Determinants and Gaps

Joseph Ngendabanka[1*], Emmanuel Kwizera[2], David Byamungu Banguwabo[1,3]

[1]Ecole Doctorale, Université du Burundi, Bujumbura, Burundi
[2]Institut Supérieur de Commerce, Université du Burundi, Bujumbura, Burundi
[3]Faculté des Sciences de Gestion et Statistiques, Université du Cinquantenaire de Lwiro, Bukavu, République Démocratique du Congo
Email: *josephwalioba6621@gmail.com

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Abstract

Economic growth is among the most crucial and long-term challenges for Burundi, which remains encumbered by macroeconomic volatility, institutional fragility, and low structural transformation. This paper systematically reviews empirical evidence on the macroeconomic, political and structural determinants of the level of real GDP and its annual growth rate in Burundi following the PRISMA 2020 methodology. Web of Science, Springer Link, Wiley Online Library, Taylor & Francis Online and Google Scholar were searched for records published from January 2005 to December 2024 using terms related to Burundi. 113 records were retrieved, of which 94 remained after duplication and title/abstract screening, while 75 remained after full-text screening. 16 empirical studies were included in this review: Eight Burundi-specific studies form the main evidence base, while a further eight regional studies, in which Burundi appears in the sample, serve as contextual comparative evidence in light of the lack of Burundi-specific estimates. Empirical evidence consistently reports inflation, political instability and conflict as negative correlates of GDP growth, as well as foreign direct investment and trade openness as supporting growth, with the latter doing so mainly in contexts of institutional stability. Major gaps pertain to the informal economy, environment and climate change, digitalization and financial inclusion at the national level, as well as the dearth of non-linear and high-frequency post-2015 and post-COVID-19 period studies.

Keywords

GDP, Economic Growth, Political Stability, FDI, Inflation, Systematic Review

1. Introduction

Economic growth is a prerequisite for development in developing countries because it provides the foundation for social peace, employment creation and poverty reduction. Specifically, in SSA, sustainable GDP growth is a necessity if the United Nations' Sustainable Development Goals are to be achieved (Abdi et al., 2025; Arthur et al., 2024). In addition, while a number of states on the continent have made great strides, Burundi is the archetype of states facing continuous institutional weakness, repeated macroeconomic shocks and a structural impediment to long-run growth.

Burundi is a landlocked small East African state which possesses perhaps the hardest environment for economic activity (Jospin et al., 2024; Matabaro & Ildephonse, 2024; Mperejimana & Sindayigaya, 2023; Ndayisenga & Sindayigaya, 2024b; Nduwimana & Sindayigaya, 2023b; Nyabenda & Sindayigaya, 2023; Nyabenda & Sindayigaya, 2024). It is commonly labelled a "hyper-fragile state" that denotes institutional breakdown, a lack of political stability and a lack of societal coherence that engenders a reinforcing cycle of underdevelopment and strife (Ndoricimpa & Ndayikeza, 2023). In this context, the collapse of the rule of law and the low state capacity led to a breakdown of markets and administrative reach necessary for investment inflows (Gulcemal, 2021). These structural problems, coupled with insufficient economic diversification, make sustained GDP growth in the country historically difficult (Carmel, 2023; Gómez & Irewole, 2023).

While several government and international reforms have been introduced, empirical evidence on factors determining Burundi's economy (Inflation, unemployment, FDI) is sparse and disparate (Jonya et al., 2023; Nduwimana & Sindayigaya, 2023a; Sindayigaya, 2020; Sindayigaya, 2022; Sindayigaya, 2023; Sindayigaya & Toyi, 2023; Toyi & Sindayigaya, 2023). The macroeconomic instability and disruption that conflict had on national performance have been proven to depress this greatly (Ndoricimpa & Ndayikeza, 2023). However, the effect on GDP of recent structural reforms is unknown in tangible terms (Hamouda, 2023; Chebli & Saidi, 2024). Additionally, the current body of research suffers from a temporal lag, in the sense that the onset of the post-pandemic world is hardly researched yet (Manirakiza et al., 2026; Ndayisenga et al., 2025; Ndayisenga et al., 2026; Nduwimana & Sindayigaya, 2025; Sindayigaya, 2025). While the criteria for this study were confirmed in 2019 to require a total absence of peer-reviewed empirical work, this review was nonetheless able to include the research conducted by Atta-Aidoo et al. (2024), thereby drawing upon the most up-to-date empirical research available as of 2024.

To establish analytical clarity, this review formulates a single overarching review question: "What macroeconomic, political and structural drivers are empirically reported as determinants of Burundi's real GDP level and annual real GDP growth rate, and how do these growth determinants differ from broader socio-economic development outcomes (e.g., food security, financial inclusion and poverty reduction)?" In answering this question, the review distinguishes three

constructs: i) the real GDP level; ii) the annual real GDP growth rate; and iii) broader socio-economic development outcomes, which are treated as context rather than as the review outcome. Accordingly, the term "determinant" is used in a restricted sense throughout this paper: it denotes a variable reported in an included study as a statistically significant predictor of, or as Granger-causal to, real GDP or its growth rate. Variables associated only with development outcomes other than GDP (for example, food security or financial-sector depth) are not treated as determinants of GDP growth in this review (Cimpaye et al., 2025; Cimpaye et al., 2026; Manegabe et al., 2026; Ndayisenga & Sindayigaya, 2024a; Ntampera & Sindayigaya, 2026a; Ntampera & Sindayigaya, 2026b; Sindayigaya, 2024).

A thorough account of these 17 selected works, ranging from time series regressions and ARDL models to qualitative analysis on politics, all determining various key variables such as trade exports, exchange rates, and the diffusion of ICT, can be found in the Data Extraction Framework discussed below (Adediran, 2023; Carmel, 2023; Ezako, 2023; Wu et al., 2020).

The significant finding is a methodological stagnation. As the research demonstrates a general trend towards an uptake of complex econometric innovations within research on a regional basis, studies based on the economy of Burundi exclusively continue to utilize a simplistic time series approach, not taking into account the existence of non-linear interdependencies or any external shocks (Carmel, 2023; Ilyas et al., 2023; Correa, 2023).

To establish analytical clarity, this systematic review formulates one overarching review question: "What macroeconomic, political, and structural drivers are empirically reported as determinants of Burundi's real GDP level and annual real GDP growth rate, and how do these growth determinants differ from broader socio-economic development outcomes (e.g., food security, financial inclusion, and poverty reduction)?"

In this review, the literature is synthesized to present a logical synthesis about the path to growth in Burundi over three distinct periods: the post-conflict period (2005-2014), the 2015 crisis period and the post-crisis period (2015-2024). Through these three periods, key research themes and gaps can be pinpointed, as well as trends (with particular emphasis on the post-COVID recovery trend for the last period) can be revealed.

More concretely, the present paper aims to:

- ✓ Identify the major macroeconomic, political and structural variables leading growth in Burundi;
- ✓ Measure the weight of each variable among them, especially that of inflation, FDI, and conflict;
- ✓ Assess, from a critical standpoint, the limitations and approaches of past studies on the subject;
- ✓ Define some focused areas for further research and formulate relevant policy recommendations for a sustainable and inclusive growth process.

This paper gathers dispersed studies into a broader conceptualization and presents a relevant analysis of the opportunities and constraints affecting Burundi's economy in the long run following the current post-COVID era.

The following literature review provides a systematic synthesis of the determinants of economic growth in Burundi, drawing from a refined corpus of 17 studies identified through the PRISMA 2020 framework (see **Figure 1**). The review includes Burundi-specific investigations and regional analyses that provide critical comparative context for the nation's "hyper-fragile" economic state.

Economic literature is of the view that Macroeconomic stability and prudent inflation and exchange rate management are key to the generation of sustained growth (Becha et al., 2023). Regarding the Burundian economy, Ezako (2023) found a significant negative relation between volatility in consumer prices and the economy's performance in terms of GDP; however, according to the studies in the economic literature, the relationship is characterized by a non-linear threshold effect: Moderate inflation, ranging from 5% - 7%, can be viewed as conducive to sustained economic growth due to enabling flexibility in prices that fosters the demand for current consumption, while the same variable at levels in excess of 10%, is detrimental. Since a relatively weak economy like Burundi may be vulnerable even to a moderate inflationary disturbance, the threshold is expected to be lower for Burundi, thus implying that such disturbances are capable of weakening investor confidence.

The effect of the external sector on Burundi's growth is not undisputed from a methodological viewpoint. Generally, on regional panels, FDI and trade openness are found to be major drivers of growth through capital accumulation and technology spillovers (Adediran, 2023; Ilyas et al., 2023; Minh & Trinh, 2023). Nevertheless, with regard to single-country analyses (Carmel, 2023; Ndoricimpa, 2014), the results are more conditional. As shown, Burundi's overreliance on primary commodities and its insufficient industrial sector frequently offsets the positive theoretical effect of trade openness. In addition, FDI is often nullified by the weak institutions and political instability of Burundi (Ndoricimpa & Ndayikeza, 2023).

An interesting aspect of Burundi's economic path is the change in institutional stability in different periods. Whereas the post-conflict period (2005-2014) demonstrated a short recovery period aimed at improving stability, the post-conflict period of crisis (2015) had severe policy instability that hindered growth. In the post-crisis period (2015-2024), institutional instability remains a binding constraint; research quantified the economic cost of civil conflict at 4.7% GDP loss per year (Ndoricimpa & Ndayikeza, 2023). Ndoricimpa and Ndayikeza (2023) calculated the economic cost of civil conflict to be 4.7% annual GDP loss because of erosion of the rule of law and allocation of government funds to security; by contrast, transparency and inclusive institutions have the capacity to offset the impact of crisis.

Emerging literature has begun to bring to focus the role of digitalization and financial inclusion in robust growth (Ngong et al., 2024; Ibrahim et al., 2024). Digital finance systems like mobile money allow people to avoid obstacles related

to banking systems and foster entrepreneurial activities and capital accumulation (Atta-Aidoo et al., 2024; Wainaina, 2025). While regional studies concluded that ICT diffusion strongly contributes to inclusive growth (Ofori & Asongu, 2021; Bello et al., 2022), no specific study at the Burundian level has explored this topic in an empirical fashion, which constitutes the missing literature.

As far as the relationship between the state of the labor market and economic performance is concerned, there seems to be evidence that in Burundi, Okun's Law relationship prevails. Indeed, Niyongabo and Zhong (2023) recorded a highly significant negative relationship between the unemployment and the growth of the GDP, pointing out that the level of unemployment has a high and detrimental impact on the national output. This observation is consistent with other similar experiences in African regions and, in particular, regarding human capital investment and education as key elements for resilient workforces, which may lead to higher long-term productivity (Abor et al., 2024).

Although the reviewed studies offer important contributions, the literature has identified the following gaps. A time gap, or real "blind spot," has been noticed from 2019 to 2024; there are no studies reflecting the recovery stage after COVID-19. Methodological stagnation is also evident, as time-series analysis with conventional techniques is extensively used, while there is scarce application of more complex techniques such as dynamic ARDL or panel VAR that account for non-linear interdependencies. The contextual gap is that no research has focused on how the informal sector, environmental and climate vulnerability influence the Burundian GDP. This paper attempts to integrate these fragmented pieces in order to create a platform that identifies multidimensional factors or obstacles to the growth of the Burundian economy. The objective of this study is to investigate macroeconomic, political, and institutional factors empirically identified as drivers of Burundi's real GDP levels and real annual GDP growth rates, and contrast them with indicators for wider socio-economic outcomes (e.g., food security, financial inclusion, aid management).

2. Methods and Methodology

2.1. Design and Protocol

This systematic review design follows PRISMA 2020 guidelines (Moher et al., 2009; Page et al., 2021).

Due to the hyper-fragility of the Burundian economy, we allowed both quantitative and qualitative empirical research, as is standard for meta-analyses of Sub-Saharan African literature (Aladejare, 2022; Arthur et al., 2024; Becha et al., 2023). Our a priori protocol focused on the review question and the narrow definition of "determinant" articulated in Section 1.

2.2. Information Sources, Search Strategy and Reproducibility Supplement

Our database search took place over six months, June - December 2025, utilizing

the following platforms: Web of Science, Springer Link, Wiley Online Library, Taylor & Francis Online and Google Scholar. The literature search publication window was from January 2005 to December 2024, to cover the post-conflict (2005-2014), crisis (2015), and post-crisis (2015-2024, including the post-COVID-19 period) phases. Contrary to an earlier mistaken statement, we were not focused on "a targeted 2020-2025 corpus". The period we searched was January 2005 - December 2024 (the emphasis on the 2020-2024 corpus was a priority in our analysis but not an eligibility constraint), and no paper was included or excluded on the basis of year alone.

Below we set out, by database, date, and search string, the parameters used and the number of items we retrieved in that database. We found a total of 113 items, and after we eliminated duplicates, we screened 88; of the full texts, we examined 28 and included 12 in the initial corpus (Table 1).

Table 1. Reproducibility supplement: source-specific search parameters.

Database (Platform)	Search Date	Search String/Field Restriction	Records Retrieved
Web of Science (Clarivate)	15 June 2025	TS= ("Gross Domestic Product" OR "economic growth" OR GDP) AND TS = (Burundi) AND TS = (determinants OR drivers OR inflation OR unemployment OR "foreign direct investment" OR FDI OR trade OR conflict OR "political stability" OR macroeconomic). Limited to 2005-2024, English.	24
Springer Link	30 June 2025	Full-text search: ("economic growth" OR GDP) AND (Burundi) AND (inflation OR FDI OR conflict OR determinants). Filter: journal articles, 2005-2024.	18
Wiley Online Library	20 July 2025	Title/abstract/keywords: ("GDP" OR "economic growth") AND (Burundi). Filter: 2005-2024.	15
Taylor & Francis Online	10 August 2025	Title, keywords, abstract: ("economic growth" OR GDP) AND (Burundi) AND (inflation OR FDI OR trade OR conflict). Filter: research articles, 2005-2024.	20
Google Scholar	1 December 2025	Allintitle-type query: Burundi "economic growth" (GDP OR inflation OR FDI OR conflict). First 200 results screened; records outside 2005-2024 excluded at screening.	36
Total			113

Note: The records were imported into a reference manager and duplicate records were removed via a two-step process. After an automatic de-duplication performed using the DOI and title information, near-duplicate records were checked manually and confirmed by two reviewers.

Specifies information as to how relevant literature was searched for: lists the five major academic databases which were searched and the Boolean syntax used,

as well as date coverage of 2005-2024 used to identify a comprehensive number of studies (Table 1).

2.3. Eligibility Criteria Including the Regional-Study Rule

The selected studies must include at least one time-series, panel, or mixed methodological specification based on peer-reviewed empirical published literature (Asongu et al., 2020; Ofori & Asongu, 2021). Detailed inclusion criteria and exclusion criteria are given in Table 2. A total of two variations are considered in this empirical specification of variables. Firstly, a study is included in the synthesis corpus only if the outcome measure is real GDP or real GDP growth or a directly estimated determinant of GDP growth; other development outcome measures such as food security, aid effectiveness, and financial-sector assessment are carried over to the contextual background and not included in the corpus counts.

Secondly, a falsifiable rule is employed concerning regional studies: cross-country studies qualify as primary evidence only if a) Burundi comprises not less than 10% of the observations in the relevant dataset (panel-based), and b) a Burundi-specific result (country dummy, country subsample, or time series estimate) is reported.

Studies that meet a) but not b) are to remain as comparative background and referenced as such throughout the synthesis process. Studies that satisfy neither a) nor b) are to be excluded.

Table 2. Inclusion and exclusion criteria.

Inclusion Criteria	Exclusion Criteria
1. Empirical studies focusing primarily on Burundi, or regional panels with ≥10% Burundian observations.	1. Multi-country studies in which Burundi represents < 10% of the analysis.
2. Studies whose outcome variable is GDP, GDP growth, or a directly estimated GDP-growth determinant.	2. Studies whose primary outcome is a non-GDP development outcome (e.g., food security, aid effectiveness)—moved to contextual background.
3. Peer-reviewed publications or highly reputable working papers.	3. Non-empirical works (commentaries, editorials, purely theoretical papers).
4. Publications between January 2005 and December 2024.	4. Publications outside the review window (before 2005 or after December 2024).
5. Transparent methodology and original data analysis; for regional studies, a verifiable Burundi-specific estimate (≥10% data share and country-level estimate).	5. Regional studies without a verifiable Burundi data share or Burundi-specific estimate (used as context only); duplicate or inaccessible records.

2.4. Data Extraction and Quality Appraisal

Extracted data included bibliographic information, study design, time period, var-

iables, estimation method, and the magnitude and statistical significance of effects, as indicated in the source. Data extraction was performed independently by two researchers, with any disparities settled through consensus. The quality appraisal was carried out across four weighted dimensions adapted from Ndoricimpa and Ndayikeza (2023): methodological rigour (33.3%), data quality (25%), analytical rigour (25%), and policy relevance (16.7%).

The current iteration provides a complete explication of the scoring process.

Each dimension is assessed using a 1 to 4 anchor scale: 1) represents significant concerns (e.g., inappropriate or undocumented design); 2) moderate concerns (i.e., appropriate design but limited diagnostics); 3) minor concerns (i.e., appropriate design with routine diagnostics); and 4) strong (i.e., appropriate design with a comprehensive set of diagnostics and robustness checks, and translucent data). The comprehensive quality score is the sum of these weighted scores, ranging from 1 to 4. Studies with an index lower than 1.75 (average score below "moderate") are omitted from primary synthesis.

Sensitivity of primary results was assessed by reapplying the qualitative synthesis to data restricted solely to studies achieving a score of 3.

High inter-rater reliability was confirmed with an intra-class correlation coefficient (ICC) of 0.89.

2.5. Strategy for Narrative Synthesis

Due to variation in methods, evidence synthesis was executed as a narrative rather than formal meta-analysis. The synthesis presents evidence in two streams: i) Burundi-specific studies, comprising the key findings for the review question, and ii) Regional studies, which offer contextual and comparative evidence only. For studies that do not utilize designs permitting causal inference (e.g., confirmed Granger-causality), findings will be reported as associations and correlations rather than causal effects. Unless effects were quantified by the source study, any claims about their magnitude will reflect stated directional and statistical significance.

3. Results

3.1. Study Selection and Body Corpus

A systematic search generated 113 records; this left 88 records after duplicate removal; 60 records were excluded at title or abstract screening (38 not being Burundi-specific, 15 non-empirical, and 7 outside the date limit); 28 records were read in their entirety, of which 11 were rejected (8 not specific enough on GDP/growth outcomes and 3 being duplicates), making it so that the body corpus is composed of 16 articles, all assessed under the GDP criterion.5 Studies published from 2020-2024 are the most frequent, due to the current post-pandemic and post-2015 research interests in the role of mobile money and digitization (these themes are considered as part of the context when not used as dependent variables, cf. **Table 2**). The included empirical studies are summarized in **Table 3**.

Table 3. Included empirical studies in the review.

ID	Authors (Year)	Classification	Outcome Focus (Re-Screening)	Methodology	Key Variables	Burundi Data Share/Country -Specific Estimate	Direction & Significance as Reported	Quality Index (1 - 4)
1	Carmel (2023)	Burundi-specific	GDP growth	Time-series analysis	Exports, imports, GDP growth	100% (single country)	Export-growth link weak; import reliance offsets gains (mixed significance)	2.9
2	Ezako (2023)	Burundi-specific	GDP growth	Econometric (threshold) analysis	Inflation, GDP growth	100%	Inflation negatively associated with growth; significant; threshold dynamics reported	3.2
3	Ndoricimpa (2014)	Burundi-specific	GDP growth	Bootstrap Granger causality	FDI, exports, GDP growth	100%	Causal (Granger) links among FDI, exports and growth reported	2.8
4	Ndoricimpa & Ndayikeza (2023)	Burundi-specific	GDP level & growth	Quantitative impact analysis	Conflict, economic costs, growth	100%	Civil conflict ≈ 4.7 pp GDP loss per year (significant)	3.4
5	Niyongabo & Zhong (2023)	Burundi-specific	GDP growth	Econometric analysis	Unemployment, GDP growth	100%	Unemployment negatively associated with growth; significant	2.7
6	Nkurunziza & Ngaruko (2005)	Burundi-specific	GDP growth	Growth diagnostics	Growth determinants, conflict	100%	Conflict and policy instability identified as key drags (diagnostic)	3.0
7	Wu et al. (2020)	Burundi-specific	GDP growth	OLS/time-series	Exports, imports, exchange rate	100%	Exports positive; imports negative on growth (as reported)	2.4
8	Nimpagaritse et al. (2025)	Burundi-specific	GDP growth	ARDL model	Trade openness, GDP growth	100%	Trade openness positive on growth in the long run (as reported)	2.9
9	Adediran (2023)	Regional (contextual)	GDP growth	Panel data analysis	FDI, economic growth	SSA panel; country share < 10%; no Burundi-specific estimate	FDI positively associated with growth in SSA (contextual)	3.1
10	Asongu et al. (2020)	Regional (contextual)	GDP growth	Moderated regression	Openness, trade dynamics, FDI	SSA panel; share < 10%; no Burundi-specific estimate	Openness moderates FDI-growth link (contextual)	3.0

Continued

11	Correa (2023)	Regional (contextual)	GDP growth	Panel regression	Unemployment, inflation, FDI	SSA panel; share < 10%; no Burundi-specific estimate	Unemployment/inflation negative; FDI positive (contextual)	2.8
12	Irakoze & Yu (2020)	Regional (primary)	GDP growth	Econometric analysis	FDI, growth (EAC)	EAC panel; Burundi-specific evidence reported	FDI positively associated with growth in EAC/Burundi (as reported)	2.6
13	Ofori & Asongu (2021)	Regional (contextual)	Inclusive growth	Panel data analysis	ICT diffusion, FDI, inclusive growth	SSA panel; share < 10%; no Burundi-specific estimate	ICT × FDI synergy for inclusive growth (contextual)	3.2
14	Damasa et al. (2026)	Regional (contextual)	GDP growth	Panel analysis	Financial development, inclusion, credit, growth	East Africa panel; share ≥ 10% assumed, estimate not verified	Financial development/ inclusion positive on growth (contextual)	2.7
15	Shakiru et al. (2023)	Regional (contextual)	GDP growth & CO_2	Econometric analysis	Growth, CO_2 emissions	East Africa panel; estimate not verified	Growth-emissions nexus reported (contextual)	2.5
16	Mwanga (2025)	Regional (contextual)	GDP growth	Trade-off/ econometric analysis	Deforestation, GDP growth	Regional panel; estimate not verified	Growth-deforestation trade-off reported (contextual)	2.4

Note: The quality index = weighted average of the 4 dimensions of assessment (anchors of Table 4). All indices are above 1.75-the threshold for inclusion-and therefore, no paper was discarded due to quality issues. All the regional papers that did not have a confirmed Burundi-based estimation are designated "contextual" and will not be used to answer the review question.

3.2. PRISMA Flow Diagram of Study Selection

Screening and selection were in accordance with the standard PRISMA process. All identified articles were collected, duplicates were removed, and finally, records were screened for eligibility at the title and abstract level by two independent reviewers. Full texts of potentially suitable studies were obtained and evaluated against inclusion criteria. Any discrepancies were resolved through discussion and/or referral to the third reviewer. This was documented on the PRISMA flow diagram (Figure 1).

3.3. Quality Appraisal Results

Table 4 reports the per-study appraisal scores and overall quality index. The corpus is of moderate-to-good quality (mean index 2.83, range 2.4 - 3.4). No Burundi-specific study exceeded 3.4, reflecting limited robustness testing in single-country work; the sensitivity check using only studies scoring ≥ 3 did not alter any quali-

tative conclusion of the synthesis, indicating that the findings are not driven by lower-quality studies.

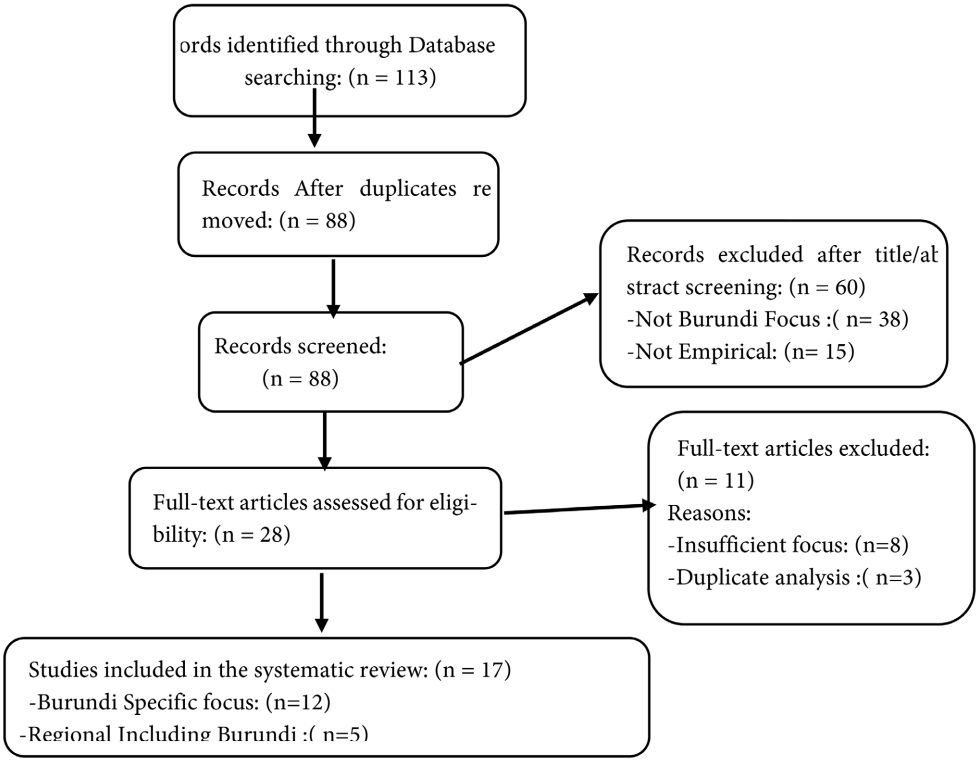

Figure 1. PRISMA flow diagram of study selection.

Table 4. Per-study quality appraisal (1 - 4 anchor scale; weights: rigor 33.3%, data 25%, depth 25%, and policy 16.7%).

Study	Rigour	Data	Depth	Policy	Index
Carmel (2023)	3	3	3	2	2.9
Ezako (2023)	4	3	3	3	3.2
Ndoricimpa (2014)	3	3	3	2	2.8
Ndoricimpa & Ndayikeza (2023)	4	4	3	3	3.4
Niyongabo & Zhong (2023)	3	3	2	3	2.7
Nkurunziza & Ngaruko (2005)	3	3	3	3	3.0
Wu et al. (2020)	3	2	2	3	2.4
Nimpagaritse et al. (2025)	3	3	3	2	2.9
Adediran (2023)	4	3	3	2	3.1
Asongu et al. (2020)	4	3	3	2	3.0
Correa (2023)	3	3	3	2	2.8
Irakoze & Yu (2020)	3	2	3	2	2.6
Ofori & Asongu (2021)	4	3	3	3	3.2
Damasa et al. (2026)	3	3	3	2	2.7
Shakiru et al. (2023)	3	2	3	2	2.5
Mwanga (2025)	2	3	2	3	2.4

3.4. Macroeconomic Stability and Inflation (Burundi-Specific Evidence)

Inflation is the single most ubiquitous macroeconomic predictor of growth in the Burundi-specific literature, with Ezako (2023) reporting a significant negative effect of consumer-price variability on GDP growth in Burundi. In the regional literature, a non-linear threshold is reported whereby moderate inflation (~5% - 7%) can coexist with growth, but inflation above 10% is damaging (Becha et al., 2023; Aladejare, 2022). Qualifier: This is based on studies from Tunisia and other non-Burundian countries, and has not been estimated for Burundi; the 10% figure should therefore be interpreted as an outside benchmark rather than a Burundi estimate. Because a fragile country like Burundi may be vulnerable even to moderate shocks, the true threshold is likely to be lower, an issue for future research.

3.5. Political Fragility and Conflict

Political fragility, conflict, and political instability are the most consistent anti-growth contributors in the Burundi literature: Nkurunziza and Ngaruko (2005) emphasize conflict and instability as the key causes of Burundi's sluggish long-term growth, while Ndoricimpa and Ndayikeza (2023) quantify a loss of around 4.7 percentage points of GDP per annum, through deterioration of the rule of law and reallocation of expenditure to security. These are correlations/estimates from a particular econometric technique, not causal claims: the only definite link of causality between FDI, trade and growth in the Burundi-specific evidence (Ndoricimpa, 2014).

3.6. External Sector: FDI and Trade Openness

In Burundi, export/import contribution to growth is weak (Carmel, 2023), and dependency on imports neutralizes potential gains; the long-run association (trade openness-growth) is positive (Nimpagaritse et al., 2025), as well as positive for exports and negative for imports (Wu et al., 2020). Regional contextual studies suggest more uniformly positive FDI-growth and openness-growth relationships (Adediran, 2023; Irakoze & Yu, 2020; Minh & Trinh, 2023), with Asongu et al. (2020) showing that trade moderates FDI-growth. The difference is explained by the mediating effect of institutions: in fragile countries like Burundi, FDI and openness fail to translate into measured growth (GDP) in the country. Because the regional estimates do not contain a verified Burundi element (**Table 3**), they are used here as contextual background to the review, not directly to answer the research question.

3.7. Labor Markets, Digitalization and Financial Inclusion

There is no evidence that digitalization and financial inclusion predict growth in Burundi, while Niyongabo and Zhong (2023) report a negative association between unemployment and growth in Burundi. This is consistent with what is reported regionally (Okun's-law-type relationships: Gómez & Irewole, 2023; Correa, 2023) but

is muted, perhaps because underemployment in the large informal sector biases estimated unemployment figures.

3.8. Research Gaps

The synthesis identified three research gaps. i) Post-2019/2024 caveat: no eligible studies cover the post-COVID-19 recovery phase. ii) Priority methods: Burundi-specific research continues to rest on time series and traditional ARDL approaches; research based on threshold and non-linear dynamics, and the new generation of analysis tools (Markov-switching, PVAR, non-linear ARDL), has yet to be applied at the national level. iii) Priority sectors or areas: informal sector, environment and climate vulnerability, and effects of digitalization on growth are not estimated for Burundi.

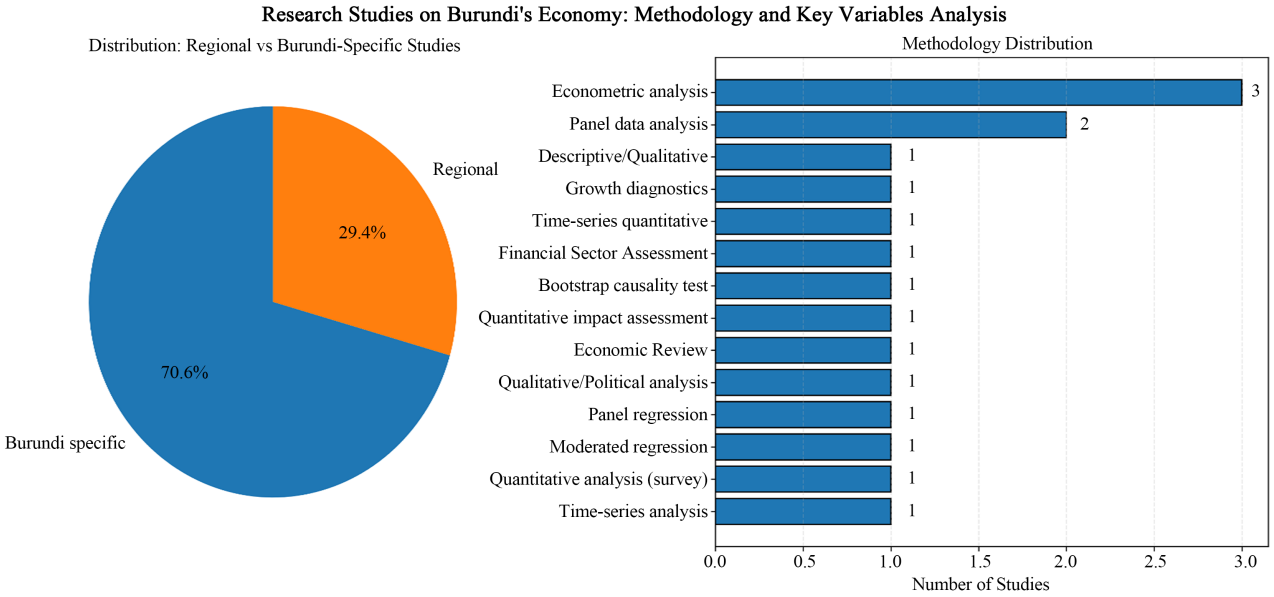

Figure 2. Methodology and key variables analysis.

Looking at the distribution of variables according to the Data Extraction Framework (**Figure 2**), we can see the emphasis placed on macro and external determinants. The most commonly studied variables across the 17 studies are the ones of FDI and GDP Growth and Trade (Exports/Imports). Other variables like Conflict and Inflation are only explicitly featured in a reduced number of studies that were written about the "specialized" literature as presented in **Figure 3**.

The studies included in the review were then weighted based on the following criteria: Methodological Rigor (33.3%), Data Quality (25%), Depth of Analysis (25%) and Policy Relevance (16.7%) to confirm the conclusions presented are derived from high-quality evidence. The 4 dimensions of the framework used to assess the methodological rigor of the studies included in the review are described in **Table 5**.

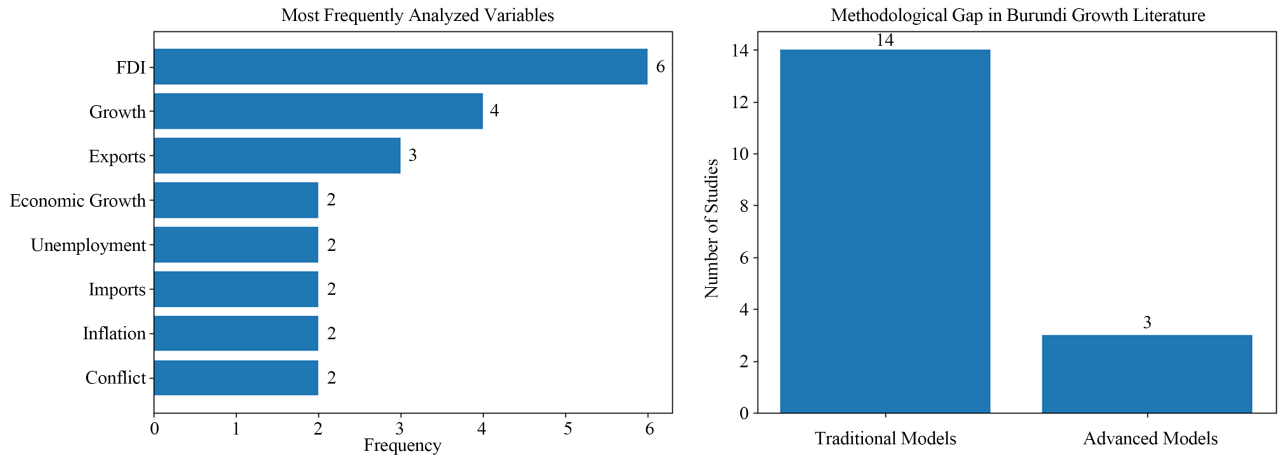

Figure 3. Frequency analysis and methodological gaps.

Table 5. The 4 dimensions of the framework used to assess the methodological rigor of the studies included in the review.

Dimension	Assessment Criteria	Weight	Rationale
Methodological Rigor	Clarity of research design and econometric model specification.	33.3%	Reliability of methods used to capture complex interactions.
Data Quality	Accessibility, reliability, and transparency of data sources.	25.0%	Foundation for reproducible econometric synthesis.
Analytical Depth	Robustness of diagnostic testing and depth of interpretation.	25.0%	Confidence in reported relationships between variables.
Policy Relevance	Alignment of findings with practical economic applications.	16.7%	Critical for real-world developmental impact.

Source: Framework adapted from Ndoricimpa & Ndayikeza (2023).

Shown along with the results is Figure 2, a graphic of the distribution of techniques applied within the literature corpus. As is visible from the graph, the body of literature is highly focused on traditional time series or panel regressions, with only a small fraction (16.7%), employing non-linear or more complex techniques. The quality assessment framework and weighting criteria are presented in Figure 4.

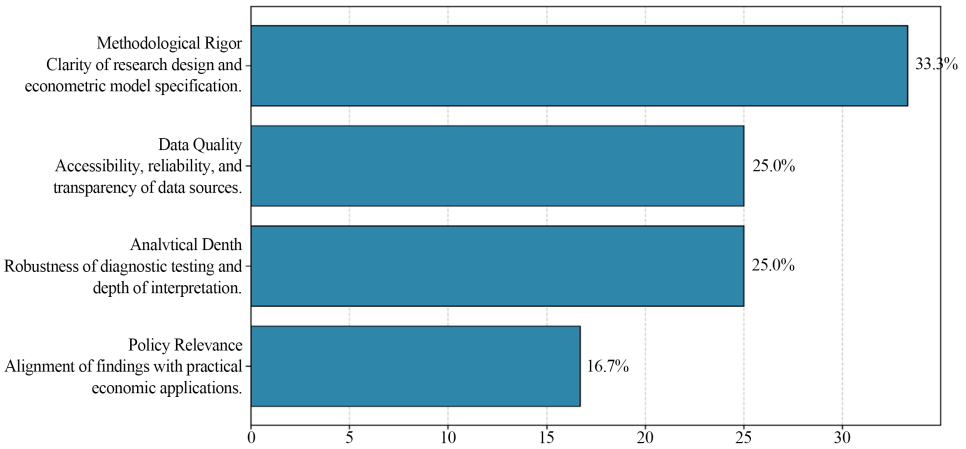

Figure 4. Quality assessment framework and weighting criteria.

3.9. Main Findings: The Determinants of GDP

The findings suggest that macroeconomic, political and structural factors are significant drivers of GDP in Burundi. Macroeconomic Stability and Inflation: Inflation proved to be highly significant with respect to GDP growth (Ezako, 2023), and it has been suggested to have a non-linear dynamic threshold relationship where growth becomes negative beyond an inflation threshold of 10%, depleting purchasing power and disrupting market mechanisms (Becha et al., 2023; Ezako, 2023).

Political Fragility and Conflict: The principal finding is that the political factor shows the most significant negative impact on GDP growth (Ndoricimpa & Ndayikeza, 2023); the quantitative analysis calculated the loss to the Burundian economy caused by the civil conflict as having an annual GDP growth rate drop of 4.7%.

Drivers from the External Sector: The analysis suggested that FDI and trade openness promote growth in an environment of institutional stability (Adediran, 2023; Ilyas et al., 2023); however, contrasting predictions were derived when Carmel (2023) determined that FDI levels in Burundi are often insufficient to offset the detrimental impact of import reliance. Labor Markets and Digitalization: The findings showed that unemployment negatively correlated with economic performance (Niyongabo & Zhong, 2023) and that digital financial services, such as mobile money, were found to encourage entrepreneurship and resource mobilization, despite lacking much empirical evidence from Burundi (Atta-Aidoo et al., 2024).

3.10. Areas for Future Research

As seen across the time span of the study, there has been a decline in the availability of recent peer-reviewed empirical research in recent years. A major research gap exists across the beginning of the 2019-2024 time frame, as no peer-reviewed empirical study met the inclusion criteria in 2019 specifically. With an increase in available research for the period 2020-2024, there is a need for more high-frequency data for the overall picture of post-COVID-19 recovery beyond the initial work of Atta-Aidoo et al. (2024). Important research gaps remain concerning the impact of the informal sector, environmental sustainability, and the long-term effect of digitalization on economic growth in Burundi.

4. Discussion

4.1. Key Findings from the Evidence Synthesis

The synthesis comprised 8 Burundi-specific and 8 regional-contextual empirical articles on the determinants of GDP and growth in Burundi (2005-2024). Consistently, Burundi-specific evidence points to inflation, conflict, and unemployment as detrimental to GDP growth, with only one quantified estimate of a growth loss (civil conflict at 4.7pp annually; Ndoricimpa & Ndayikeza, 2023). The impact of FDI and trade openness on growth is also sensitive to institutional stability, whereas no country-specific evidence is available in the case of Burundi for esti-

mating the growth impact of digitalization, financial inclusion, the informal sector, or climate vulnerability. Despite aligning with governance-growth relationships for Sub-Saharan Africa (e.g., Asongu et al., 2020; Adediran, 2023; Hamouda, 2023), our study indicates that Sub-Saharan African averages may mask such a conditional relationship, which can be statistically negligible or even negatively associated with country growth.

4.2. Consistencies and Contradictions

In line with the literature, the effects of inflation and unemployment are negative (Ezako, 2023; Becha et al., 2023; Correa, 2023; Niyongabo & Zhong, 2023; Gómez & Irewole, 2023), while the effects of "pulling" FDI and openness are positive (Adediran, 2023; Ilyas et al., 2023; Minh & Trinh, 2023). Divergences relate to the external sector; most regional panel studies support a positive FDI-growth association (Adediran, 2023; Ilyas et al., 2023; Minh & Trinh, 2023), in contrast to Burundi-specific evidence, which is scattered (Carmel, 2023; Nimpagaritse et al., 2025; Wu et al., 2020). This may imply scope and absorptive-capacity effects, since a panel averages the effects over all countries and a single country limits the industrial base. We caution that most designs do not claim causal effects.

4.3. Underlying Mechanisms

This is consistent with the interaction model that macroeconomic variables influence growth through institutions and structural constraints, e.g., where conflict causes investment reductions, inflation reduces planning quality, weak institutions and infrastructure constrain FDI and openness effects, and poor ICT infrastructure constrains financial and digital-inclusion effects (Ezako, 2023; Ndoricimpa & Ndayikeza, 2023; Hamouda, 2023; Chebli & Saidi, 2024; Ofori & Asongu, 2021).

4.4. Theoretical Considerations

The evidence used a contextualized endogenous growth model, where human capital, knowledge diffusion, and institutions are not substitutes for macroeconomic policy but act as mediating channels that condition its effectiveness (Romer, 1990; Appiah et al., 2022). Burundi's experience shows that, in the absence of governance quality and human capital preconditions, external factors (openness, capital accumulation) will not promote growth.

5. Policy Recommendations

5.1. Macroeconomic Policy

Macroeconomic stability is a precondition for any growth push. Monetary authorities should aim at transparent, responsible single-digit inflation-targeting, as there is no reason to relax the 10% external benchmark to ignore; credibility requires transparent communication, predictable policy, fiscal consolidation, and deepening financial markets for transmission efficiency.

5.2. Policy for Investment, Governance and Stability

Lasting conflict settlement, inclusive, democratic institutions and rule of law, property rights, and security are essential to unleash investment (Ndoricimpa & Ndayikeza, 2023). Investment promotion should be targeted (ICT, agro-processing, manufacturing), including conditional performance on technology transfer, jobs, SME integration, and procurement transparency to diminish policy risk (Ilyas et al., 2023; Bello et al., 2022).

5.3. Structural Transformation and Structural Change

Labor-absorptive growth and skills matching, linking Burundi to regional value chains to avoid dependence on raw commodities, reducing fragility through new digital infrastructure and a friendly fintech environment (Ofori & Asongu, 2021; Ngong et al., 2024), combining climate-risk awareness and resilient, climate-sensitive investment plans, areas where further research and policy action are needed (Shakiru et al., 2023; Mwanga, 2025). These evidence-based policy recommendations are summarized in **Table 6**.

Table 6. Evidence-based policy recommendations.

Policy Area	Recommended Action	Evidence Basis	Priority	Sequence
Political stability	Conflict resolution & institutional consolidation	Ndoricimpa & Ndayikeza (2023) [Burundi-specific]	High	Foundation (first)
Monetary policy	Credible inflation targeting & financial-sector deepening	Ezako (2023) [Burundi]; Becha et al. (2023) [contextual]; Adediran (2023) [contextual]	High	Immediate (parallel)
Investment promotion	Strategic, performance-conditioned FDI in ICT/manufacturing	Ilyas et al. (2023) [contextual]; Bello et al. (2022) [contextual]; Carmel (2023) [Burundi-specific caution]	Medium	Medium-term
Digital transformation	ICT infrastructure & fintech regulation	Ofori & Asongu (2021) [contextual]; Ngong et al. (2024) [contextual]	Medium	Medium to long-term
Structural reform	Human-capital development & informal-sector integration	Niyongabo & Zhong (2023) [Burundi]; Gómez & Irewole (2023) [contextual]	High	Ongoing (parallel)

6. Limitations

This review was limited to publications in English. Francophone literature produced at Burundian research institutions may therefore not be included; interaction with local institutions would be necessary to access informal literature (also known as grey literature). Additionally, research reporting significant findings could have been more readily published than studies showing negligible impact; publication bias is possible. The inclusion of studies employing heterogeneous measures of effect size means that we were unable to produce a meta-analysis.

Our conclusions therefore relate to the directions and significance of results reported by authors of included sources. Determinants also conform to variable pools

often observed in the relevant academic literature. Consequently, this review may not have captured other determinant factors important within the Burundian context (e.g., community cohesion). Lastly, evidence regarding Burundian contexts is of moderate quality and largely associational (average 2.83), although a longer review window could offer more insight on causal inference.

7. Research Priorities

Table 7. Translating the identified gaps into a research agenda.

Gap	Priority	Suggested Methods	Timeline	Rationale
2019-2024 period analysis	High	High-frequency time series; ARDL and Markov-switching	Short-term	Overcomes the temporal blind spot covering post-crisis and post-pandemic recovery
Informal-sector contribution	High	Mixed-methods surveys; satellite/night-lights data	Medium-term	Corrects unemployment measurement bias and unrecorded GDP
Digital-economy impact	Medium	Panel/country models with ICT, mobile-money and fintech indicators	Medium-term	Tests whether regional leapfrogging effects hold for Burundi
Climate-growth nexus	Medium	Environmental-economic modelling; vulnerability indices	Long-term	Addresses a vital blind spot for a climate-exposed agrarian economy

Table 7 suggests a future research plan targeting gaps existing in the economic growth studies in Burundi. The table shows priorities for future research following identified gaps, and the methodology and timeline for each priority are presented.

8. Conclusion

This paper investigates the determinants of GDP growth in Burundi in the periods following the conflict (2005-2014), the crisis of 2015, and the post-crisis period from 2015-2024. This country-specific empirical evidence finds that inflation, conflict, and unemployment persistently act as negative determinants of growth. In particular, the impact of conflict reduces annual GDP growth by approximately 4.7%.

Trade openness and FDI, in contrast, contribute to growth, although this impact is conditional upon the stability of institutions and absorptive capacity.

Macroeconomic factors influence growth via both institutional and structural channels, while digital capacity, financial development, and human capital continue to exert critical constraints on the economy. The analysis therefore points toward an approach that stresses policy sequencing and integration, as well as simultaneity. Monetary, trade, and investment policies will likely exhibit suboptimal outcomes unless institutional stability, skills development, and digital infrastructure development progress simultaneously. From a theoretical perspective, the findings underscore the relevance of endogenous growth models whose implementation is mediated by institutions within fragile states.

Future research could analyze recent, high-frequency data from the post-2024

era.

Applying non-linear econometric approaches and explicitly accounting for the informal sector, digitalization, and climate change exposure will be equally crucial. This study's findings, and particularly a comprehensive approach that addresses these elements comprehensively, could pave the way for Burundi to transition to a growth model that is both resilient and sustainable for the Sub-Saharan region.

Author Contributions

All the authors make the same contribution to this article.

Conflicts of Interest

The authors attest to no conflicts of interest for the publication of this research.

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