Factors, pathways, and mechanisms through which universal basic income achieves economic impacts: A systematic review

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Abstract

Although the potential outcomes of Universal Basic Income (UBI) have been extensively studied, existing literature has not been systematically scoped and synthesized to identify the factors, pathways, and mechanisms through which UBI achieves economic impacts. This systematic review addresses that gap by presenting a comprehensive conceptual framework that maps these analytical elements and their interplay. Guided by a PICO framework, the review examined a range of economic outcomes and employed contextual analysis and narrative synthesis across pilot studies, policy programs, and simulation models. The findings reveal the considerable complexity of implementing UBI in any context. Country-specific assessment and careful design are required due to several contextual differences such as country economic output size, demographics, levels of poverty and inequality, labour market characteristics, and tax-benefit systems. The review also finds that despite reported positive outcomes in poverty reduction, consumption and financial well-being, and financial feasibility, there are irrefutable trade-offs and structural shifts such as the tension between poverty reduction and increased taxation, the trade-off between UBI generosity and coverage (universality), and balancing the changes in the tax-benefit system and its distributive impact (inequality). Continued progress in UBI research requires country-specific applications, supported by a comprehensive analytical framework such as the one proposed in this review.

Keywords

Universal basic income, basic income, unconditional cash transfer, guaranteed income, pilot, experiment, microsimulation

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Philosophy [Evidence Based management] at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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I. Introduction

The proposal of a basic income as an unconditional cash transfer that is regularly paid for every individual member of society has been made since the eighteenth century (Van Parijs & Vanderborght, 2017). Distinct from social assistance or social insurance, it emerged at that time as an endowment idea to guarantee minimum subsistence. Thomas Paine (1737–1809) further developed the concept not as a form of charity but as payment for every person, rich or poor. A natural right or inheritance from the earth's land, considered by Paine as a common human property. Thomas Spence (1750–1814) took the idea further, in a sense more generous than Thomas Paine, articulating a vision more closely aligned with contemporary understanding which is as a continuous regular payment to individuals. Since then, the idea would have an intermittent presence in public policy and economic discourse, and arguments for it surprisingly came from traditionally opposing perspectives, libertarianism (Casassas et al., 2023) and socialism (Fleischer & Lehto, 2023). While libertarians are generally opposed to redistribution, some endorse a basic income on the grounds that unconditional cash transfers enhance individual freedom by avoiding the paternalism and inefficiencies associated with state-led redistribution. This conception of freedom (for example, freedom from poverty) bears certain affinities with socialist ideals. However, for libertarians, freedom retains primacy over other values (Casassas et al., 2023).

Basic income discourse reemerged in the United Kingdom post-World War I under the social dividend concept advocated by Oxford University economists George D. H. Cole (1889 -1959) and James Meade (1907-1995), and became policy proposals in the United States during the 1960s and 1970s taking different shapes such as a negative income tax scheme, family assistance plan and guaranteed minimum income, which made inroads to congress and political party platforms (Van Parijs & Vanderborght, 2017). In 1976, the Alaska Permanent Fund was established, and this annual resource dividend, which is considered near universal basic income, is enduring in the United States. North and Western Europe dominated the 1980s with experimentation and then spread to other parts of the globe in the 2000s. During the covid-19 pandemic, universal basic income was also advocated (Van Parijs, 2023).

Gentilini (2020) expressed that continued interest in universal basic income or UBI, is "symptomatic of larger societal discomforts" (p. xiii), and these include widening income inequalities (Van Parijs & Vanderborght, 2017) and transformations in the world of work driven by automation, robotisation (Daruich & Fernandez, 2024) and artificial intelligence. As such, UBI has become interdisciplinary falling in the spheres of

economics, political science, philosophy, development studies, sociology, psychology and public health. As Afscharian et al. (2022) said, “it touches on principles of justice and freedom, need and poverty, inequality, growth, social opportunity, and self-development” (p. 213). There had been a growing number of research studies and experimental programs across the globe to evaluate the effectiveness of UBI in addressing societal problems (Hasdell, 2020). In at least nine domains, experiments from both developed and developing countries show that UBI has a potential positive impact on outcomes (Hochman et al., 2024). A cross-synthesis of 16 systematic reviews by Hasdell (2020) show a broad range of domains and outcomes “at the individual level, community level and implementation process” (p.9). A meta-analysis by Rizvi et al. (2024) concluded that “results of the included studies were difficult to synthesize because of the heterogeneity in the reported outcomes. This was due in part to poverty being multidimensional, so outcomes covered various aspects of life (economic, social, psychological, educational, agency, mental and physical health)” (p.3).

The aim of this systematic literature review is to evaluate empirical studies on UBI to provide a synthesis of factors, pathways, and mechanisms through which UBI achieves economic impacts. The review questions are what shapes or moderate the outcomes (factors); how does UBI move from intervention to outcome (pathway); and what are the underlying processes and changes triggered by UBI that explains why the outcome occurs (mechanisms) (Denyer et al., 2008). By uncovering these elements and consolidating these into a coherent conceptual framework, this review offers scholars and practitioners a structured lens through which to understand and navigate the multilayered dynamics associated with UBI implementation. This review focuses on the economics domain and avoids the multidimensionality or battery of outcomes reviewed by other researchers to uncover more clarity of its potential towards implementation by governments at the national or regional level.

There are several narrative and systematic reviews on UBI and similar cash transfer schemes, and majority of these are on outcomes or impacts (see Table 1). Macroeconomic effects of a UBI are particularly important yet remain a notable gap in the existing body of research (Chrisp, 2023). It also emerged from the cross-synthesis of reviews carried out by Hasdell (2020) that contextual features, pathways, and mechanisms of intervention effects are understudied. Motivated by these two gaps, this review investigated the determinants of UBI’s economic outcomes. In doing so, it uncovered the substantial complexity inherent in implementing UBI across diverse contexts, but despite this complexity, the review offers a coherent synthesis that clarifies how UBI functions and affects the economy.

UBI's economic impacts have been under three main questions. First the effectiveness of UBI in reducing poverty and inequality has been extensively examined, particularly in comparison to existing policy interventions. The findings in this respect are positive (Bastagli et al., 2019; Gentilini, 2020; Rizvi et al., 2024). The outcome measures used for poverty reduction usually include the poverty headcount and the poverty gap. Second, there is a consensus on the high costs to implement a UBI policy, but how to finance is entirely context-specific and evidence in some countries suggests that UBI can be viable when accompanied by reforms to the taxation system and enhancements to existing welfare programmes (Torry, 2023). In developing countries, basic income research is still considered in the early days and funding mechanisms will be different than in developed countries (Banerjee et al., 2019). Cost of UBI has been measured in different ways and some of these are as a percent of the country's GDP, and in terms of additional tax revenues to be generated or the resulting government budget balance. Third, is the impact of UBI on labour markets where the implementation of UBI could result in a contraction of labour supply, and a significant reduction is deemed unacceptable. The relationship between UBI and employment is multifaceted, as it requires consideration of not just the impact on labour supply, but also its effects on labour demand, entrepreneurship, productivity, and innovation (de Paz-Báñez et al., 2020; Gilbert et al., 2018). Thus, there has been a flurry of studies and reviews in these aspects. Labour impacts were usually measured by labour force participation rate and number of hours worked (part-time, full-time, and overtime).

Additional three economic outcomes were considered by this review – income inequality (usually measured by the Gini coefficient), consumption impacts (assessed through the marginal propensity to consume or MPC), and income volatility (changes in per capita income over a period) and financial well-being (subjective or based on some nationally determined measurement scale). Income inequality was found inherently complex and attached to financial feasibility mechanisms of UBI and its distributive impact. The interaction of variables underlying these economic outcomes are the factors, pathways and mechanism, which comprise the core of this review.

The five definitional features of UBI according to Bidadanure (2019) was followed by this review. It is a payment made in cash (not in-kind), regularly (monthly for example), individually (not to the household), unconditionally (no work requirements or sanctions) and universally (not targeted to any specific demographic group such as the poorest, elderly, women, or children). According to Torry (2023), "strictly speaking 'Universal Basic Income' means simply 'Basic Income': but the 'universal' is making a point" (p.29). This review adopts a definition based on characteristics and conforms with the 'Basic

Income' definition of the Basic Income Earth Network (BIEN), a recognized organization in the UBI debate. Because the characteristics are unsteady under a variety of UBI proposals (Bidadanure, 2019), there are schemes that are so called "cousins" to UBI such as minimum income guarantee, unconditional cash transfers, basic income guarantee and negative income tax (Torry, 2023).

Table 1

Narrative and Systematic Reviews

Authors and Year	Focus of Review
Asensio-Coto et al. (2020)	Labour supply effects
Bastagli et al. (2019)	The impact of cash transfers has been assessed across 35 indicators spanning six key outcome areas: monetary poverty; education; health and nutrition; savings, investment, and production; employment; and empowerment in low- and middle-income countries
Chrisp (2023)	Macroeconomic effects
de Paz-Báñez et al. (2020)	Labour supply effects
Gibson et al. (2018)	Design, evaluation and impacts - labour market participation, health, education, family and community, spillover effects, poverty, inequality, and business investment
Gilbert et al. (2018)	Labour responses in 16 trial programs
Hochman et al. (2024)	A meta-analysis across nine outcome categories
Hoynes & Rothstein (2019)	Compared UBIs and similar cash transfer programs in advanced countries
Pinto et al. (2021)	Methods used to evaluate impacts of basic income interventions
Rizvi et al. (2024)	A meta-analysis on poverty-related outcomes in high-income countries
Somers et al. (2024)	Broader intended and unintended effects across various domains, including income, mental and physical health, subjective well-being, social outcomes, labour supply, poverty, and inequality

The methodology is described in the next section and the scope of inquiry is guided by a PICO (population, intervention, control, and outcome) framework (Nishikawa-Pacher, 2022), and the PRISMA 2020 methodology (Page, 2021). The findings are presented according to the type of methodology employed by the empirical studies, whether pilot and experiment, policy programme, or simulation study. Distinctions between developed and developing countries were examined. A conceptual framework was compiled as a synthesis of the findings, and reflections on future implementation pathways and gaps in research are also discussed.

II. Methodology

Inclusion and exclusion criteria

This review is structured using the PICO framework (Population, Intervention, Comparison, Outcome), as adapted by Nishikawa-Pacher (2022), to clarify the scope of inquiry and delineate the economic outcomes explored in this review.

Table 2

PICO Framework of this Review

Population	Global (high-income, upper middle-, lower-middle-, and low-income countries); and Micro (individual, households, communities) and macro (national/regional) levels
Intervention	The intervention is UBI implemented as pilots, policy programs, experiments, and microsimulations. This review will follow the five definitional features of UBI according to Bidadanure (2019). **It is a payment made in cash (not in-kind), regularly (monthly for example), individually (not to the household), unconditionally (no work requirements or sanctions) and universally (not targeted to any specific demographic group such as the poorest, elderly, women, or children).**
Control	Null, baseline, existing social welfare programs or other interventions such as conditional cash transfers, tax credits or incentives if compared to UBI in the studies.
Outcome	Poverty reduction, income inequality, income volatility and financial well-being, labour market impacts, consumption, and financing feasibility (cost of UBI and how it will be funded) are the measurable economic outcomes included in this review.

The review applied the PRISMA 2020 methodology (Page, 2021) to the highest extent feasible, and selected the empirical studies based on the PICO framework and inclusion and exclusion criteria. The UBI study must be in the economics domain or sub-domains. Studies are based on primary data (pilots and experiments) and secondary data (simulation studies). Microsimulations are approaches used to answer UBI questions at the national level (Chrisp, 2023), and some of these are combined with a

macrosimulation to capture complex interactions simultaneously in the entire economy. At least four of five UBI definitional features of Bidadanure (2019) must be met. It is anticipated that the universal feature of UBI is difficult to achieve in a pilot or experiment reflecting variations in UBI implementations (Gentilini, 2020). Still, four of five definitional features is a high threshold chosen by this review to stay as close as possible to the pure UBI concept and this choice enhances the quality of findings and synthesis. Studies using rigorous experimental and quasi-experimental research methods are included, such as Randomized Controlled Trials (RCT), Difference-in-Differences (DID), temporal variation (inter-annual) method, and synthetic control method; and parallel mixed-method designs (quantitative and qualitative). Then, only completed pilots and experiments are included because study outcomes and factors are integral to the review analysis. Studies in social protection or sociology are excluded because of the focus on specific demographic groups. Also excluded are case studies or studies using only qualitative research methods because this review aims for generalizability or outcomes at national or regional scale.

Literature search methods

Empirical studies were searched in Scopus and Web of Science using the search terms universal basic income, basic income, guaranteed income, and unconditional cash transfers (considered as a variant of UBI). To narrow the results, additional search terms pilot, experiment or microsimulation were used. Database filters are publication period from year 2014 to 2025 in academic journals, in English and are peer-reviewed. Specific citation searches were also carried out, as well as exploratory searches in databases of academic institutions with dedicated research programs such as the Standford Basic Income Lab, the University of Pennsylvania Center for Guaranteed Income Research, and non-profit organizations such as the National Bureau of Economic Research, Campbell Library, GiveDirectly, World Bank and OECD library.

Selection of studies

A total of 503 papers were identified, 207 from Scopus and 216 from Web of Science, of which 120 were found as duplicates and were removed. From exploratory searches, only the website of the University of Pennsylvania Center for Guaranteed Income Research has empirical studies and 13 were identified. Fourteen articles were identified by citation search, bringing the total papers identified for screening to 410.

Three stages were employed in screening literature following the PRISMA 2020 methodology (Page, 2021) and this process was recorded (see Figure 1). The first stage is reviewing titles only or title plus abstract, of which numerous papers were excluded

because they are non-empirical, not within the economics domain and therefore have ineligible outcomes or they categorically stated as focusing on conditional cash transfers (non-UBI). The second stage was obtaining full text documents of potentially relevant studies of which only one cannot be retrieved. The third stage was screening 86 studies against the inclusion and exclusion criteria (59 from Scopus/Web of Science and 27 from the website and citation search), of which 48 were excluded mostly for focusing on ineligible outcomes based on the PICO Framework, for not meeting at least four of the five UBI definitional features, or due to ineligible methodology such as purely qualitative research and theoretical modelling. After these three stages, a total of 38 studies are deemed eligible. Internal and external validity checks were carried out to ensure that the studies included in the review are substantially weighted on randomization, treatment/control, blinding, low attrition, representativeness and potential replicability.

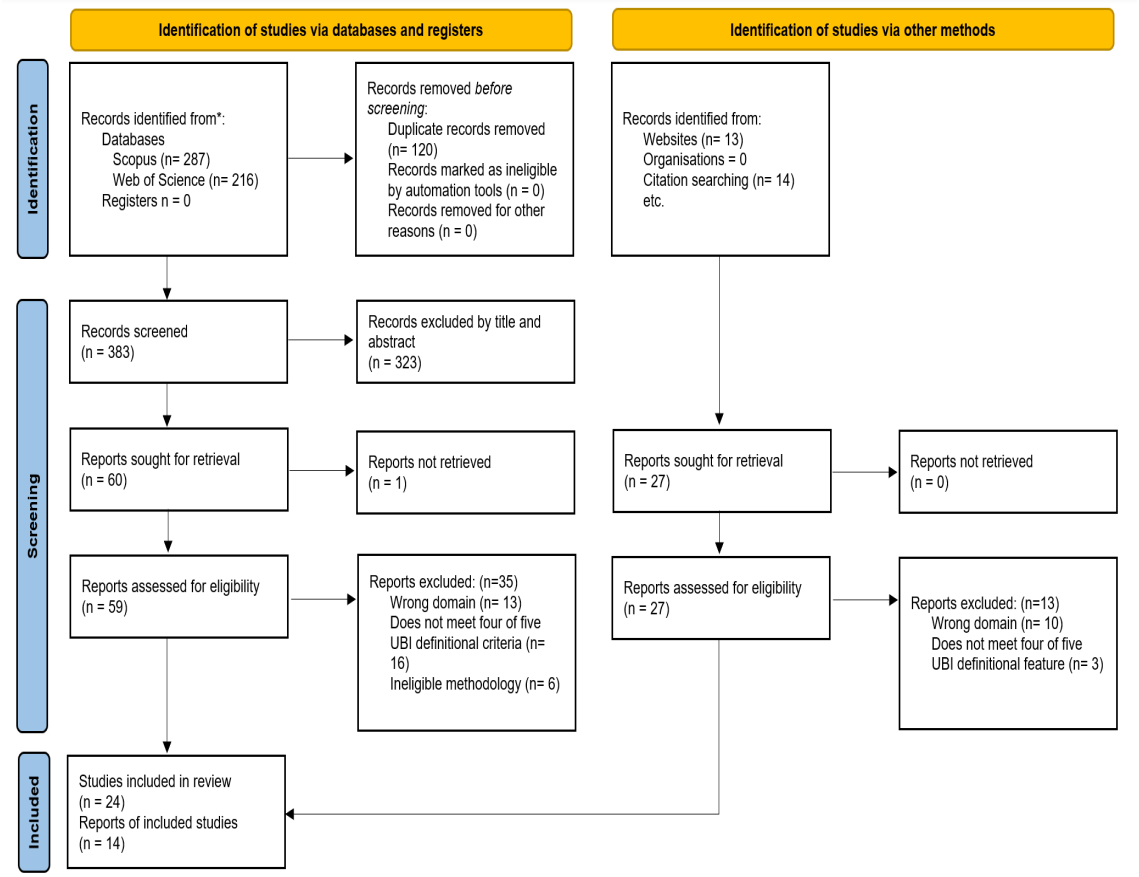
Included studies comprise of 8 pilots and experiments, 5 on policy programmes and 25 simulation studies. In the UBI literature, the terms pilot and experiment are frequently used interchangeably. In this review, both refer to time-bound and limited-scale UBI interventions and can have methodological and scientific differences. Pilots and experiments generally serve one of two purposes: either as field experiments aimed at generating evidence on causality and outcomes, or as policy trials conducted to assess the effectiveness of a programme prior to broader implementation.

Policy programme refers to an actual UBI policy implementation, but none was found. Instead, non-UBI policy implementations in Iran and the Alaska Permanent Fund Dividend are included because they are regarded in the field as having similar features to a UBI. Due to the limited scale of pilots and experiments, microsimulations are used to answer UBI questions at the national level (Chrisp, 2023) using econometric modelling to understand aggregate effects from individual and household behaviours over time. In this review, some studies combined micro and macrosimulations to obtain more comprehensive interactions and impacts in the economy.

Grey literature and papers that meet the inclusion criteria were categorized separately and underwent additional checks against first tier retrievability criteria of Adams et al. (2017). Selection was based on relevance, author information, institutional affiliation, and scientific rigour in methodology and analysis. Studies published by very reputable academic and research institutions that evaluate authors and research methods were considered.

Figure1

PRISMA 2020 Flow Diagram for the Screening and Selection Process



Data collection, analysis and synthesis

All 38 empirical studies were read in full and bibliographic data as well as the key features supporting the eligibility of the study based on the inclusion criteria were recorded in Excel (collectively referred here as study characteristics). Coding was done in both Excel and ATLAS.ti, and the latter was mainly used for labelling parts of the study that answer the review questions, while the Excel has both the study characteristics and data for the review questions. There were pre-determined codes, but open coding was also allowed for a variety of data to emerge particularly on factors, pathways, and mechanisms of intervention effects.

Content analysis was utilized to identify the study characteristics. The review surveyed the motivations or phenomena that prompted the UBI initiatives and empirical research, and these are the determinants that the studies fall within the economics domain. Another key characteristic is whether the country or location of study is in a high-, upper middle-, lower middle- or low-income country using the World Bank's classification

(World Bank, 2025). This will enable precision in analysing contextual factors as well as finding distinctions or nuances between types of countries. The research methodologies used are another important set of characteristics, not only as part of the inclusion criteria, but also to evaluate the robustness of the study method and facilitate accurate classification of findings. Finally, the measured indicators and study outcomes were extracted. Most studies sought to assess multiple outcomes, reflecting the multidimensional nature of UBI interventions. Simulation studies in particular frequently evaluated several policy scenarios. Despite this complexity, the analysis remained fully aligned with the outcomes specified under the PICO framework.

On the central review questions of factors, pathways, and mechanisms, content and contextual analysis methods were utilized. A factor is what shapes or moderate the outcome, and it can be an internal or external variable (independent variable of an econometric model or exogenous variable) or a variable that affects how UBI functions in a particular context (for example, specific country characteristic). A pathway is how UBI moves from intervention to outcome, and therefore a sequence of events or a process. A mechanism is an underlying process or change triggered by UBI that explains why the outcome occurs (Denyer et al., 2008), something beneath or a driving force in the pathway. These descriptions were motivated by Hasdell (2020) who described the research gap of analysing contextual factors affecting individual and household behaviours or decisions and showed how these interact with the dynamics in the broader environment by applying a framework that conceptualizes these various elements.

Narrative synthesis was carried out by critically analysing the findings under the review's central aim and overcomes the heterogeneity of the studies with regards to measured outcomes, methodologies and characteristics of population. Two elements of the narrative synthesis guide of Popay et al. (2006) was valuable in the process. First, developing the preliminary analysis as described earlier by recording the study characteristics and findings, and clustering the studies into themes and providing explanations for these themes. Second, analysing relationships within and between the studies led to common themes and developing the conceptual framework that can be applied to any context.

The inclusion and exclusion criteria are rigorous, but this strict criterion of four out of five UBI definitional features is a delimitation and may have excluded studies that could offer valuable insights. But since there are already several systematic reviews often comparing varied schemes of cash transfers, more weight is put into this criterion to be as precise as possible in developing a conceptual framework that is unambiguous when

used to study economic outcomes. There is a limited number of UBI pilots and experiments that are implemented in a large scale and illustrative of implications at a national scale which is a key aim of this review, and this is a common limitation for many UBI research. The field however has been bolstered with many robust simulation studies and findings that are widely recognized. Exclusion of non-English studies is another limitation because Latin America has a rich experience of unconditional cash transfers schemes (Garcia-Murillo & MacInnes, 2021; Mideros & O'Donoghue, 2015a).

III. Findings from Literature Review

Information on the reviewed empirical studies such as the motivation or phenomena that prompted the UBI programme or research, and the geographic coverage or country income classification, establish a background to understand the findings of this review (see Tables 3 and 4). Under the PICO framework, six key economic outcomes were selected to represent these motivations: poverty, income inequality, income volatility and financial well-being, consumption, labour market outcomes, and the cost of UBI. Many studies though were motivated by multiple concerns, often measuring more than one of these outcomes.

Labour market outcomes were the most frequently examined, accounting for 28% of the total. This was followed by studies focusing on the cost of UBI (21%), income inequality (19%), poverty (15%), income volatility and financial well-being (10%), and consumption (8%). In total, the studies covered 51 countries, with a majority (57%) conducted in high-income countries. Upper-middle-income countries accounted for 22%, lower-middle-income countries for 18%, and only 2 studies included low-income countries (Uganda and Togo). This distribution reflects a significant gap in the evidence for UBI in low-income settings.

Table 3

Number and Percent of Studies according to Outcomes

Outcomes	Number of Studies	Percent
Labour market outcomes	22	28%
Cost of UBI	17	21%
Income inequality	15	19%
Poverty	12	15%
Income volatility, financial well-being	8	10%
Consumption	6	8%

Table 4

Number and Percent of Studies according to Country Income Classification

Country Income Classification	Number of Studies	Percent
High-income countries	29	57%
Upper middle-income countries	11	22%
Lower middle-income countries	9	18%
Low-income countries	2	4%

First, the findings of this review are organized according to the methodological approaches employed, specifically, pilots or experiments (Appendix A), and micro- or

macro-simulations (Appendix C). In addition to these categories, two policy programmes - the Alaska Permanent Fund Dividend and Iran's national cash transfer scheme - are examined separately (Appendix B). Although these programmes were not explicitly designed as UBI initiatives, they exhibit key UBI-like features, such as unconditionality and universality, and were intended as permanent policy instruments. Their inclusion is significant due to the wealth of economic analyses they have generated over time, offering valuable insights beyond the limitations of short-term pilot studies. Second, the observations on factors, pathways, and mechanisms from all 38 empirical studies reviewed are presented in Tables 5, 6 and 7.

Findings from pilots or experiments

Employment-related outcomes feature prominently in pilot objectives reflecting the concern on UBI that it will cause a negative labour response. Gilbert et al. (2018) analysed labour responses in sixteen trial programmes and found that 93% of reported labour outcomes showed no significant negative effect based on a decrease in working hours or employment participation exceeding 5%. Only two of those trials, the Madhya Pradesh, and the Alaska Permanent Fund Dividend, are included in this review of 10 pilots and policy programmes, primarily due to differing inclusion criteria. In particular, the differences are in the study period (more than 10 years), payment to households (instead of individuals), some with conditionalities (for example, children immunization or schooling, not employment) and selectivity in targeting (for example, youth). Nonetheless, this review aligns with Gilbert et al. (2018), finding that UBI recipients generally remain employed over time.

Key factors that keep recipients attached to the labour market are the poverty situation, the UBI size and structural economic barriers. With exception of the Madhya Pradesh basic income experiment, the seven pilots in this review did not meet the UBI definitional feature of universality. Recipients were either selected through means-testing based on national poverty lines or drawn from pools of existing welfare beneficiaries, many of whom were experiencing severe poverty. In the U.S. Mayors Guaranteed Income pilots, for example, recipients' annual incomes ranged from 100% to 300% of the Federal Poverty Line (Flynn et al., 2023; Flynn et al., 2024; Nichols et al., 2025; Kim et al., 2024). The monthly transfers of USD 500 in Providence, Tacoma, and Saint Paul (equivalent to 21–43% of participants' average annual income) and USD 1,000 in Los Angeles under BIG:LEAP (82%) were relatively significant. The transfers relieved some stressors on the recipients from scarcity, but it was not sufficient to overcome structural factors such as rising inflation, the very high housing cost burden, unpredictability of working hours and

low hourly wages. Notably, the BIG:LEAP participants viewed the limited duration of support as a reason to focus on urgent financial goals, such as housing and savings, rather than reducing work hours (Kim et al., 2024).

In Madhya Pradesh, the researchers feared that the monthly cash transfer size (Rs.300 per adult and Rs.150 per child) was very low to have an effect. Nevertheless, it had significant effects on work, with treatment villages reporting higher number of days work and higher number of work hours for own account or own economic activity (Davala et al., 2015). While transitory and sampling biases may partly explain these results due to the limited duration and specific selection of participants, the policy-level programmes in Iran and Alaska, free from such biases, offer corroborating evidence that UBI does not generally disincentivize work.

The Finland basic income experiment and Barcelona B-MINCOME pilot indicate that implementation and design factors, particularly activation policies, may have affected employment. In Finland, no employment effects were observed during the first year, with both treatment and control groups showing similar outcomes. This was attributed to challenging labour market conditions and the fact that 57% of participants had no self-employment earnings (Kangas et al., 2019). Although modest effects appeared in the second year, they diminished after adjusting for background variables. Complicating the results further, a government-imposed activation model introduced midway added employment conditions to social benefits, creating confounding effects (Jauhiainen et al., 2021). The Finland experiment was inconclusive on employment effects due to these implementation factors. The B-MINCOME pilot reported a small decline in labour force participation, attributed to a lock-in effect, and it neither stimulated entrepreneurial activity nor increased the likelihood of securing employment. This lock-in effect likely emanated from labour activation policies such as trainings and work insertion programmes that can cause changes to participants' preferences or job-seeking strategies (Riutort et al., 2023). Both pilots reveal the implications of combining UBI with activation policies.

Though typically considered an economic intervention, UBI is increasingly recognized within public health due to its connection with social determinants like income and financial stability (Johnson et al., 2023). All the pilots in this review reported positive outcomes on income stability and financial well-being except for the Stockton RCT (West & Castro, 2023) because participants were also weathering the covid19 pandemic. Davala et al. (2015) went as far as claiming that the emancipatory effect exceeded the monetary value because UBI enabled participants to make autonomous spending

choices, and reduced debt, borrowing, and vulnerability to hazards or income shocks. The pathways for positive outcomes are firstly, UBI's impact on resource scarcity which provides material capacity for the promotion of health, and secondly, the reduction of chronic anxiety or stress which is a major source of unwanted health conditions. Improved health and well-being, in turn, promote work or productivity and reduces health care costs. Consequently, these have impacts on public health spending and tax yields which are economic returns of investments (Johnson et al., 2023).

In the United States pilots, financial well-being effects measured through the ability to cover a USD 400 emergency expense and using the Consumer Financial Protection Bureau's Financial Well-Being Scale (CFPB), were not sustained in Stockton, Tacoma and Saint Paul, six months after the pilots stopped, underscoring that short-duration transfers cannot counter persistent structural challenges such as high living costs (Flynn et al., 2023 Flynn et al., 2024; West & Castro, 2023). While lack of universality and limited evidence on long-term benefits remain obstacles for UBI policy discussions, the consistently positive short-term outcomes provide strong justification for continued experimentation and advocacy.

Findings from policy programmes

In contrast to pilots, unconditionality and universality are features in the policy programmes of Iran and the Alaska Permanent Fund Dividend (PFD) and provide a clearer lens for potential outcomes. The Iranian government provided cash transfers that reached 95% of the population to replace hefty energy and bread subsidies. The transfers began in December 2010 and continue to this day albeit redesigns over the years. The study on labour responses to the cash transfers was for the period up to 2012 and concluded that there is no evidence that the cash transfer had negative effect on labour supply and to the contrary found positive effects for women and self-employed men (Salehi-Isfahani & Mostafavi-Dehzooei, 2018). In Iran, both jobs and credit are rationed and are the likely factors for these outcomes. Workers are strongly attached to their jobs because of the high unemployment context and limited availability of jobs in both private and public sectors. The infusion of cash also eased borrowing constraints and allowed for investments in economic activities that increase labour supply.

Alaska's Permanent Fund Dividend (PFD), an annual, unconditional cash payment to all state residents, is funded by returns from oil royalties and other income streams. Bibler et al. (2023) found that the net effect observed is a small negative impact on aggregate labour market hours, composed of increased male employment and reduced hours for employed women especially those with young children. Based on Jones & Marinescu

(2018), there was no significant decrease in aggregate employment and there might have been a shift towards part-time work. Factors such as gender and marital status are likely the reasons for the adjustments towards this part-time work. These findings are crucial in allaying fears of negative labour responses to universal and unconditional cash transfers. Both studies, while using different methodologies and focusing on different time horizons (short-run effects around disbursement period versus long-run average effect), present findings that are consistent with general equilibrium outcomes - income effect (increased leisure) is offset by the demand-side effects (increased consumption and business hiring). The universal nature of the PFD creates a consumption-driven demand shock that counterbalances any reduced labour supply, yielding stable macroeconomic outcomes.

On income inequality, Kozminski & Baek (2017) found that the Alaska Permanent Fund Dividend (PFD) exacerbated inequality in both the short and long term, likely due to divergent spending behaviours between high- and low-income groups. Low-income groups have impulse responses and are spending on disposable goods or immediate essentials, while high-income groups may save or invest which generates future financial returns thereby compounding wealth over time. However, on consumption sensitivity, Kueng (2018) established that low-income households with liquid assets smooth the dividends well, but low levels of liquid assets in low-income households predict higher Marginal Propensity to Consume (MPC). Nonetheless, Kueng's study confirmed that regular, predictable payments like the PFD increase consumer spending with a cumulative MPC of 25% and the MPC is driven by the high-income group (50%).

Findings from micro and macrosimulations

Micro and macrosimulation models are increasingly used in the UBI policy debate because they can address the limitations of pilots and experiments in terms of assessment for universality and potential long-term impacts. Microsimulations' mechanical operation of policy rules under different UBI design scenarios provide understanding of the aggregate effects in the economy from behavioural responses of individual units. For example, when applied within specific national tax-benefit structures, the redistributive outcomes on poverty and inequality can be observed (Aerts et al., 2023). A combination of micro and macrosimulations has also been utilized by some empirical studies under this review. In particular, CGE (Computational General Equilibrium) models are used to capture complex interactions simultaneously in the entire economy and the models are often linked to a micro module either through a micro-macro sequence or the other way around (Chitiga-Mabugu et al., 2025; Connolly et al.,

2024). UBI which is inherently a redistribution mechanism (Daruich & Fernandez, 2024) can only be fully analysed through simulations. A host of indicators can therefore be measured and often includes earnings, consumption, employment, savings, taxes, wages, poverty, inequality, inflation, government expenditures, and GDP growth among others giving a rich picture of the welfare effects of a UBI policy (Daruich & Fernandez, 2024).

Across 23 simulations, a consistent theme emerges: UBI has the potential to reduce poverty and inequality, but the magnitude and sustainability of these outcomes depend heavily on design parameters, financing mechanisms, and contextual differences. Microsimulations capture all 5 UBI definitional features and it is the UBI size that nominally determines the depth of impact on poverty, inequality, and costs. Affordability, however, is context-driven and depends on the mechanism within the policy design. A budget-neutral scenario is usually the most sought-after financing mechanism, but this influences UBI generosity. Reed et al. (2023) found that a lower level UBI that is designed to be near fiscally neutral is possible in the United Kingdom. In the Netherlands and Belgium, varying UBI size indicates potential levers in the existing tax-benefit system to achieve budget-neutrality, and these include for example abolishing certain social allowances and tax benefits that will not contribute to poverty reduction (Aerts et al., 2023). Studies explored different financing mechanisms - how much taxes need to be raised and which tax type (direct or indirect, progressive or flat), determining the effective marginal tax rates for individuals or households. Adding a layer of complexity, but is often the most important consideration, is the impact of the marginal tax rates on the distribution of market incomes in the economy. This is the distributional impact of UBI and what this means for income inequality is different from one country to another.

Labour market responses are mediated by multiple factors, including marginal tax rates, household heterogeneity, existing labour market conditions, prevailing poverty, and the income effect. Raising marginal tax rates for net beneficiaries can help contain UBI costs but may dampen work incentives (Connolly et al., 2024; Goderis & Vlekke, 2023; Schubert, 2018; Widerquist, 2017). A notable behavioural dynamic is the income effect, where increased disposable income may reduce work effort, if leisure is viewed as a normal good, although this is moderated by the individual's poverty situation (Bhorat & Köhler, 2025; Lee, 2025; Mideros & O'Donoghue, 2015). Importantly, high unemployment environments tend to diminish concerns over work disincentives (Bhorat & Köhler, 2025), and household-specific characteristics or heterogeneity play a crucial role to employment responses (Aerts et al., 2023).

Effects on consumption suggest that UBI typically raises spending among low-income groups due to having higher MPC compared to their high-income counterparts (Connolly et al., 2022; Magnani & Piccoli, 2020). But there is evidence of restraint when deciding what to spend on showing responsible consumption given the size of the UBI, and a higher amount tend to increase spending on perceived desirable or pleasurable items such as education, recreational activities, and travel (Garcia-Murillo & MacInnes, 2021). Smoothing of consumption has also been observed (Daruich & Fernandez, 2024; Lustig et al., 2023) where there are imperfect capital markets such as constraints in credit and insurance.

The complex interplay of variables extends to differences between high-income countries and middle to low-income countries. In high income countries, research tend to focus on employment effects, cost of implementation and redistributive impact of UBI. Because they are huge welfare states, their complex tax-benefit systems - numerous social transfers, tax rules, benefits and allowances with different means-test approaches – lead to outcomes that present trade-offs for policymakers (Aerts et al., 2023; Goderis & Vlekke, 2023; Reed et al., 2023; Schubert, 2018; Spies-Butcher et al., 2020). Luduvice (2024) illustrated a complex trade-off by simulating the replacement of the U.S. social benefits system with a UBI policy through two counterfactual scenarios, one involving a budget-neutral reform, and the other a more expansive reform featuring a monthly transfer of USD 1,000. This large UBI resulted to larger positive welfare gains, but negative on other variables such as employment, consumption, and aggregate output. Daruich & Fernandez (2024) added intergenerational linkages to macroeconomic effects by calibrating for parental investments on their children which provided more nuance understanding to long term UBI impacts. But Magnani & Piccoli (2020) found less or acceptable trade-off where a UBI policy combined with a flat tax rate led to increased national consumption, thereby stimulating aggregate demand and generating positive effects on both real GDP and employment. Furthermore, the decline in the unemployment rate contributed to additional gains by reducing poverty and income inequality (Magnani & Piccoli, 2020).

In middle- and low-income countries, similar concerns around policy design, funding, and redistribution persist, but poverty alleviation emerges as a prominent concern. Here, the notion of welfare is broader, with UBI being an economic growth enhancing measure in its own right (Davala et al., 2015). Nevertheless, the high tax burden renders universal implementation unfeasible (Caamal-Olvera et al., 2022; Chitiga-Mabugu et al., 2025; Enami et al., 2023; Jara & Palacio Ludeña, 2024; Lustig et al., 2023). Targeting rather than universal may work (Lustig et al., 2023), as well as considering other sources of

financing by addressing the narrow tax base. These include reducing tax evasion and generating new revenues by removing special provisions of the tax code that enable exemptions, deductions, discretionary actions by tax authorities, other means of tax credits to corporations, as well as generating funding from reduction of government subsidies (e.g. fuel subsidies) and redistributing royalties and windfall revenues (Jara & Palacio Ludeña, 2024).

Factors, pathways, and mechanisms

Overall, this review finds that while empirical studies have explored UBI outcomes and effect sizes in specific contexts, there is no consensus on a pathway for implementation, underscoring the need for context-specific assessment and design. Aerts et al. (2023) likens understanding of the potential outcomes of UBI to an iceberg - requiring to look beyond the simple concept of an unconditional payment (the "tip of the iceberg") to the complex interplay of level, design choices, and the specific context of the existing system (the "murky mass below the sea line"). The findings are laid out in Tables 5, 6 and 7, in a thematic format, along with a few more observations. This will provide a guide of the considerations and interaction of variables observed by the 38 empirical studies, helping one navigate into the murkiness of understanding UBI and its implications in one’s own environment.

Table 5

Factors to UBI Outcomes

Factors	How UBI shapes or moderate outcomes	Outcomes	Reference
UBI generosity (payment size)	Higher UBI payment has higher impact on poverty reduction but also comes with higher fiscal costs.	Poverty	Aerts et al. (2023) Arcarons et al. (2014) Caamal-Olvera et al. (2022) Chitiga-Mabugu et al. (2025) Connolly et al. (2022) Daruich & Fernandez (2024) Enami et al. (2023) Garcia-Murillo & MacInnes (2021) Goderis & Vlekke (2023) Lee (2025) Luduvice (2024) Lustig et al. (2023) Magnani & Piccoli (2020) Martinelli (2020) Mideros & O'Donoghue (2015) Reed et al. (2023) Schubert (2018) Spies-Butcher et al. (2020) Widerquist (2017)
Existing tax and benefit system (welfare state structure)	How a UBI is introduced alongside or as a replacement for existing programmes influences the overall cost, potentially with savings from replacing other benefits, and the marginal tax rates faced by individuals. The complexities and potential inefficiencies in the existing system influence the observed gains from simplification.	Cost of UBI	Aerts et al. (2023) Arcarons et al. (2014) Browne & Immervoll (2017 Caamal-Olvera et al. (2022) Chitiga-Mabugu et al. (2025) Daruich & Fernandez (2024) Enami et al. (2023) Goderis & Vlekke (2023) Lee (2025)

Factors	How UBI shapes or moderate outcomes	Outcomes	Reference
			Luduvice (2024) Martinelli (2020) Magnani & Piccoli (2020) Reed et al. (2023) Schubert (2018) Spies-Butcher et al. (2020) Widerquist (2017)
Marginal tax rate	This is the tax rate faced by net beneficiaries because of an increase in market income. A higher marginal tax rate for net beneficiaries reduces the net cost of UBI but can potentially affect work incentives.	Labour market	Connolly et al. (2022) Goderis & Vlekke (2023) Schubert (2018) Spies-Butcher et al. (2020) Widerquist (2017)
Labour market conditions, set-up costs for work	Labour composition such as the proportion of jobless households and part-time workers, and access to and opportunities in the labour market, including demand limitations, affect whether a person can work as much as they want or need. Set-up cost for work, such as commuting time, can be a source of labour supply friction. A context of extreme unemployment with structural causes can explain short-term and long-term labour market effects from transfers.	Labour market	Aerts et al. (2023) Bhorat & Köhler (2025) Chitiga-Mabugu et al. (2025) Luduvice (2024) Mideros & O'Donoghue (2015b) Salehi-Isfahani & Mostafavi-Dehzooei (2018)
Country GDP, country income classification	The overall economic output of a nation is used as a benchmark to express the cost of UBI relative to the economy's capacity. This determines the size of social welfare spending and subsidies. The income category of the country (low-income, lower middle, upper middle, or high-income) determines the country-specific poverty line which is a factor influencing the need for income floors and the feasibility of funding them. Countries with higher baseline social spending are more likely to have viable scenarios. Low-income countries often have very low	Cost of UBI	Chitiga-Mabugu et al. (2025) Enami et al. (2023) Lustig et al. (2023) Widerquist (2017)

Factors	How UBI shapes or moderate outcomes	Outcomes	Reference
	baseline spending and struggle to fund even modest transfers.		
Household structure and characteristics	Heterogeneity of households (single vs. couple), individuals (skill level - low/high) and dependency ratio (children under 18, elderly over 64) - These characteristics influence how different tax-benefit rules affect disposable incomes and labour supply decisions.	Labour market	Browne & Immervoll (2017) Goderis & Vlekke (2023) Jones & Marinescu (2018) Luduvice (2024) Mideros & O'Donoghue (2015a) Schubert (2018)
Income effect, utility maximization	An increase in disposable income makes leisure more affordable, potentially leading individuals to choose to work less.	Labour market	Goderis & Vlekke (2023) Guner et al. (2023) Mideros & O'Donoghue (2015) Schubert (2018)
Consumption propensities	The varying propensity to save/consume across different income groups is a crucial factor to income inequalities. Higher-income individuals tend to exhibit a greater propensity to save, whereas lower-income groups, particularly those lacking liquid assets, display a higher propensity to consume. It is also likely that lower-income individuals are expected to prioritize basic needs and show restraint in various spending categories. Higher-income individuals may already own large items like houses or cars, making further purchases less necessary	Income inequality, Consumption	Chitiga-Mabugu et al. (2025) Connolly et al. (2024) Garcia-Murillo & MacInnes (2021) Kozminski & Baek (2017) Kueng (2018) Magnani & Piccoli (2020)
Poverty status	Effects differ for poor vs. non-poor individuals, especially regarding the assumption of leisure as a normal good (income effect). The prevalence of poverty among specific groups (children, migrants, elderly, single parents) is also factor that influences the relative effectiveness of different policies and the potential impact of a UBI on these groups.	Poverty, Labour market	Caamal-Olvera et al. (2022) Davala et al. (2015) Goderis & Vlekke (2023) Mideros & O'Donoghue (2015)

Factors	How UBI shapes or moderate outcomes	Outcomes	Reference
Population size and demographics	The number of households and the average size, and composition (adults and children) can determine the tax-benefit endowment. Population dynamics also play a role. An ageing population, characterised by a declining proportion of working-age individuals, is expected to alter the balance between contributors (taxpayers) and recipients of UBI, thereby affecting the sustainability of the policy over time.	Labour market, Cost of UBI	Arcarons et al. (2014) Gan (2019) Widerquist (2017)
Structural socioeconomic circumstances	Complex socioeconomic conditions influence how people perceive and plan to use additional income such as UBI, often prioritizing necessities, debt repayment, or achieving larger goals and security (e.g. housing and savings).	Poverty, Consumption	Caamal-Olvera et al. (2022) Flynn et al. (2023) Flynn et al. (2024) Garcia-Murillo & MacInnes (2021) Kim et al. (2024) Nichols et al. (2025)
Underlying inequality in the economy	The distribution of market income across the population determines how much of the UBI grant is clawed back through taxes for different income groups. The level of inequality in the economic environment is a key factor to the optimal UBI design and outcomes of reforms.	Income inequality, Cost of UBI	Guner et al. (2023) Widerquist (2017)
Revenue neutrality requirement	This means government revenues remain fixed, or no deficit is generated, is often the sought-after financing scenario for UBI. It is related to budget neutrality wherein a UBI reform will not change the pre-existing budget balance.	Cost of UBI	Aerts et al. (2023) Browne and Immervoll (2017) Martinelli (2020) Magnani & Piccoli (2020) Schubert (2018)

Factors	How UBI shapes or moderate outcomes	Outcomes	Reference
Targeting vs. Universality:	Universal transfers require distributing resources across the entire population, making generous income floors prohibitively expensive in terms of required tax increases. Targeted transfers concentrate resources on the poor, making it more feasible to reach or exceed a specific income floor for that group with smaller overall expenditures and thus smaller required tax increases, increasing viability in some countries. However, universality ensures that benefits reach the poorest populations efficiently, overcoming issues with targeting and monitoring costs that are present in existing conditional programmes.	Poverty, Cost of UBI	Caamal-Olvera et al. (2022) Lustig et al. (2023) Martinelli (2020)
Activation policies	This refers to interventions such as job search assistance and training programmes designed to improve employment opportunities and workforce participation. Implementing UBI plus active labour policies may have differing short-term and long-term outcomes.	Labour market	Kangas et al. (2019) Riutort et al. (2023)
Personal values and beliefs	Deep-seated personal values and beliefs, such as those related to the morality of spending state support or the stigma associated with certain goods (like drugs/alcohol), act as restraining factors. Beliefs about the value of education or having children also play a role. In contexts where work holds strong cultural or social value, prevailing attitudes may mitigate potential negative effects of UBI on labour supply. The role of the environment characterised by a strong work ethic should therefore be taken into account in assessing labour market responses.	Poverty, Consumption, Labour market	Garcia-Murillo & MacInnes (2021) Lee (2025)

Factors	How UBI shapes or moderate outcomes	Outcomes	Reference
High levels of informality and weak data infrastructure	For countries having a large share of the labour force working informally, this is a critical factor because informal workers often do not contribute to social security and absent in social registries. Weak data infrastructure affects the reach and design of social transfers making informal workers "hard-to-reach" and can hinder effective implementation. Universality of transfers overcomes these constraints.	Poverty	Jara & Palacio Ludeña (2024)
Imperfect capital markets	The existence of imperfect credit and insurance markets means individuals cannot fully borrow against future income or insure against shocks. This makes the consumption smoothing and minimum standard of living benefits of UBI particularly valuable in this context.	Poverty, Consumption	Daruich & Fernandez (2024) Salehi-Isfahani & Mostafavi-Dehzooei (2018)
Gender	Gender inequalities in formal employment and care work are also factors. Thus, for women, the marginal utility of paid labour can be lower than for men.	Labour market	Jones & Marinescu (2018) Mideros & O'Donoghue (2015)
Regional economy	Whether the UBI is funded externally or internally to the region is a critical factor. Externally funded UBI provides an unambiguous stimulus. The degree of fiscal decentralization, the level of devolved tax and spending powers, available to a region determines the feasibility of an internally funded regional UBI. Overall, how UBI impacts play out depend on the specific characteristics of the regional economy and whether there is a wage push or restraint because of UBI. For example, the degree of openness to trade and migration, the sensitivity of trade flows to price changes, the sensitivity and scale of migration flows to wages.	Labour market, Cost of UBI	Connolly et al. (2022)

Table 6

Pathways to UBI Outcomes

Pathways	How UBI moves from input (intervention) to outcome	Outcome	Reference
Supplementation of direct income	The UBI acts as a direct supplement to existing market incomes. The allocation of this income can then affect the perceived trade-off between leisure, paid labour, and other activities like care work. For individuals below the income floor (or the poverty line in targeted scenarios), receiving a transfer increases their consumable income, directly reducing or eliminating their poverty gap and potentially lifting them out of poverty.	Poverty, Labour market	Aerts et al. (2023) Arcarons et al. (2014) Browne & Immervoll (2017) Caamal-Olvera et al. (2022) Chitiga-Mabugu et al. (2025) Connolly et al. (2022) Enami et al. (2023) Garcia-Murillo & MacInnes (2021) Jara & Palacio Ludeña (2024) Lustig et al. (2023) Mideros & O'Donoghue (2015) Spies-Butcher et al. (2020) Widerquist (2017)
Redistribution	It is both a pathway and mechanism. Revenue raised through tax reforms is directed towards funding the UBI payment. A progressive reform creates a flow of resources from higher-income groups to lower-income groups. This pathway directly demonstrates how changes in tax and transfer policies alter the income distribution and consequently impact poverty levels and tax burdens.	Poverty, Income inequality, Cost of UBI	Aerts et al. (2023) Browne & Immervoll (2017) Caamal-Olvera et al. (2022) Connolly et al. (2024) Daruich & Fernandez (2024) Enami et al. (2023) Goderis & Vlekke (2023) Jara & Palacio Ludeña (2024) Martinelli (2020) Lustig et al. (2023) Reed et al. (2023)

Pathways	How UBI moves from input (intervention) to outcome	Outcome	Reference
Providing financial security/stability, consumption smoothing	UBI enhances liquidity, financial security, and income stability, enabling individuals to make more informed decisions in areas such as education, healthcare, and employment. This security can reduce worry and potentially free up mental resources, allowing individuals to consider long-term goals. Wage uncertainty and "out-of-work" shocks (such as unemployment, disability, or automation redundancy) are factors creating income volatility that can be overcome by UBI. It also allows smoothing consumption over time which is a key benefit.	Poverty, Consumption, Labour market	Arcarons et al. (2014) Davala et al. (2015) Daruich & Fernandez (2024) Garcia-Murillo & MacInnes (2021) Lee (2025)
Aggregate stimulus	Increase in aggregate demand (due to consumption stimulus) has multiplier effects in the economy. It influences employment and GDP. Increase in real GDP can lead to reduction in unemployment rate (as capital stock is exogenous and increased GDP requires more labour). UBI's impact on mental health and reduced public health spending will yield to more resources (e.g. taxes) which are economic returns of investments.	Labour market, Cost of UBI	Arcarons et al. (2014) Chitiga-Mabugu et al. (2025) Connolly et al. (2022) Magnani & Piccoli (2020)
Simplified access	UBI establishes a direct entitlement. This pathway simplifies the process of receiving support compared to complex, means-tested systems. By simplifying the system and making the income transfer universal and unconditional, a UBI also inherently addresses the issue of non-take-up associated with complex, application-based allowances.	Poverty	Goderis & Vlekke (2023) Jara & Palacio Ludeña (2024) Martinelli (2020) Reed et al. (2023)
Constraint alleviation	UBI can help alleviate financial constraints by facilitating savings, enabling investment, and improving access to credit. It can also help cover transaction costs (e.g., transportation, job search) and opportunity costs. By relieving these constraints, the transfer can potentially facilitate participation in paid labour. This pathway also suggests the grant allows recipients to search or prepare for business more effectively	Poverty, Labour market	Bhorat & Köhler (2025) Mideros & O'Donoghue (2015a)

Pathways	How UBI moves from input (intervention) to outcome	Outcome	Reference
Investment adjustment	Changes in firm profitability resulting from the UBI's impact on wages and demand affect desired capital stock levels. Investment responds to the gap between desired and actual capital, leading to gradual adjustments in the capital stock over time, which further influences the supply side and total output.	Labour market, Cost of UBI	Connolly et al. (2024)

Table 7

Mechanisms within UBI Outcomes

Mechanisms	Underlying causal process or behavioural/structural change triggered by UBI that explains why the outcome occurs	Outcome	Reference
Financing mechanisms	The choices of how a real-world UBI is funded determines the marginal income tax rates. These choices include implementing a flat tax rate, eliminating tax concessions, and increasing consumption taxes. The choice can also be from the use of existing social spending or subsidies. Tax reform is a factor that would significantly influence the scheme's progressivity and distributional impact.	Cost of UBI	Aerts et al. (2023) Browne & Immervoll (2017) Chitiga-Mabugu et al. (2025) Daruich & Fernandez (2024) Enami et al. (2023) Gan (2019) Luduvice (2024) Magnani & Piccoli (2020) Martinelli (2020) Reed et al. (2023) Spies-Butcher et al. (2020)

Mechanisms	Underlying causal process or behavioural/structural change triggered by UBI that explains why the outcome occurs	Outcome	Reference
Income floor and automatic stabilization mechanism	The UBI payment establishes a guaranteed, unconditional income floor. UBI directly addresses material deprivation and ensures a basic level of subsistence. This mechanism is the primary driver of the reduction in absolute and relative poverty. However, if UBI is included in means-testing for other social benefits, poverty reduction may not be attained. Also, if someone's income drops (e.g., due to job loss), their UBI payment remains constant, cushioning the income shock without requiring a new application or eligibility test to benefit. This contrasts with means-tested benefits that do not adjust automatically to income changes.	Poverty	Arcarons et al. (2014) Browne & Immervoll (2017) Caamal-Olvera et al. (2022) Chitiga-Mabugu et al. (2025) Enami et al. (2023) Goderis & Vlekke (2023) Martinelli (2020) Reed et al. (2023)
Fiscal constraints	Implementing UBI requires significant fiscal resources. Countries facing constraints from a narrow tax base due to tax evasion, revenue losses from exemptions and deductions, and reliance on potentially volatile natural resource revenues, face these factors for the feasibility and design of financing mechanisms.	Cost of UBI	Arcarons et al. (2014) Chitiga-Mabugu et al. (2025) Enami et al. (2023) Jara & Palacio Ludeña (2024)
General equilibrium	Refers to economy-wide changes given the interaction of variables or adjustments from the demand side, supply side, prices, wages, output, growth, and distributional outcome. An example is the general equilibrium outcome of increased labour demand because of higher consumption effect from UBI which offsets the negative labour supply effect. Another example is in intergenerational linkages wherein a general equilibrium price adjustment is possible. The changes in factor endowments (labour supply by skill and capital) trigger price adjustments (wages, interest rates) to restore market equilibrium. These price changes then feed back into	Income inequality, Consumption , Labour market, Cost of UBI	Bibler et al. (2023) Chitiga-Mabugu et al. (2025) Daruich & Fernandez (2024) Schubert (2018)

Mechanisms	Underlying causal process or behavioural/structural change triggered by UBI that explains why the outcome occurs	Outcome	Reference
	individual decisions acting as a mechanism that can partly offset or amplify initial effects.		
Unwinding targeting, eliminating conditionality	By loosening strict means-tests and removing non-income-based conditions, the system includes more people, reducing the exclusion of those who might be eligible but do not receive benefits due to conditionality or complexity. This mechanism increases effective eligibility, redistribution, and poverty reduction.	Poverty, Income inequality	Aerts et al. (2023) Arcarons et al. (2014) Jara & Palacio Ludeña (2024) Spies-Butcher et al. (2020)
Substitution mechanism	This mechanism relates to the change in the relative price of leisure compared to consumption (funded by labour income). A lower marginal tax rate increases the reward for working more, substituting leisure with work. A higher marginal rate decreases this reward, substituting work with leisure.	Labour market	Goderis & Vlekke (2023) Guner et al. (2023) Schubert (2018)
Flat tax efficiency	A flat tax system, replacing a progressive one, is presented as a mechanism that can stimulate labour supply and reduce tax evasion. The removal of the progressive system removes associated efficiency losses. A flat tax rate serves as the structural process by which funds are collected to cover the basic income costs.	Income inequality, Cost of UBI	Gan (2019) Magnani & Piccoli (2020)
Demand composition mechanism	The redistribution of income changes the relative demand for goods and services based on the consumption patterns of different income groups. If lower-income households tend to consume less labour-intensive goods on average, this mechanism can lead to a fall in aggregate employment even if GDP slightly increases. The differential impact on sectors (e.g., agriculture/food vs. manufacturing/mining) is a mechanism that will reflect in the structural differences in production processes (input use) and total economic output.	Consumption, Labour market, Cost of UBI	Chitiga-Mabugu et al. (2025) Connolly et al. (2022)

Mechanisms	Underlying causal process or behavioural/structural change triggered by UBI that explains why the outcome occurs	Outcome	Reference
Empowerment	Financial independence granted by the UBI can emancipate individuals from dependency, such as young people remaining at home or women depending on partners. It also empowers poor population to make choices that will improve their economic lives.	Poverty, Consumption , Labour market	Arcarons et al. (2014) Davala et al. (2015)
Cancellation mechanism	The core mechanism explaining the difference between gross and net cost is the cancellation effect that occurs when the government gives money (UBI) and immediately takes some back from the same person or household (tax). This mutual cancellation reduces the "real redistributive burden" or "net cost" to just the amount transferred from net contributors to net beneficiaries plus transaction costs	Cost of UBI	Widerquist (2017)
Mechanical tax changes (automatic mechanism)	Changes in income or consumption levels resulting from the transfers mechanically alter the amount of taxes paid even at constant rates. For example, if a transfer increases income, direct taxes (if applicable) or consumption taxes might increase because the tax base has changed. This is an automatic mechanism affecting budget neutrality.	Cost of UBI	Lustig et al. (2023)
Risk shifting	The provision of a stable and regular payment helps mitigate income volatility, particularly for individuals engaged in precarious or unstable forms of employment. This mechanism shifts some of the financial risk associated with unstable incomes from individuals and households to the state.	Poverty, Income inequality	Spies-Butcher et al. (2020)
Firm response to wage changes	As wage levels adjust because of the interaction of UBI and taxes, firms alter their demand for labour inputs, influencing employment levels by skill type.	Labour market	Schubert (2018)

Mechanisms	Underlying causal process or behavioural/structural change triggered by UBI that explains why the outcome occurs	Outcome	Reference
Value of existing welfare state	An existing welfare state that is highly valued by poor households because the transfers provide a crucial safety net and supplement income significantly for the group, is the mechanism behind the large welfare losses when the system is eliminated or replaced by UBI.	Poverty, Cost of UBI	Browne & Immervoll (2017) Guner et al. (2023)
Pro-poor or regressive income redistribution	Replacing targeted benefits (like social assistance) with a UBI redistributes resources away from the poorest and spreads them across the population, potentially increasing poverty. Conversely, replacing tax benefits (which often disproportionately benefit higher earners) with UBI can lead to pro-poor redistribution because the universal amount is higher than the value of the lost tax benefit for low earners, while higher earners lose more from the tax benefit abolition.	Poverty, Income inequality	Aerts et al. (2023) Browne & Immervoll (2017)

IV. Synthesis

This review contributes to the existing body of knowledge on UBI by systematically consolidating analytical elements from the perspective of economic outcomes, offering a comprehensive map of the factors, pathways, and mechanisms at play. Most UBI systematic reviews and empirical studies are about outcomes or effects but do not probe deeply or provide focus on underlying factors, pathways, and mechanisms, or would do so but in a narrow or limited extent (Hasdell, 2020). In consolidating the elements, this review also provides a conceptual framework of how a UBI intervention will interact at the individual level, at the household level and then at the macro-level (see Figure 2). Unlike the systematic reviews already being undertaken on UBI outcomes and effects, it is deliberate in this review to only include studies with pure UBI or near-UBI interventions, in other words minimum of four definitional features of UBI must be met, in order to be as precise as possible in developing a conceptual framework that is unambiguous when used to study economic outcomes.

This review has found the considerable complexity of implementing UBI in any context. While several empirical studies indicate positive outcomes, they also highlight significant trade-offs in UBI design, funding mechanism and distributive impact that will be unique for each context. There is a consensus on the potential positive effects on poverty reduction and financial well-being across the literature. The variables influencing outcomes for the labour market and cost of UBI implementation are also well established in the simulation studies, but results can be varied. Generalizing findings across settings would therefore be overly simplistic. Figures 2 and 3 illustrate the main findings of this review by showing the relationships of the different variables and provide a big picture of the complexity of UBI design and implementation.

Frameworks to navigate relationships and trade-offs

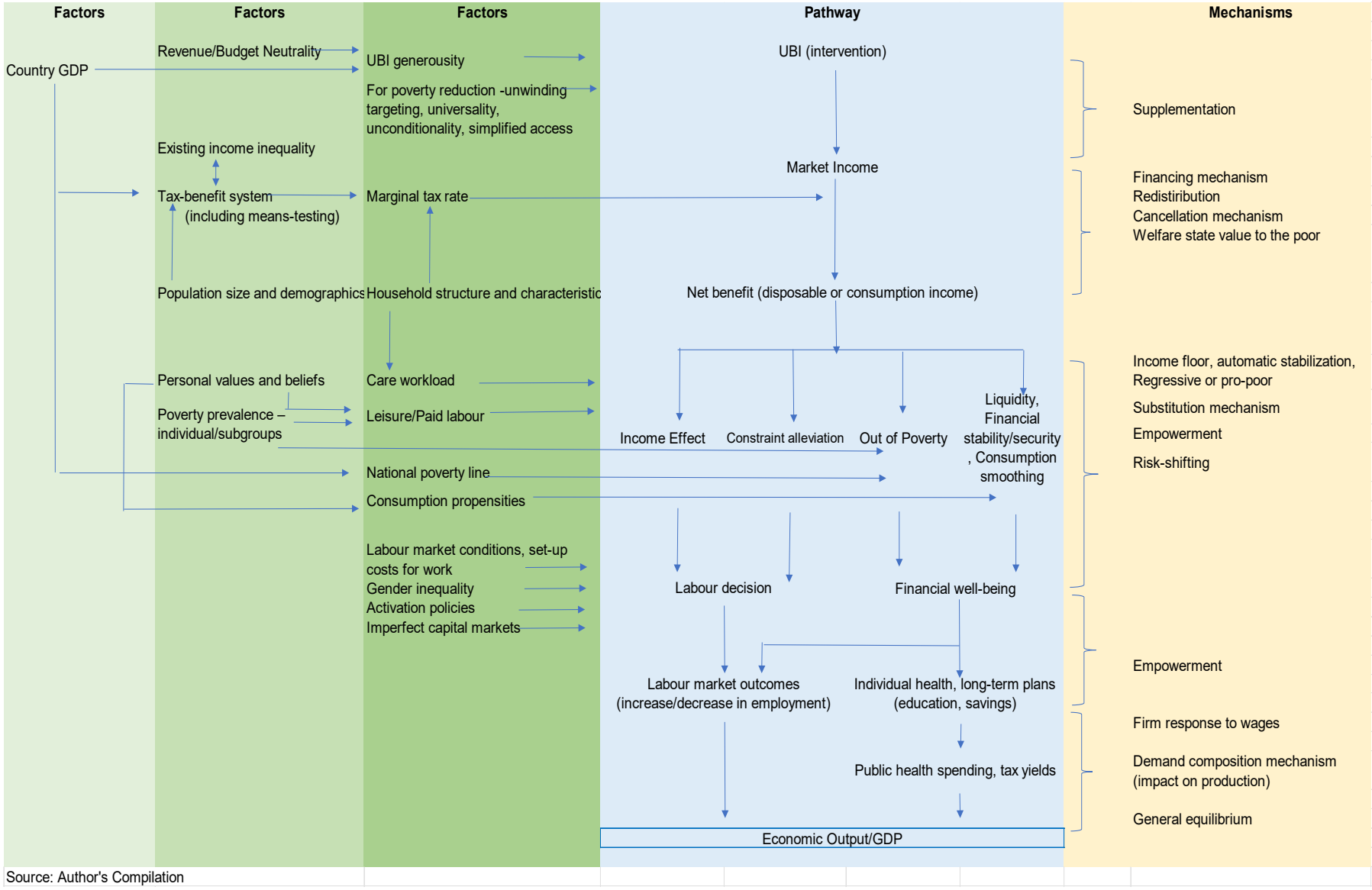
The reviewed studies offered various analytical frameworks and a few implementation frameworks for some of the trade-offs that were gleaned. Martinelli (2020) demonstrated the dilemma of balancing affordability (controlling costs) and adequacy (meeting the needs) and extended this trade-off to a trilemma wherein it may be possible to achieve both affordability and adequacy but will risk losing the benefits of a simplified welfare system through wide coverage (universality), and slashing administrative burden of means testing (unconditionality). Browne & Immervoll (2017) prescribed a decomposition approach in assessing the changes in the tax-benefit systems because country differences are due to the differences in the relative sizes of the tax-benefit mechanisms and their sequential steps. An analytical framework has also been proposed to examine

trade-offs across three key dimensions: generosity, coverage, and progressivity. Progressivity, in this context, refers to the extent to which UBI benefits are distributed across the income spectrum, with a more progressive scheme allocating greater resources to the low-income segments of the population. (Francese & Prady, 2018). Perhaps, the most expansive framework is offered by Gentilini (2020) which has four components: 1) assessment of the performance of existing tax-benefit system; 2) define the goals of the UBI and design the parameters based on the goals; 3) a comparative evaluation of the proposed UBI scheme against the current system, using eight metrics—coverage, degree of progressivity, adequacy of transfers, household incentives and behavioural responses, fiscal costs, financing mechanisms, political economy considerations, and delivery; and 4) evaluation by policymakers. It is recognized that there will be no program that will be optimal on all metrics. As such, some metrics will have more weight than others and these must be clear to policymakers for their consideration (Gentilini, 2020).

A useful guide that reconciles feasibility and implementation is the five feasibility checks of Torry (2023) – “financial feasibility, psychological feasibility, administrative feasibility, behavioural feasibility, and political feasibility” (p.226). It is worth discussing these checks to gain additional perspectives to the review findings. Financial feasibility is well covered by this review, and it simply means how the UBI will be funded. Psychological feasibility refers to whether a UBI policy proposal will pass the public opinion test which Torry (2023) considers is the most challenging one. Administrative feasibility means the UBI implementation will be simple, efficient, and having negligible errors and fraud. Behavioural feasibility refers to long-term outcomes particularly on the income effect and labour responses which can only be predicted through microsimulations and cannot be known in advance. As such, a phased approach in basic income implementation to gradually gain evidence could solve this problem. Finally, political feasibility depends on each country and whether UBI falls within the ideological commitments of the country’s political parties.

Figure 2

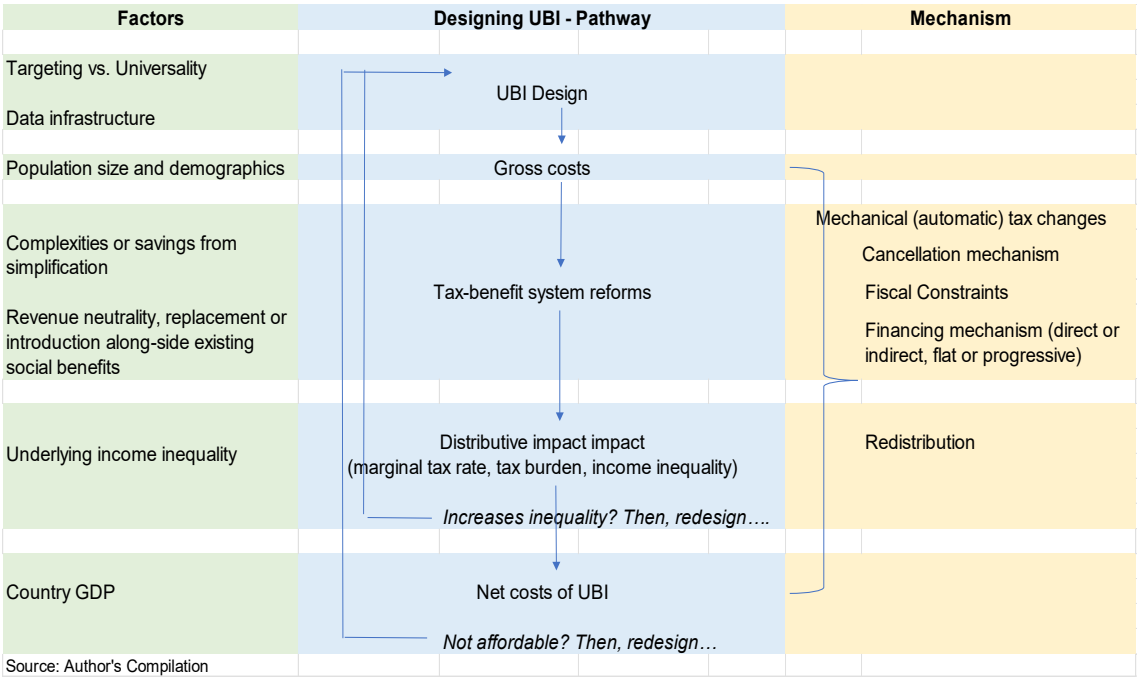
Conceptual Framework of UBI Factors, Pathways, and Mechanisms



Source: Author's Compilation

Figure 3

Iterative Pathway to Designing UBI



Pathway proposals for UBI implementation

Recognizing the complexity and trade-offs, and several iterations in the design process (see Figure 3), specific recommendations for implementing UBI in high income countries have been proposed. Van Parijs & Vanderborght (2017) suggested that jumping to a full UBI may even be irresponsible, and a partial UBI for the adult population which has broad acceptance is a next step. The amount of basic income also does not have to be uniform and may be varied by age. The partial UBI proposal should be such that it prevents a clawback on low-income groups that perpetrates poverty, as well as prevent high marginal tax rate that can negatively impact the labour market. This UBI level will not fully cover what would be considered as meeting the basic needs of an individual living alone but should be adequate to make a real impact (for example, the empowerment effect). This lower level UBI will vary country to country depending on the structure and size of its tax-benefit system but one that can markedly improve the situations of the worse off in the population.

Torry (2023), in the context of the United Kingdom, proposed an option making relatively small changes in the tax-benefit system resulting to a near revenue neutral scenario. The most feasible option is a gradual implementation path, or basic income by cohort, starting with child benefit increase, then a basic income to all eighteen-year-olds which will continue as they grow old, and "each year's new eighteen-year-old cohort being

given basic incomes" (Torry, 2023, p.238). The decomposition approach of Browne & Immervoll (2017) concluded that UBI reforms would need to be introduced in stages. Leaving existing benefits that are highly valued (for example, early retirement pension) to limit the losses for the existing recipients of those benefits. Similar to Van Parijs & Vanderborght (2017), implementing a modest UBI while retaining substantial portions of existing benefits is considered a fiscally feasible approach particularly if the objective is to equitably distribute the gains from globalisation or technological advancement. Browne & Immervoll (2017) also argues for gradual steps to universality, like the cohort-approach of Torry (2023).

It is also worth mentioning that the UBI debate is shifting to the financing mechanism that does not involve taxes, but which is still largely understudied. Based on the theory of functional finance, the central bank and treasury can create money without raising taxes or borrowing, but significant caution is needed because of potential expansionary pressure that causes inflation (Widerquist, 2024). Examples of creating money out of thin air are debt-free sovereign money funds and quantitative easing which have been used to stabilize economies during financial crises and recently used during the covid pandemic as economic stimulus (Sawyer, 2024). Instead of quantitative easing, helicopter money can be introduced which transfers money to the non-financial sector (individuals, households, companies, or government) unlike quantitative easing which transfers liquidity to banks (Mencinger, 2017).

It can be expected that the complexity and trade-offs for UBI implementation have more nuances for middle to low-income countries due to high fiscal costs and the narrow tax base that characterizes these countries. As such, targeting rather than universal may work (Lustig et al., 2023). Basic income support that is restricted to certain categories of the population is nothing new to developing countries. Several forms of unconditional cash transfers have been designed and implemented targeting specific groups such as children, youth, women, elderly, farmers, the unemployed and those living in extreme poverty. The work of Hanna & Olken (2018) exemplified UBI trade-offs by simulating data from Indonesia and Peru, two countries that have targeted and nationwide transfer programs. Their work illustrated how the mechanisms in the tax-benefit system in developed countries may not work for developing countries because of the presence of large informal sectors that are outside the tax data infrastructure. To overcome this, Indonesia and Peru use prediction models relying on proxy means tests to assess eligibility for a range of transfer programmes, but then this comes with inclusion and exclusion errors. To minimize exclusion, raising the eligibility threshold when the funding resources available are fixed, means that transfer generosity is negatively affected.

Thus, for a given total budget the government must decide based on a social welfare function that will present choices or trade-offs between inclusion error, exclusion error, and the level of per-capita social benefits.

Hanna & Olken (2018) also emphasized that the inclusion and exclusion errors inherent in prediction models of proxy means tests violate the horizontal equity principle, which holds that persons having the same relevant conditions must be treated the same, and it is a major limitation for its use. Moreover, they underscore the lack of transparency associated with proxy means test, which opens opportunities for corruption in the process of determining eligible recipients. To address these shortcomings, Hanna and Olken propose other approaches, such as community-based selection and self-targeting. In the case of self-targeting, the structure of the application process is designed in such a way that wealthier individuals are disincentivised from participating, as the perceived benefits do not outweigh the required effort. Although all targeting mechanisms face inherent challenges, Hanna and Olken maintain that, on balance, targeted programmes can still generate welfare gains, particularly in resource-constrained settings.

Banerjee et al. (2022) argues that universality deserves more serious considerations. The reduction in administrative costs and potential improvement in the political economy of redistribution appear to be underappreciated. It also sees UBI as an incremental anti-poverty intervention, and not necessarily replacing benefits on health, education, and nutrition by a single transfer because some developing countries do not necessarily have affordable and decent quality private sector options for these services. The progress in last mile digital payment systems is however very promising, and this will help reduce the delivery cost of cash transfers and will increase the appeal for universality (Banerjee et al., 2019).

Conversion of existing in-kind transfers to cash transfer schemes is another initial step for developing countries. India's Public Distribution System (PDS) which subsidizes staple food through a network of shops is one example of resources or budgets that may be converted to finance UBI instead (Davala et al., 2015). Unlike in-kind transfers, cash is fungible and better aligned to heterogenous needs of households. Unconditional cash transfers also have lower delivery costs than in-kind transfers, and cheaper to monitor because they are unconditional (Haushofer & Shapiro, 2016).

What is less or not known

This review which was set out to uncover clarity towards potential implementation by governments at the national or regional level by analysing and synthesizing economic outcomes, now recognizes that such goal is a step too high. As observed by Yang et al.

(2021) there is still a long way to go for society in fully accepting UBI implementation due to its complexity, and lack of policy environments in both developed and developing nations to enable the pathways. While that is so, this review is successful in following Hasdell (2020) in deconstructing outcomes by identifying various determinants at multiple conceptual levels, thereby integrating individual UBI outcomes to the broader economic and policy environment. This approach has also been useful to uncover other potential pathways and mechanisms but are having less evidence to date, and these are discussed in this section.

Literature that analyses UBI intervention in a regional economy or subnational level is limited. Only Alaska, Barcelona and Scotland have studies included in this review. While subnational studies share many factors and mechanisms with national ones, a few unique factors emerge that have significant economic implications (Connolly et al., 2022, 2024; Riutort et al., 2023). One is whether the regional economy has the political autonomy to set or adjust its tax-benefit system or does it have limited powers to do so. This has implication on whether the UBI will be externally or internally funded by the region as they can have differences in outcomes. Another aspect is that underlying mechanisms of UBI outcomes, particularly the interaction of UBI with the marginal tax rate, can potentially generate migration response. If the UBI policy in the region reduces real wages, it can trigger out migration that reduces population and labour supply which consequently will have impacts on the total economic output of the region. The Barcelona (B-MINCOME) pilot also showed additional layer of complexity when combining the country tax-benefit system with the additional benefit programs provided by that region in accordance with its devolved powers (Riutort et al., 2023). It is obvious that regions and cities within a country have different economic characteristics, and it is not known under what conditions it will make sense for a national government to support a UBI policy of one region and not on another.

Subnational studies may be able to provide community effects (Van Parijs & Vanderborght, 2017), and present more empirical evidence to the positive conceptual impact of UBI on local economic development (Yang et al., 2021). When markets are working, cash transfers lead to increase in local production and provide stimulus to the local economy (Davala et al., 2015). Evidence of local inflationary impacts of cash transfer is thin but indicative of positive spillover effect because even in rural areas where production constraints can be high, supply is not rigid because of inter-connectivity of markets (Handa et al., 2018). A systematic review carried out by Hasdell et al. (2021) specifically examined community-wide effects of UBI and found scant evidence from the

literature, and as such argues that some unanswered questions need to be put through community lens and outcomes to help inform core policy discussions.

In developing countries where regional as well as urban and rural economic disparities are quite pronounced, it is not known whether effect size differentials are strongly indicative of support for regional or rural targeting. Caamal-Olvera et al. (2022) has shown in Mexico that poverty declined faster in rural areas in a UBI policy scenario. In South Africa, with regional poverty differences, a national uniform basic income support may not be adequate to move households out of poverty if the rural region has deep or severe poverty (Chitiga-Mabugu et al., 2025). Overall, it appears that there is a research gap in regional and local community UBI mechanisms as well as urban-rural impact differentials. Developing countries could benefit more from cluster RCTs such as the Madhya Pradesh pilot (Davala et al., 2015) and the 12-year Kenya RCT which is ongoing until 2029 (Haushofer & Shapiro, 2016), wherein scholars can also delve into spillover effects in the local economy and assess mechanisms and their implications for UBI implementation.

In a national or system-wide impacts, mechanisms to understand net costs of UBI are well established, but the literature tends to simplify measurement of social gains in relation to the net cost of UBI or they are absent. Studies should follow Reed et al. (2023) by determining the scale of social gains, for example from health savings through improved financial well-being. Gains from improved education and criminal justice outcomes are also examples of social gains that could be quantified. The BIG-LEAP pilot in Los Angeles (Kim et al., 2024) showed positive outcomes on food security and safety from intimate partner and community violence. Calculating social gains and including these in determining the net costs of UBI will shed light on additional pathways and funding mechanisms.

In middle to low-income countries, the potential pathways are established in the literature for broadening the tax base, for example by addressing informality, tax evasion, tax exemption and tax loopholes and tackling these can support UBI implementation by reducing the burden of setting new or higher taxes that may not be viable economically and politically (Enami et al., 2023). But this review found that studies are not calculating the scale and using these tax revenue values or estimations to simulate the financing of UBI and determine its distributive impact. This also implies though that policymakers will face trade-offs in government social spending (whether for poverty reduction, education, nutrition, or public health) when gains from broadening the tax base are realized. Pilots and experiments in developing countries have shown positive outcomes because

financing feasibility came from external financing (Torry, 2023). There is clearly a need for analytical frameworks and simulation studies that use a financing mechanism using estimations of at least one or more pathways of broadening the tax base.

Overall, this review supports what Torry (2023) exemplified in the UK, and that “rather than discussing the implementation of Basic Income, we need to discuss the implementation of particular basic income schemes in particular contexts” (p.605). Although common themes in factors, pathways, and mechanisms emerge across countries, outcomes are shaped by each nation’s unique conditions and characteristics. It is particularly important that these context-specific studies or implementation designs do not overlook that a broad conceptual framework is necessary (see Figure 2) for a comprehensive set of outcomes.

V. Conclusion

The aim of this systematic literature review is to evaluate empirical studies on UBI that will present an overview of its effectiveness and provide a synthesis of factors, pathways, and mechanisms through which UBI achieves economic impacts. This review avoided the multidimensionality or battery of outcomes reviewed by other UBI researchers so that economic effects will not be inadvertently diluted in the process. Four economic questions were first delved into. What is the impact of UBI on reducing poverty and income inequality? What is the impact on income volatility and financial well-being of individuals? What are the labour market outcomes of a UBI implementation? What is the indicative cost of implementing UBI on a national or regional scale? Underlying these economic outcomes are answers to the central questions of this review: what shapes or moderate the outcomes (factors); how does UBI move from intervention to outcome (pathway); and what are the underlying processes and changes triggered by UBI that explains why the outcome occurs (mechanisms) (Denyer et al., 2008).

This review finds that, in relation to the main questions on the factors, pathways, and mechanisms, the literature reveals the considerable complexity of implementing UBI in any context. Generalizing findings across settings would be overly simplistic. Whether in high-, middle-, or low-income countries, considering UBI to achieve economic objectives requires country-specific assessment and careful design. This is due to contextual differences in country economic output size, demographics, levels of poverty and inequality, labour market characteristics, and tax-benefit systems. These contextual factors affect outcomes firstly at the individual level, then secondly will interact with household characteristics and dynamics, leading to individual or household behavioural responses that will be aggregated to determine macroeconomic impacts.

While several empirical studies indicate positive outcomes (poverty reduction, consumption and financial well-being) and financial feasibility, they also highlight significant trade-offs and structural shifts that can complicate political consensus such as the tension between poverty reduction and increased taxation, the trade-off between UBI generosity and coverage (universality), and balancing the changes in the tax-benefit system and its distributive impact (inequality). Additionally, the limited coverage, duration, and benefit levels of UBI pilots, coupled with the absence of robust longitudinal data, have hindered a full understanding of UBI's actual and long-term impacts (Hochman et al., 2024). Much of the literature relies on microsimulation and macroeconomic models to predict short-term behavioural responses and long-term outcomes. Although diverse due to country-specific data and goals, these models can

offer valuable analytical frameworks when adapted to new settings, particularly in illuminating potential mechanisms and trade-offs. Overall, this review finds that while empirical studies have explored UBI outcomes and effect sizes in specific contexts, there is no consensus on a pathway for implementation, underscoring the need for context-specific assessment and design.

A conceptual framework has been developed through this review combining analytical elements that can guide scholars in developing analytical frameworks for UBI microsimulations using country-specific data and characteristics. Surely, microsimulation outcomes are only predictive, and outcomes will be different because actual macroeconomic variables are dynamic and there will always be unforeseen factors. Nevertheless, the conceptual framework that emerged from this review is indicative of what is already known and what elements can be difficult to quantify (for example – personal values and beliefs and welfare state value to the poor). The findings of this review must also be supplemented with additional tests for psychological, administrative, behavioural, and political feasibility (Torry, 2023)

This review recommends that future studies investigate UBI at regional or subnational levels whether high-, middle- or low-income country. This is highly relevant given that there are contexts with autonomous or semi-autonomous regional governance. What are the determinants to outcomes in a regional economy? What are the mechanisms of a UBI regional implementation for local economic development? In middle to low-income countries, where urban and rural regions can have wide economic disparities - what are the potential pathways for UBI to bring rural people who are in deep poverty to move above the national poverty lines? On financing UBI, what are the effects of quantifying social gains on the net cost of UBI? What is the distributional impact of a specific strategy that addresses the narrow tax base and using such to finance a UBI policy?

The relevance of understanding the factors, pathways, and mechanisms will be apparent in the continued search for economic solutions in both developed and developing countries. UBI is expected to be ever-present in the debate concerning the reform of social welfare systems in advanced economies. Support for this has come from across the political divide, including both the left and the right-wing parties. In developing countries, the idea of UBI resonates with the World Bank and other international development assistance organizations (Ghatak & Maniquet, 2019). Banerjee et al. (2019) argues that a sustainable UBI program will raise the incomes of the poor, and “there are good reasons why UBI may have something important to contribute to the growth process in poor countries” (p.966). Ideally, country specific studies should capture

as much as they can of these three elements – factors, pathways, and mechanisms, so that recommendations of country specific schemes become complete and conclusive as they can be.

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Appendices

Appendix A

Pilot Studies Information and Outcomes

Country	Measured Indicators	Outcomes	Methods	Reference
India (Madhya Pradesh)	Multidimensional including economic indicators - work hours, income activity, debt, savings and ability to cope with shocks/hazards	Increase in earned incomes coming from increased work hours for own account, increase productive asset holdings and purchases for own economic activity; increase in debt and distressed borrowing are less compared to control group; savings increased higher than control group	Mixed Method (RCT/Qualitative)	Davala et al. (2015)
Finland	Employment rate, days in employment, earnings, taxable income, and well-being indicators	No effect on employment on the first year; modest effect after the second year but the association lost ground when controlling for background variables; positive effect on well-being	Mixed Method (RCT/Qualitative)	Kangas et al. (2019)
Spain (Barcelona)	Multidimensional including food insecurity, housing insecurity, and employment	Significant reduction in severe material deprivation, food and housing insecurities; slightly reduced participation in the labour market; did not stimulate entrepreneurship or increased the probability of finding a job.	Mixed Method (RCT/Qualitative)	Riutort et al. (2023)

Country	Measured Indicators	Outcomes	Methods	Reference
United States (Stockton, New Jersey)	Multidimensional including income volatility (month-on-month income), financial well-being (ability to cover $400 emergency expense, and CFPB Financial Well-Being Scale 2015, and employment (participation rate, work hours)	Income volatility of treatment group is lower than control group (statistically significant in year 1 and not in year 2), but there is continued employment growth compared to control. No significant effect on financial well-being for both groups	Mixed Method (RCT/Qualitative)	West & Castro (2023)
United States (Providence, Rhode Island)	Multidimensional including income volatility (month-on-month income), financial well-being (ability to cover $400 emergency expense, and CFPB Financial Well-Being Scale 2015, and employment (participation rate, work hours)	The guaranteed income helped maintain income stability and ability to cover emergency expenses; both treatment and control groups experienced a significant decrease in unemployment over time	Mixed Method (RCT/Qualitative)	Nichols et al. (2025)
United States (Tacoma, Washington)	Multidimensional including income volatility (month-on-month income), financial well-being (ability to cover $400 emergency expense, and CFPB Financial Well-Being Scale 2015, and employment (participation rate, work hours)	Decreased income volatility; improved ability to save and ability to cover emergency expense, but positive outcomes were not sustained after the pilot; recipients were more likely to be employed full-time throughout the study compared to the control group	Mixed Method (RCT/Qualitative)	Flynn et al. (2024)
United States (Saint Paul, Minnesota)	Multidimensional including income volatility (month-on-month income), financial well-being (ability to cover $400 emergency expense, and CFPB Financial Well-Being Scale 2015, and employment (participation rate, work hours)	Decreased income volatility; improved ability to save and ability to cover emergency expense; effects declined six months after the pilot; employment showed a positive trend throughout the duration of the pilot, and continued to strengthen 6 months after the programme ended.	Mixed Method (RCT/Qualitative)	Flynn et al. (2023)

Country	Measured Indicators	Outcomes	Methods	Reference
United States (Los Angeles)	Multidimensional including income volatility (month-on-month income), financial well-being (ability to cover $400 emergency expense, and CFPB Financial Well-Being Scale 2015, and employment (participation rate, work hours)	Increased ability to save and to cover emergency expense; Recipients were substantially more likely to obtain full-time employment.	Mixed Method (RCT/Qualitative)	Kim et al. (2024)

Appendix B

Policy Programme Study Information and Outcomes

Country	Measured Indicators	Outcomes	Methods	Authors
Iran	Labour force participation and hours of work	No effect on employment; for the bottom 40% of the income distribution, there was also no effect on overall labour supply.	Difference-in-differences (DID)	Salehi-Isfahani & Mostafavi-Dehzooei (2018)
United States (Alaska)	Labour force participation and hours of work	An additional $1,000 dividend reduced worked hours for employed women (average 1.25% hours per week) but not for all women population; increased probability of employment for men (1.7%) as a short-run effect and considered as a labour demand shock; Combining the extensive margin (labour participation - to work or not to work) and intensive margins (changes in the amount of work for those who are already employed), the result is 1.6% labour market contraction in the short run, and 0.8% on an annual basis.	DiD, Temporal Variation (inter-annual), Estimation, Heterogeneity Analysis	Bibler et al. (2023)
United States (Alaska)	Labour force participation and hours of work	No effect on employment yet increases part-time work by 1.8%, and 17% relative to the average part-time rate pre-dividend period; other results - increase in part-time work for married women; no negative labour supply effect on older groups	Synthetic Control Method, DiD, Heterogeneity Analysis	Jones & Marinescu (2018)
United States (Alaska)	Income Inequality - Gini Coefficient, Relative Mean Deviation (RMD), and Thiel's Entropy Index	Income growth reduces inequality, but after 3 decades, inequality increased which may be explained by differences in spending patterns between low income and high-income segments of the population.	Cointegration Analysis (Autoregressive Distributed Lag and the Johansen	Kozminski & Baek (2017)

Country	Measured Indicators	Outcomes	Methods	Authors
			cointegration approach)	
United States (Alaska)	Consumption - Excess sensitivity (and excess smoothness) through the Marginal Propensity to Consume (MPC).	On average, the marginal propensity to consume (MPC) for non-durables is around 25%, predominantly driven by high-income households whose MPC exceeds 50%. For low-income households, MPC is 10% (lowest quintile), and those with liquid assets smooth the dividends well, while having low levels of liquid assets tend to indicate higher MPCs of between 24% to 45%.	Standard models of intertemporal consumption behaviour (the Permanent Income Hypothesis, the complete markets model, and the buffer stock model)	Kueng (2018)

Appendix C

Overview of Micro and Macrosimulations

Reference	Methodology	Country	Measured Indicators	Outcomes
Aerts et al. (2023)	Tax-benefit microsimulation EUROMOD	Belgium, Netherlands	Total cost of UBI as a % of GDP; additional govt revenue needed; poverty headcount; poverty gap and Gini Coefficient	Outcomes are strongly contingent upon the level, design, and country-specific context. A more generous basic income does not necessarily translate into greater poverty alleviation, and efforts to replace means-tested benefits may either prove fiscally unsustainable or result in substantial losses for households.
Arcarons et al. (2014)	Simple model using actuarial concepts and extended to account for change in population dynamics	Spain	Income inequality and progressiveness	A major income redistribution was observed with inequality (Gini coefficient) declining by 12 points. Even though flat tax rate can be regressive, the combination with UBI is progressive as compared to the existing personal income tax system
Bhorat & Köhler (2025)	Staggered, heterogeneity-robust difference-in-differences design	South Africa	Probabilities of job search, trying to start a business or employment	On average, receipt increases the probability of job search, trying to start a business, and employment. Larger effects on the intensive margins (those who are already looking for jobs or trying to do a business). The positive outcomes are only for the short-term and did not persist for the long term.

Reference	Methodology	Country	Measured Indicators	Outcomes
Browne & Immervoll (2017)	EUROMOD tax-benefit microsimulation	Finland, France, Italy and the United Kingdom	Aggregate fiscal effects, income inequality, poverty headcount, poverty gap, labour Participation Tax Rate (PTR)	In Finland and France, replacing some existing benefits with a basic income with the same level as a Guaranteed Minimum Income (GMI) is roughly budget neutral. In the UK, it is only budget neutral if the basic income is 28% of the GMI. In Italy, the budget neutral basic income amount is higher than the GMI. In all countries, the budget neutral basic income is not neutral in distributive impact. Replacement of existing benefits to remain budget neutral can also increase poverty. For Finland, France and the UK, the PTR will reduce for the first earner in a couple but will increase for the second earner. The result is different in Italy because it has limited means testing on existing benefits so their replacement by a basic income will increase the PTR.
Caamal-Olvera et al. (2022)	MEXMOD tax-benefit microsimulation	Mexico	Change in per capita income (monetary + non-monetary); tax burden and poverty curves for distributional changes in incomes; extreme poverty headcount, poverty headcount and poverty gap; also disaggregated for urban and rural;	UBI is the first best policy among options with the highest reduction in extreme poverty headcount and poverty gap but is the most expensive as a percent of GDP and will result to a budget deficit. The distributive impact is positive in favour of low-income groups. The tax burden is in the richest decile.

Reference	Methodology	Country	Measured Indicators	Outcomes
Chitiga-Mabugu et al. (2025)	CGE model is linked to a micro module; distributional impacts are evaluated using the Gini Coefficient and the Foster-Greer and Thorbecke (FGT), poverty indexes	South Africa	Several macroeconomic impact indicators; Inequality, and poverty headcount	The poverty analysis shows that the simulated policies decrease inequality and poverty. Poor households' income increased by 5 percentage points but was not enough to bring them out or above the poverty line. The inequality among poor households improved by 4 percentage points. Also analyses outcomes under uniform taxing and specific taxing scenarios.
Connolly et al. (2022)	Regional macro-simulation model	Scotland (as a region)	Change in regional GDP); employment rate, investment, exports, nominal gross wage, real take home wage, CPI; consumption of lowest quintile and highest quintile; effective increase in average tax rate	Externally funded UBI stimulates the regional economy but it increases wages and prices and can have a strong migration response. A UBI that is internally funded (by the regional government) will also have some stimulus to demand (but smaller than externally funded UBI). The increase in income tax will push wages up because workers will seek to maintain their take home pays (adverse supply impact). There is equity, (distributional impact) but the wage push will make the region uncompetitive and economic activity will contract.

Reference	Methodology	Country	Measured Indicators	Outcomes
Connolly et al. (2024)	Microsimulation with CGE model	Scotland	Distribution of household incomes and macro impacts upon national income, unemployment and government spending	Provides gross cost and net annual costs of UBI accounting for reduction in existing benefits and removal of personal tax allowance. The distributional effect is in favour of the lower segment. Higher income tax has work disincentives or higher wage bargaining that will reduce economic activity. If workers value their UBI (behavioural), then wage push can be limited or will only seek for the so called "social wage" and prevents migration.
Daruich & Fernandez (2024)	General equilibrium life-cycle Aiyagari framework with wage uncertainty, including a more novel “out-of-work” shock, and with a tax function	United States	Intergenerational linkages; long-term impacts on GDP, capital stock and labour (efficiency units) and many other indicators	Parents' investment on their children will have an impact long-term which is quantitatively significant in explaining the difference of UBI impacts in the short-run and in the long run. Overall, the long term-intergenerational effect is welfare loss and reduction in GDP due to decline in capital and labour efficiency units influenced by lower investment in skills or college education.
Enami et al. (2023)	Microsimulation of pre-fiscal and post-fiscal (7 scenarios)	Brazil, Chile, India, Russia, and South Africa	Poverty - consumable income as welfare indicator; Gini Coefficient; tax burden - increase in direct and indirect taxes	A budget neutral UBI and equivalent benefits UBI are undesirable because the poorest can be worse off. While an equivalent benefits UBI and poverty gap UBI are unfeasible because of tax increase of 30% or more for all countries. Except on Chile and India.

Reference	Methodology	Country	Measured Indicators	Outcomes
Gan (2019)	Considers basic income as a universal life annuity and develops two models based on actuarial concepts	Singapore data	Flat tax rate based on basic income amount	Analyses UBI costs in a context of ageing population or shrinking working age population. Because of the linear correlation between the basic income level and the corresponding tax rate needed to fund it, a fixed income threshold emerges that distinguishes net contributors from net beneficiaries. which is around $2710, and around 39% of adult residents would experience a net gain under the basic income scheme.
Garcia-Murillo & MacInnes (2021)	Ordered probit regression; content analysis for the written explanations of the respondents' choices	United States	Consumption choices under a high UBI or low UBI scenario	The evidence indicates that the UBI size is factored in when making consumption decisions and spending is restrained, and with a higher UBI amount, people would generally spend more and in larger items.
Goderis & Vlekke (2023)	Microsimulation models MIMOSI and MICSIM	Netherlands	Poverty headcount; intensity of poverty gap; Gini Coefficient; employment (number of hours worked); and the government budget balance	While poverty is reduced by 60%, achieving this under a budget-neutral framework would require raising lower and higher income tax rates to 56.5% and 75.4%, respectively which are levels rarely seen in practice. Such tax increases are projected to result in significant labour market effects, including the loss of approximately 8.3% of jobs.

Reference	Methodology	Country	Measured Indicators	Outcomes
Guner et al. (2023)	Equilibrium, life-cycle model; heterogeneity analysis	United States	Employment (hours worked and labour participation rate); taxation; earnings and consumption	A UBI policy as a replacement for the current welfare state require drastic changes in taxation, while a UBI policy on top of the current welfare state only provides marginal welfare gains for a small transfer. Impact on employment is negative.
Jara & Palacio Ludeña (2024)	Tax-benefit microsimulation (ECUAMOD)	Ecuador	Poverty - increase/decrease in per capita disposable income, absolute poverty and extreme poverty headcounts; Gini Coefficient; budgetary costs as a percent of GDP; Marginal Effective Tax Rate.	Simulated UBI policies show positive impacts on poverty and inequality, with the extent of reduction linked to the generosity of benefit reforms. Although costly, partial financing through adjustments to social security contributions and personal income tax may weaken formal work incentives. Nevertheless, marginal effective tax rates remain low by international standards.
Lee (2025)	Discrete choice simulation model	South Korea	Changes in labour supply (hours worked)	Minimal negative effect on employment was observed. Employment status was maintained by over 90% of existing full-time workers, and no one opted out of the labour force entirely, regardless of the UBI amount provided.

Reference	Methodology	Country	Measured Indicators	Outcomes
Luduvice (2024)	Heterogeneous agents overlapping generations model (mainly a macro-simulation)	United States	Earnings, wealth distribution, capital stock, labour input (hours worked, employment rate), output, consumption, savings, inequality (Gini Coefficient)	A larger transfer ($12,000 annually) needs consumption tax to increase by 23.6%. It negatively impacts labour supply, savings and aggregate consumption which in turn reduces total output. Higher inequality is also found. But the welfare gains (increase in disposable income, leisure, insurance) are greater than the shrinkage in output and offsets the amount of welfare loss.
Lustig et al. (2023)	Microsimulations, fiscal incidence analyses	Sub-Saharan Africa - 12 countries: Botswana, Comoros, eSwatini, Ghana, Ivory Coast, Lesotho, Namibia, South Africa, Tanzania, Togo, Uganda and Zambia	Poverty (headcount and squared poverty gap index) based on consumable income; tax rate (an average tax rate change of above 10% is not considered feasible)	A budget-neutral UBI reform is not feasible under the poverty line and poverty gap based on the simulated levels because it will entail a rise in taxes. Specific country outcomes for 10 scenarios are provided. Targeting rather than universal may work but administrative cost of targeting may increase total costs and need to be studied.

Reference	Methodology	Country	Measured Indicators	Outcomes
Martinelli (2020)	EUROMOD tax-benefit microsimulation	United Kingdom	Aggregate spending on all benefits, net costs of the basic income schemes, tax increase, poverty gap, Gini coefficient, Proportion of the population experiencing income gains and losses	The outcomes for three distinct models: a moderate full scheme, a moderate partial scheme and generous full scheme brought out the trade-offs involved. A partial BI scheme might balance affordability and adequacy but will lose the advantages of eliminating or dramatic reduction of bureaucratic burdens for recipients and the state.
Magnani & Piccoli (2020)	Micro–macrosimulation; multisectoral CGE model	France	GDP, employment, real wages, domestic firm competitiveness, household purchasing power, sectoral output, allocation of production factors, labour supply and consumption choices, as well as poverty and income distribution	The reform significantly reduces income inequality and poverty while also generating moderate positive macroeconomic effects. Overall, it avoids the typical equity-efficiency trade-off, particularly under a UBI combined with a flat tax rate.
Mideros & O'Donoghue (2015)	Unitary discrete labour supply model	Ecuador	Paid labour participation (income and working hours) and non-paid labour (working hours); household utility as a function of a couple's time allocation and household income	Results indicate that unconditional cash transfers do not discourage labour participation among household heads, but may effectively compensate partners and single adults for unpaid housework and childcare.

Reference	Methodology	Country	Measured Indicators	Outcomes
Reed et al. (2023)	Landman Economics Tax-Transfer Model	UK	Gross costs of each scheme, associated changes in direct taxes and benefits, distributional effects across income deciles, proportions of gainers and losers, and impacts on disposable income and poverty rates.	3 scenarios have overall positive results on poverty and income inequality. Even with lower level, near fiscally neutral design, outcomes are positive. A higher marginal tax rate is required if there are changes in tax-benefit systems.
Schubert (2018)	CGE-Microsimulation model	Germany	The reform proposal is to integrate social transfers and the tax system and determine the direct impact on individual households. Two scenarios - transfers and the marginal tax rate or transfers and flat tax rate	To maintain Germany's generous transfer level, the marginal tax rates will be very large and are indispensable to finance basic income proposals. Under two reform scenarios, the large tax rates decrease labour supply. One reform scenario results in reduced employment with minimal GDP impact, while another leads to a substantial GDP decline; neither yields positive economic outcomes.
Spies-Butcher et al. (2020)	Affluence-tested model that conceptually integrates tax rates and benefit withdrawal rates	Australia	Fiscal impact, inequality	The proposed models reduce inequality and poverty but involve substantial fiscal costs. To achieve fiscal neutrality, these costs would necessitate significant tax increases. The policy proposals maintain some legacy of the Australian welfare state, which makes it not too much a radical departure from existing system.

Reference	Methodology	Country	Measured Indicators	Outcomes
Widerquist (2017)	Back of the envelope calculations – static budgetary effects	United States	Real cost of UBI - Net cost, percent of government entitlement spending, percent of GDP	It argues that UBI is affordable and when it is affordable, there are more options to fund it. The net cost of this UBI scheme is estimated at $539 billion annually which is roughly one-sixth of its frequently cited gross cost of $3.415 trillion. This represents less than 25% of current U.S. entitlement spending, under 15% of total federal expenditure, and approximately 2.95% of GDP.