**THE CHILD POVERTY SYSTEM CAUSAL LOOP DIAGRAM**

**Different elements of a causal loop diagram**

A causal loop diagram is one way to model the relationship between variables in a system. In a CLD, the direction of influence is recorded along with the nature of the relationship between variables. If an increase in one variable causes another variable to increase too, this will be marked as positive, and if an increase in one variable causes another variable to decrease this link will be marked as negative.

This allows us to identify

leverage points feedback loops and causal cascades.

There are two types of feedback loops.

Sugar cravings

Sugar intake

**Reinforcing**: if a variation in one node propagates through the loop and returns to the original node with the same type (positive or negative) of variation. For example, sugar cravings and sugar intake form a reinforcing loop. When sugar cravings *increase*, the reaction is to eat something sugary which increases sugar intake. After sugar intake increases, the addictiveness of sugar causes sugar cravings to also *increase*.

**Balancing**: if a variation in one node propagates through the loop and returns to the original node with the opposite type (positive or negative) of variation. For example, a daily sugar limit could be introduced in the loop above, and if a person is suitably motivated to stick to the target then as the sugar gap between intake and limit *decreases*, their sugar cravings will decrease, causing sugar intake to decrease. As sugar intake decreases the sugar gap will *increase***.**

Sugar cravings

Sugar intake

Sugar gap

Sugar limit

**Nodes and links**

The tables below contain the variables found in the causal loop diagram of the Child Poverty System, along with the variables they link to, and explanatory notes where relevant.

| **Variable** | **Explanation of variable** | **Positive or negative causal link to:** | | **Explanation of link** |
| --- | --- | --- | --- | --- |
| Relative poverty | A child is in relative poverty if they live in a household where equivalised income for the financial year in question is less than 60% of the UK median equivalised net income for that financial year. | Negative | Parents’ health and wellbeing |  |
| Negative | Children’s health and wellbeing |  |
| Negative | Children’s educational attainment |  |
| Absolute poverty | A child is in absolute poverty if they live in a household with an income below 60% of the UK median equivalised net income in 2010–11. | Negative | Parents’ health and wellbeing |  |
| Negative | Children’s health and wellbeing |  |
| Negative | Children’s educational attainment |  |
| Persistent poverty | A child is in persistent poverty if they have been living in Scotland and in relative poverty for three of the past four years. | Negative | Parents’ health and wellbeing |  |
| Negative | Children’s health and wellbeing |  |
| Negative | Children’s educational attainment |  |
| Low income and material deprivation | A child is in combined low income and material deprivation if they live in a household with an income below 70% of the UK median equivalised net income for that year AND are unable to afford a number of basic goods and services.  **Child items**   * Outdoor space or facilities nearby to play safely * Enough bedrooms for every child over 10 of different sex to have his or her own bedroom * Celebrations on special occasions such as birthdays, Christmas or other religious festivals * Leisure equipment (for example, sports equipment or a bicycle) * A holiday away from home at least one week a year with his or her family * A hobby or leisure activity * Friends round for tea or a snack once a fortnight * Going on a school trip at least once a term for school-aged children * Play group / nursery / toddler group at least once a week for children of pre-school age * Attends organised activity outside school each week * Fresh fruit and vegetables eaten by children every day * Warm winter coat for each child   **Adult items**   * Enough money to keep home in a decent state of decoration * A holiday away from home for one week a year, not staying with relatives * Household contents insurance * Regular savings (of £10 a month) for rainy days or retirement * Replace any worn out furniture * Replace or repair broken electrical goods such as refrigerator or washing machine * A small amount of money to spend each week on yourself * In winter, able to keep accommodation warm enough * Keep up with bills and regular debt payments | Negative | Parents’ health and wellbeing |  |
| Negative | Children’s health and wellbeing |  |
| Negative | Children’s educational attainment |  |
| Net disposable income after housing costs | Income from all sources, net of housing costs and:   * Income tax payments * National Insurance contributions * Domestic rates or Council tax * Contributions to occupational pension schemes * All maintenance and child support payments, which are deducted from the income of the person making the payment * Parental contributions to students living away from home * Student loan repayments | Negative | Low income and material deprivation |  |
| Negative | Relative poverty |
| Negative | Absolute poverty |
| Negative | Persistent poverty |
| Housing costs | The definition in the Family Resources Survey is:   * + Rent / mortgage interest payments   + Water rates, community water charges and council water charges   + Structural insurance premiums (for owner occupiers)   + Ground rent and service charges | Negative | Net disposable income after housing costs | Housing costs are often the largest single cost a household will face, particularly for those on low incomes. All four of the child poverty targets are based on the income that households have left after housing costs have been deducted. |
| Other living costs | The categories of living costs, other than housing costs, that make up the Minimum Income Standard are:  Food  Alcohol  Clothing  Household insurances  Fuel  Other housing costs  Household goods  Household services  Childcare  Personal goods and services  Motoring  Other travel costs  Social and cultural participation | Positive | Low Income and Material Deprivation | Costs of living other than housing costs are not deducted from income for the purposes of determining whether a household is in income poverty. They do, however, affect the risk of material deprivation, as families spending a greater percentage of their income on other living costs will be less likely to afford essential goods and services. |
| Income from all sources | * Earnings from employment * Profit or loss from self-employment (losses are treated as a negative income) * Income from social security and benefits in kind * Income from occupational and private pensions * Investment income * Maintenance payments, if a person receives them directly * Income from educational grants and scholarships (including, for students, top-up loans and parental contributions) | Positive | Net disposable income after housing costs |  |
| Negative | Other living costs | Low income leads to higher living costs e.g. through prepayment meters and higher insurance premiums – the “poverty premium”. |
| Negative | Non-mortgage debt | People on lower incomes are more likely to need to take on debt to cover their living costs. |
| Child maintenance payments |  | Negative | Net disposable income after housing costs | Child support payments are deducted from the income of the person making the payment. |
| Child maintenance receipts |  | Positive | Income from all sources | Child support payments are added to the income of the person making the payment. |
| Income from social security and benefits in kind | Income from social security and benefits in kind includes income from all social security benefits (including school clothing grants) and tax credits, and the cash value of certain forms of income in kind (free school meals, Healthy Start vouchers, free school milk and free TV licence for those aged 75 and over). | Positive | Income from all sources |  |
| Negative | Income from employment | The effective marginal tax rate (EMTR) is the percentage of any increase in earnings that is lost through personal taxes or reductions in means-tested benefits. High EMTRs create weak incentives to move into employment and/or increase hours worked. |
| Income from employment |  | Positive | Income from all sources |  |
| Negative | Income from social security and benefits in kind | As income from employment increases, eligibility to means tested benefits will decrease. Also the amount of UC a person is entitled is tapered based on their income. |
| Income from occupational and private pensions |  | Positive | Income from all sources |  |
| Investment income |  | Positive | Income from all sources |  |
| Income from educational grants and scholarships | This includes, for students, top-up loans and parental contributions | Positive | Income from all sources |  |
| Savings and assets |  | Negative | Low income and material deprivation | Savings can allow people to buy goods and services, without eating into their disposable income, and therefore reduce their risk of material deprivation. |
| Positive | Investment income | Savings can provide income, from interest earned. |
| Negative | Non-mortgage debt | Savings and affordable borrowing can cushion the impact of a loss of income, and avoid financial difficulty turning in to problem debt. |
| Negative | Income from social security and benefits in kind | This could affect a person’s eligibility for a benefit |
| Negative | Housing costs | Home ownership reduces housing costs |
| Non-mortgage debt |  | Positive | Low income and material deprivation | Debt repayments, including interest payments on debt, reduce the amount of disposable income people have to spend on goods and services, and therefore increase their risk of material deprivation. |
| Access to affordable credit |  | Negative | Low income and material deprivation | Affordable borrowing can allow people to buy essential goods and services, and therefore reduce their risk of material deprivation. |
| Negative | Non-mortgage debt | Affordable borrowing can cushion the impact of a loss of income, and avoid financial difficulty turning in to problem debt. |
| Hourly pay | The hourly pay of people living in low income households | Positive | Income from employment | The hourly pay of the employees in the household has a direct impact on income from employment. |
| Hours worked | The total hours worked by people living in low income households. This depends on the number of people in the household who are in paid employment, and the number of hours each of those paid employees works. | Positive | Income from employment | Hours worked per household has a direct impact on income from employment. |
| Negative | Hourly pay | Part-time jobs are much more likely to have a low hourly pay than full-time jobs. |
| Positive | Amount of childcare needed |  |
| Income tax |  | Negative | Income from employment | Employee contributions reduce take-home pay. |
| National Insurance |  | Negative | Income from employment |
| Pension contributions |  | Negative | Income from employment |
| Availability and accessibility of good quality jobs |  | Positive | Hours worked |  |
| Positive | Hourly pay |  |
| Positive | Parents’ mental health |  |
| Positive | Parents’ physical health |  |
| Childcare availability and accessibility |  | Positive | Hours worked | A lack of accessible, flexible, affordable and good quality care services childcare can limit opportunities for paid employment. |
| Positive | Hourly pay |
| Childcare costs |  | Negative | Hours worked | A lack of accessible, flexible, affordable and good quality care services childcare can limit opportunities for paid employment. |
| Negative | Hourly pay |
| Positive | Other living costs |
| Public transport availability and accessibility |  | Positive | Hours worked | Low income households are much less likely to have access to a car than high income households. Along with affordability, other aspects of public transport, such as limited frequency and timetable constraints, can make it difficult for people without access to a car to co-ordinate work, childcare and other activities, potentially limiting opportunities for paid employment. |
| Positive | Hourly pay |
| Public transport costs | For parents and for children.  Includes daily travel from home to school and back, any additional travel for after school activities. | Negative | Hours worked | Low income households are much less likely to have access to a car than high income households. Along with affordability, other aspects of public transport, such as limited frequency and timetable constraints, can make it difficult for people without access to a car to co-ordinate work, childcare and other activities, potentially limiting opportunities for paid employment. |
| Negative | Hourly pay |
| Positive | Other living costs |  |
| Work conditions and flexibility |  | Positive | Hours worked | Jobs with flexibility around when and where work is done make it easier to fit working hours around caring responsibilities. |
| Legal wage floors | National Minimum Wage and National Living Wage | Positive | Hourly pay | Ensure employees do not earn below a certain amount per hour. |
| Parents’ skills and qualifications |  | Positive | Hourly pay | Individuals with higher qualification levels and skills have higher hourly pay on average. |
|  | Positive | Hours worked | Individuals with higher qualification levels and skills are much more likely to be in employment. |
| Progression opportunities |  | Positive | Hourly pay |  |
| Opportunities to develop skills |  | Positive | Skills and qualifications |  |
| Collective bargaining |  | Positive | Employer good practice |  |
| Positive | Higher legal wage floors |  |
| Employer good practice |  | Positive | Opportunities to develop skills |  |
| Positive | Work conditions and flexibility |  |
| Positive | Progression opportunities |  |
| Positive | Hourly pay |  |
| Parents’ health and wellbeing |  | Positive | Hours worked |  |
| Internet access and digital skills |  | Positive | Hours worked | Increases people’s chances of accessing jobs. |
| Positive | Take-up of benefits | Increases people’s chances of accessing social security. |
| Negative | Other living costs | Gives opportunities to find lower-cost financial products and services, online banking, price comparison sites and online deals. |
| Financial value of benefits |  | Positive | Income from social security and benefits in kind |  |
| Reach of benefit | Percentage of low income population in receipt | Positive | Income from social security and benefits in kind |  |
| Take-up of benefits | Percentage of eligible population who are in receipt | Positive | Reach of benefits |  |
| Eligibility | Percentage of low income population who are eligible | Positive | Reach of benefits |  |
| Conditionality and sanctions |  | Negative | Reach of benefits |  |
| Negative | Parents’ health and wellbeing |  |
| Timeliness of receipt of benefits |  | Positive | Income from social security and benefits in kind | Unless payments are back-dated, a delay in processing could result in less income being received overall. |
| Negative | Non-mortgage debt | Even if payments are back-dated, a delay in receiving benefits could result in a need to borrow money to pay for essentials. |
| Awareness | Awareness of benefits and how to apply for them | Positive | Take-up of benefits |  |
| Ease of application |  | Positive | Take-up of benefits |  |
| Stigma | Stigma associated with applying for / being in receipt of benefits | Negative | Take-up of benefits |  |
| Referrals |  | Positive | Awareness |  |
| Positive | Ease of application |  |
| Co-location |  | Positive | Referrals |  |
| Automation |  | Positive | Take up of benefits |  |
| Social renting costs |  | Positive | Housing costs |  |
| Private renting costs |  | Positive | Housing costs |  |
| Mortgage interest payments |  | Positive | Housing costs |  |
| Council tax |  | Positive | Housing costs |  |
| Supply of affordable housing |  | Negative | Social renting costs |  |
| Positive | Shared equity schemes |  |
| Shared equity schemes |  | Negative | Mortgage interest payments |  |
| House prices |  | Positive | Mortgage interest payments |  |
| Mortgage interest rates |  | Positive | Mortgage interest payments |  |
| Land and buildings transaction tax |  | Positive | Mortgage interest payments |  |
| Availability of mid-market rent homes |  | Negative | Private renting costs |  |
| Rent increase caps | Rent Pressure Zones | Negative | Private renting costs |  |
| Rent adjudication | Rent adjudication by Rent Service Scotland | Negative | Private renting costs |  |
| Energy efficiency of housing |  | Negative | Energy costs |  |
|  | Positive | Private renting costs | Increased efficiency could increase rent prices. |
|  | Positive | Social renting costs | Increased efficiency could increase rent prices. |
| Quality of housing |  | Positive | House costs |  |
|  | Positive | Private renting costs |  |
|  | Positive | Social renting costs |  |
|  | Positive | Mental health |  |
|  | Positive | Physical health |  |
| Childcare costs |  | Positive | Other living costs | Childcare can be a significant cost for households with children. |
|  | Negative | Hours worked | A lack of accessible, flexible, affordable and good quality childcare can limit opportunities for paid employment. |
|  | Negative | Hourly pay |
| Amount of childcare needed |  | Positive | Childcare costs |  |
| Childcare fees |  | Positive | Childcare costs |  |
| Clothing and footwear costs | Including school uniform | Positive | Other living costs |  |
| Food and drink costs | Including school meals.  The Minimum Income Standard allows for up to three meals a day with occasional snacks and soft drinks (tea/coffee for adults plus milk, water or squash). Children’s menus follow a similar pattern to that of adults, but contain more snacks, with school aged children having something to eat in between getting home and the evening meal, and younger children having a midmorning snack and another one closer to bedtime.  There is a small budget for alcohol to enable adults to have an occasional drink at home or with a meal outside the home. | Positive | Other living costs |  |
| Domestic fuel costs | According to the Minimum Income Standard, this includes costs for heating, cooking, lighting and use of other electrical appliances | Positive | Other living costs |  |
| Household goods and services | According to the Minimum Income Standard, this includes:   * furniture (seating, dining table and chairs, storage – wardrobes, drawers, shelves) * soft furnishings (curtains, cushions, throws) and flooring * small electrical goods (lamps, kettle, toaster, iron, vacuum cleaner) * textiles (towels, bedding) * kitchen appliances (cooker, fridge, washing machine, microwave) * kitchenware and cookware (saucepans, utensils, baking trays, casserole dishes) * tableware (crockery, cutlery, glassware) * cleaning and laundry items (washing up liquid, mop and bucket, dustpan and brush, bleach, scourers, washing liquid, fabric conditioner, airers) * for households with children: safety and child equipment (stair gates, high chair, non-slip bathmat) * mobile phones (handset and bills) | Positive | Other living costs |  |
| Personal goods and services | According to the Minimum Income Standard, this includes:   * Healthcare (painkillers, plasters) * Toiletries * Period products * Haircuts * Accessories (backpack, water bottle, lunch box, sunglasses) |  |  |  |
| Social and cultural participation | According to the Minimum Income Standard, this includes:   * Leisure activities and equipment (including hobbies, sports, eating out, day trips and holidays) * Home entertainment (TV license, broadband) * Laptops/PCs * Gifts for friends and relatives for birthdays and other celebrations * Children’s toys and pocket money |  |  |  |
| VAT level and eligibility | Eligibility refers to the fact that some things are exempt from VAT | Positive | Other living costs |  |
| Fee to use the Child Maintenance Service | The UK Child Maintenance Service is for parents who have not been able to make a private arrangement about how their child’s living costs will be paid. There is a £20 fee to apply to use the service. Applicants do not have to pay the fee if they are a victim of domestic violence or abuse, under 19 years old, or in Northern Ireland. | Positive | Other living costs |  |
| Emergency costs | Including funeral costs | Positive | Other living costs |  |
| Social networks |  | Negative | Other living costs | Friends and family can provide financial support and other ‘in-kind’ support e.g. childcare |