![GoWell — Studying change in Glasgow's East End]

Change over time in regeneration outcome indicators: comparing GoWell East with other GoWell areas

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Introduction

This report is part of the GoWell East study of the impacts of the Commonwealth Games 2014 and associated regeneration activity on the quality of life of residents and communities in the East End of Glasgow. It compares change and progress over time on a range of indicators for the East End with change recorded for several other deprived areas in the city, some subject to area-based regeneration and others not. It compares the rate of progress achieved in the East End with that achieved in other regeneration areas, and looks at whether the effects of living in deprived areas has changed as a result of regeneration activity in the East End and elsewhere. The study considers the achievements of regeneration towards the end of the first decade of activity.

Methodology

Change over time on a variety of indicators in four domains (neighbourhoods and housing, communities, employment and finances, health and wellbeing) was measured over a four-year period using two data sources: the GoWell East household surveys in 2012 and 2016; and the main GoWell household surveys in 2011 and 2015. The two initial survey years 2012 and 2011, respectively are referred to as Time 1 (T1). The two subsequent survey years 2016 and 2015 respectively are referred to as Time 2 (T2).

Comparison areas from GoWell were chosen from those which were similarly deprived to GoWell East prior to the Games. The comparison areas fell into four groups: Transformational Regeneration Areas (Red Road, Sighthill and Shawbridge); Local Regeneration Areas (St Andrews Drive and Gorbals Riverside); Non-Regeneration Housing Improvement Areas (Govan and Townhead); and Non-Regeneration Peripheral Estates (Castlemilk and Drumchapel).

The analysis of each indicator comprises three parts:

- Comparison of absolute change in the indicator value as well as change in the rank position of GoWell East (GWE) among the five groups of areas, on the indicator value. This identifies where GWE stands on the indicator, and the changing size of any gap between GWE and the comparison groups of areas.
- Comparison of relative change in the indicator value for GWE and for the four comparison groups. This is to consider the performance of each area over time, respective to its starting point on the indicator in question.
- Statistical modelling of the indicator at each time point in order to examine the strength of association between living in GWE, or in any of the comparison groups of areas, and the indicator value, after controlling for other sociodemographic and residential factors. This is to establish whether there appears to be an area effect upon the outcome variable, and if this situation changes over time.

Neighbourhoods and housing

Summary: There was positive (beneficial) change over time for the vast majority of neighbourhood and housing indicators in GoWell East. Compared with both regeneration and non-regeneration areas, GoWell East performed particularly well in respect of relative change over time in indicators of the social environment and quality of local amenities. Nevertheless, residence in GoWell East had a continued negative effect on most of the neighbourhood and housing indicators, although in many cases the negative effect had lessened over time.

GoWell East experienced positive absolute change over time on the vast majority, 18 out of 20, neighbourhood and housing indicators examined. For a third of these indicators, the absolute change was greater in GoWell East than in the comparison areas.

In terms of relative change over time (compared with its starting point at Time 1) on neighbourhood and housing indicators, GoWell East outperformed the Local Regeneration Areas (LRs), Wider Surrounding Areas (WSAs) and Peripheral Estates (PEs) on most indicators, and outperformed the Transformational Regeneration Areas (TRAs) on half the indicators.

In terms of relative change, GoWell East performed particularly well compared with the other areas in respect of indicators of the social environment (antisocial behaviour problems and feelings of safety) and for residents' perceptions of the quality of local amenities. For many items within these two groups of indicators GoWell East outperformed all the comparison areas in terms of relative indicator change over time, as well as in the case of the identification of vacant and derelict land as a local problem.

Nonetheless, for the majority of the neighbourhood and housing indicators, after controlling for participants' socio-demographic characteristics, living in GoWell East at Time 2 had a negative effect, as it also did at Time 1. For eight indicators the negative effect of GoWell East residence had, however, lessened over time, while for six indicators the negative effect had worsened.

Positive effects of living in GoWell East at Time 2 existed for three of the neighbourhood and housing indicators. A positive effect on the perceived quality of youth and leisure services arose between Time 1 and Time 2. Positive effects of GoWell East residence on perceived neighbourhood change for the better and on residents' ratings of the quality of local parks and open spaces persisted from Time 1 through to Time 2. The positive effect of GoWell East residence on ratings of local public transport, which had existed at Time 1, no longer did so at Time 2.

Communities

Summary: There was positive (beneficial) movement over time on the majority of community indicators for GoWell East, although the TRAs often outperformed GoWell East in terms of absolute and relative improvement in indicators. GoWell East residence affected only half of the community indicators at Time 2, a combination of positive effects on some of the social contact and support indicators and negative effects on some of the psychosocial indicators.

GoWell East experienced positive absolute change over time for six of the eight community indicators examined. However, the largest absolute increase for each community indicator was most often observed in the TRAs.

The TRAs outperformed GoWell East in terms of relative change on all eight community indicators, although GoWell East outperformed LRAs on four of the indicators. There were four community indicators where relative change over time was more positive in GoWell East than in the three comparison areas other than TRAs: feeling part of the community; talking to people when out in the neighbourhood; visiting neighbours in their home; and availability of emotional social support.

After controlling for socio-demographic characteristics, living in GoWell East had a negative effect on two of the eight community indicators at Time 2 (more so than at Time 1), these being the perceived internal reputation of the area and the ability to influence local decisions. However, a negative effect upon feeling part of the community had disappeared by Time 2. For two other community indicators, living in GoWell East had a positive effect at Time 2, compared with having no effect at Time 1, these being regular contact with relatives and having emotional social support available. Living in GoWell East had no effect at Time 2 on the other four community indicators examined.

Employment and finances

Summary: There was positive (beneficial) movement over time on several of the employment indicators and two of the finance indicators in the GoWell East area, although relative changes were greater in the Transformational Regeneration Areas. GoWell East residence had positive effects on most of the employment and finance indicators at Time 2, representing an improvement on the situation at Time 1.

GoWell East experienced positive absolute change over time for five of the eight employment and finance indicators examined. GoWell East saw the second largest absolute increase over time (after the TRAs) for three of the employment indicators: the total adult employment rate; the rate of male full-time employment; and the rate of female part-time employment. For two of the finance indicators, frequent difficulty paying for fuel and for food, the positive change in GoWell East was greater than seen in any of the comparison areas.

The TRAs outperformed GoWell East in respect of relative change over time for all the employment and finance indicators. However, in terms of relative change over time, GoWell East outperformed the LRAs for seven of the eight indicators and outperformed the PEs for six of the eight indicators.

Residence in GoWell East had a positive effect upon four of the five employment indicators at Time 2, after controlling for socio-demographic characteristics: in the case of two of these indicators the positive effect had increased over time (adult employment rate; full-time male employment), while appearing for the first time at Time 2 in the case of the third indicator (female part-time employment). GoWell East residence also had a positive effect at Time 2 on all three financial indicators examined, and in two cases (fuel and food poverty) this was a reversal of the position at Time 1.

Health and wellbeing

Summary: There was positive (i.e. beneficial) movement on the majority of health and wellbeing indicators over time in the GoWell East area. Relative improvement on indicators was often greater in GoWell East than elsewhere, although there were two notable exceptions where relative change was negative (i.e. detrimental) in GoWell East, namely meeting physical activity guidelines and

consumption of fast food meals. After controlling for sociodemographic characteristics of respondents, the negative effects of residence in the GoWell East area on some of the health and wellbeing indicators reduced over time, while the positive effects of GoWell East residence on other indictors increased over time.

GoWell East experienced positive absolute change over time for nine of the 12 health and wellbeing indicators examined, with two indicators worsening over time. The positive absolute changes observed in GoWell East exceeded the level of absolute change in the comparison areas for eight of these indicators. The rank position of GoWell East compared with the four comparison areas substantially improved for overall indicators of general, physical and mental health.

GoWell East outperformed the comparison areas in terms of relative change over time on the majority of the health and wellbeing indicators examined, covering physical health, mental health and health behaviours. The few exceptions to this were relative changes in mental wellbeing scores (where TRAs outperformed GoWell East), consumption of fast food or takeaway meals (where both types of regeneration area outperformed GoWell East), and the number of people meeting the physical activity guidelines (where all comparison areas outperformed GoWell East in terms of relative change over time).

Residence in GoWell East had a negative effect upon four of the 12 health and wellbeing indicators at Time 2, after controlling for socio-demographic characteristics, compared with negative effects upon six of the indicators at Time 1. The four indicators were: general health; meeting the physical activity guidelines; mental wellbeing score; and current drinking. In contrast, residence in GoWell East had a positive effect upon three indicators at Time 2, compared with a positive effect upon two indicators at Time 1. The three indictors were: mental health score; consumption of fast food meals; and consumption of fruit and vegetables.

Conclusion

The regeneration programme in the East End has helped deliver positive change on most indicators across all four domains of enquiry. The East End is outperformed by the Transformational Regeneration Areas in respect of the neighbourhoods and housing indicators. This residential domain is one where there is a need for further improvement efforts in the East End, since negative area effects on outcomes are still evident. However, there are particular successes to note such as reductions in antisocial behaviour problems and improvements in local amenities such as leisure facilities and parks. Alongside this, there is also a need for further efforts to engage communities in the East End in order to improve residents' sense of influence and to overcome a negative perceived area reputation.

Health and wellbeing indicators are another area of widespread improvement in the East End, with notable improvements in walking and mental health compared with other areas. However, living in the East End still has significant negative effects upon drinking and levels of physical activity, and the rate of change on reducing fast food consumption is greater in the other regeneration areas. There are clear indications here of where there is a need for a stronger public health element to the regeneration programme in the East End in the future.

Employment and finances is the domain where there is clear, consistent progress in the East End, and where the rate of improvement over time exceeds that seen in many other areas (apart from the TRAs). This probably reflects the particular nature of the regeneration programme in the East

End, and there may be lessons to be learnt from the East End for regeneration in the rest of the city. Nevertheless, the adult employment rate in the East End still lies 15 percentage points lower than the city-wide rate, indicating the need for regeneration efforts in the area to continue.

Finally, we can assess the added value of event-related regeneration, as enacted in Glasgow's East End, over and above other forms of housing-led regeneration implemented elsewhere in the city, by considering relative progress made over time in the respective areas. In these terms, the gains of event-related regeneration are most apparent in four areas: neighbourhood physical and social environment; community social contact and support; adult employment and household finances; and health and wellbeing. There are nonetheless exceptions to these, for example housing conditions and the attractiveness of buildings are seen to have improved faster in the city's housing-led regeneration areas. Further, the good performance of GWE in respect of community and employment indicators only applies when event-related regeneration is compared with the smaller, local regeneration areas but not to the larger, transformational regeneration areas. In the latter case, faster gains over time may reflect both a lower starting point (i.e. some conditions were worse in the TRAs at baseline) and the effect of population diversity and population change in these areas. Thus, the fact that event-related regeneration was implemented in a deprived area with a more stable resident population and did not involve large-scale housing change, places constraints on what can be achieved in a short period of time.

However, a further indication of the contribution of event-related regeneration may be found if a comparison is made with the city's large, peripheral housing estates that have not been subject to comprehensive regeneration over the same period. On this assessment, GWE, as the area subject to event-related regeneration, performs well in both absolute and relative terms on many of the indicators in three areas: social environment (antisocial behaviour; social contact and support); employment and finances; and health and wellbeing. This gives an indication of the counterfactual, i.e. what might things have been like without the event-related regeneration, and suggests a positive contribution to progress in the East End.

1   Introduction

This report is part of the GoWell East study, which is an investigation of the impacts of the 2014 Commonwealth Games and associated regeneration activity upon the quality of life of residents and communities in the East End of Glasgow[1]. The study forms part of the Scottish Government's wider evaluation of the legacy impacts of the Commonwealth Games. Previous reports from GoWell East have looked at changes reported within the East End study area[2], whereas this report compares changes in the East End with those in other, similarly deprived parts of the city of Glasgow over a similar time period that spans the Commonwealth Games event time.

Multisport events such as the Commonwealth Games are often claimed to have a wide range of legacy impacts, although many of these are not evidenced consistently, or very well. Short-term economic impacts are the most frequently evidenced, due to business growth and tourism, with associated employability and labour market gains being most evident in post-industrial cities. But longer-term economic impacts from multisport events are not yet established[3]. Physical activity and sports participation legacies seem fragile and contested, often with a temporary surge in participation around the time of the event, and perhaps a small sustained increase for some social groups thereafter, as has emerged in the case of the 2012 London Olympic Games[4]. Allied population health impacts from multisport events have not been evidenced one way or the other by studies of sufficient quality[5], while a prospective assessment in the case of the Glasgow Commonwealth Games concluded that health gains were 'uncertain', with impacts most likely to come via interventions such as community engagement and infrastructure provision[6].

Over the past two decades, multisport events have sought to use infrastructure and housing investment to create a regeneration legacy for deprived areas of cities lying close to the main event location. This has most often been claimed in respect of the cities of Barcelona, Manchester and London. On the other hand, studies in a number of places have shown that the regeneration legacy can have socially unequal outcomes, with transport infrastructure geared to short-term rather than long-term residents' needs[7], social housing lacking in developments[8], and house prices rising in

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[1] See: GoWell East http://www.gowellonline.com/goeast

[2] For example: Gannon M, Kearns A, Clark J. *Monitoring the impacts of the Commonwealth Games and regeneration on the east end of Glasgow: headline indicators 2012-2016*. Glasgow: GoWell; 2018. Available at: http://www.gowellonline.com/publications/453_glasgow_2014_games_and_regeneration_headline_indicators_2012-2016

[3] Kemloe G, Owe E. *A Review of the Evidence of Legacy from Major Sporting Events.* Edinburgh: Scottish Government Social Research; 2014.

[4] Full Fact. *A sporting legacy? How participation has changed since the 2012 Olympics*. https://fullfact.org/health/has-london-2012-olympics-had-sporting-legacy-uk/

[5] McCartney G, Thomas S, Thomson H, Scott J, Hamilton V, Hanlon H, Morrison D, Bond L. The health and socio-economic impacts of major multi-sports events: a systematic review (1978-2008). *BMJ* 2010;340:c2369.

[6] McCartney G, Palmer S, Winterbottom S, Jones R, Kendall R, Booker D. A health impact assessment of the 2014 Commonwealth Games in Glasgow. *Public Health* 2010; 124(8):444-451.

[7] Kassens-Noor E. *Planning Olympic Legacies: Transport Dreams and Urban Realities*. London: Routledge; 2012.

[8] Smith A. *Events and Urban Regeneration: the Strategic Use of Events to Revitalise Cities*. London: Routledge; 2012.

regenerated areas to the exclusion of local people[9]. A major concern with multisport events is also the direct displacement of local residents to make way for sporting venues, associated facilities, and an athletes' village, as is said to have happened in the case of Beijing[10].

Glasgow's hosting of the Commonwealth Games was announced in 2007, with the Games taking place in July-August 2014. This seven-year lead-in period allowed Glasgow City Council to link the Games preparations with an area regeneration programme covering the main hosting area in the East End of the city. While the Games were to be organised by Glasgow 2014 Ltd., the local regeneration was led by Clyde Gateway, an Urban Regeneration Company established in 2006 with a 20-year programme covering infrastructure (including assistance with the provision of Games venues and the athletes' village), housing, public realm improvements, economic development and community engagement[11]. The Games Legacy strategy comprised 59 legacy programmes and 80 related projects at national level (which would also potentially impact in Glasgow and the East End) as well as a further 80 city-led legacy programmes and 300 associated projects[12]. These programmes and projects were concerned with the economy and employment, sport and physical activity, environmental improvements, culture and community involvement. While the majority of these programmes and projects were not exclusive to the East End of Glasgow, some of them were and many would have had an emphasis on the East End.

At the same time as the preparations for the Games were taking place, area regeneration was also underway in other parts of the city. Following council housing stock transfer in 2003, housing-led regeneration was commenced in eight large and seven smaller areas in 2005, led by Glasgow Housing Association[13] and subsequently by a partnership body, Transforming Communities Glasgow[14]. This regeneration mainly comprised housing demolition and redevelopment as well as housing improvements to retained stock, together with environmental improvement works, community engagement activities, and a number of other resident support programmes which varied from site to site. The impacts of this programme have been studied by the GoWell programme since its inception and this has provided the opportunity to compare the effects of event-related regeneration in the East End with the effects of housing-led regeneration across the rest of Glasgow. This report therefore examines impacts and progress made by these two versions of regeneration towards the end of their first decade of activity. In both cases, the regeneration is expected to continue for at least another decade.

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[9] Kavetsos G. The impact of the London Olympics announcement on property prices. *Urban Studies* 2012;49(7):1453-1470.

[10] Shin HB. Life in the shadow of mega-events: Beijing Summer Olympiad and its impact on housing. *Journal of Asian Public Policy* 2009;2(2):122-141.

[11] Clyde Gateway. *A Dynamic City Location. Clyde Gateway Business Plan. Executive Summary.* Glasgow: Clyde Gateway; (undated).

[12] Scottish Government Communities Analytical Services Division. *An Evaluation of the Legacy From the Glasgow 2014 Commonwealth Games: Post Games Report*. Edinburgh: Scottish Government; 2015.

[13] Glasgow Housing Association. *Regeneration Projects: Processes and Guidance Notes*. Glasgow: GHA; 2005.

[14] See: Glasgow City Council. *Transforming Communities Partnership*. https://www.glasgow.gov.uk/index.aspx?articleid=19842

The study looks at change over time in a range of regeneration outcome indicators for a number of types of deprived area, including areas undergoing large-scale and smaller-scale regeneration, areas adjacent to regeneration areas which may be affected by the activity, areas subject to regeneration in the past, and areas not subject to area-based programmes. The outcome indicators examined cover four domains: neighbourhoods and housing; communities; employment and finances; and health and wellbeing. An analysis of absolute and relative change in indicators allows us to see whether progress over time is more or less apparent, or more or less rapid, in the GoWell East area compared with the other types of area. The research also examines the effects of living in each of the types of area upon the outcome indicators at each time point, after controlling for sociodemographic characteristics. This further analysis enables us to see whether any detrimental effects of living in a deprived location such as the GoWell East area have been reduced over time, in line with the aims of regeneration. Further details of the methodology are given in the following chapter.

2   Methodology

This report is a detailed comparison of the progress in the East End of Glasgow with the progress elsewhere in the city's most deprived areas. This is achieved through the analysis of data selected from the main GoWell survey and survey data from the GoWell East project. GoWell used a prospective quasi-experimental design to evaluate the effects of regeneration on a broad range of environmental, social, psychosocial, economic and health outcomes. A baseline survey of tenants and home owners (or their partners) was carried out in 2006 (wave 1) in 14 study areas across Glasgow, comprising 33 sub-areas, and grouped into five Intervention Area Types (IATs). Three subsequent surveys were undertaken: in 2008, 2011 and 2015 (waves 2-4). This report is based on data from waves 3 and 4 of the GoWell study that took place in 2011 and 2015. This data was compared with waves 1 and 3 of the GoWell East survey which took place in 2012 and 2016, i.e. in each case, change over a four-year survey interval is examined.

The main approach has been to identify other GoWell study areas that were similarly deprived to the GoWell East area prior to the Games. This gives us two main comparisons: a comparison with non-treatment areas and a comparison with other treatment (regeneration) areas.

Comparison with non-treatment area

Our first comparison is with locations where regeneration is not being experienced such as Housing Improvement Areas (HIAs) and Peripheral Estates (PEs). Our comparison HIAs are Townhead and Govan – both of these areas have high levels of deprivation similar to areas in the East End. For PEs, Castlemilk and Drumchapel were chosen. These areas not only experience similar levels of deprivation to the GoWell East study area but also have similar levels of owner occupation and ethnic composition. Although these four areas are labelled non-treatment areas they have received a standard level of housing improvement works in order that social housing sector stock meets the Scottish Housing Quality Standard and offer an inner city and outer city comparison.

Comparison with other treatment areas

Our second comparison is with Transformational Regeneration Areas (TRAs), where major investment is underway, involving a substantial amount of demolition and rebuilding over a long period, and Local Regeneration Areas (LRAs) where housing improvement work is combined with some demolition and redevelopment but the majority of the housing remains standing and occupied. We included all three TRAs (Red Road, Sighthill and Shawbridge) in the comparison analysis as the major demolition work had reduced the sample size in these areas, particularly in Sighthill, as can be seen in Table 2.1. The LRAs chosen were St Andrews Drive and Gorbals Riverside. These two areas are located near to the city centre but differ to the GoWell East study area as they contain more ethic minority residents.

Table 1. Sample size for chosen GoWell IATs and GoWell East by time period.

	Time 1	Time 2
TRA	773	357
LRA	429	382
HIA	378	515
PE	888	770
GWE	1,015	1,004
Total	**3,483**	**3,028**

2.1   Analysis

The analysis involved measuring change in a number of indicators over time for each of the five groups of areas; GoWell East (GWE); HIAs; PEs; TRAs; LRAs. For each of the five groups of areas, change was measured over the four-year period situated within the middle of the regeneration programme: 2012 to 2016 for GoWell East; 2011 to 2015 for all other areas. Absolute percentage point changes in indicators as well as relative change in indicators (absolute/baseline value) were measured.

Outcomes were typically measured over a five-point ordinal scale (for example, 1: strongly agree; 2: agree; 3: neither agree nor disagree; 4: disagree; 5: strongly disagree). For simplicity of analysis, adjacent categories were combined to produce a dichotomous variable (for example, categories 1 & 2 versus 3-5, or 1 versus 2-5). Decisions about which categories to combine were made on a variable-by-variable basis to ensure that, as far as possible, the smaller category contained at least 20% of the responses, to make it easier to identify significant changes over time. 'Don't know' responses for opinion-based questions (i.e. those with ordinal responses) were usually considered to be equivalent to a neutral response (i.e., neither agree nor disagree, in the above example). For status-based questions (that is, those with nominal responses, such as those for employment status), cases with a 'don't know' response could not be otherwise categorised and were excluded from the analysis. Likewise, cases for which there was a 'not applicable' response or no answer, for whatever reason, could not be analysed and were excluded.

Data analysis involved comparing each outcome between Time 1 and Time 2. Using the weighted data (see below), percentages of one of the two category classes for each factor – usually considering the 'desirable' response (for example, being fairly or very satisfied with the home), but occasionally the 'undesirable' response (for example, being a smoker) – are presented graphically for the separate IATs over the two time points. The statistical significance of the changes in each IAT over time was assessed using a Chi-square contingency test, which examines changes in the relative proportions of the two response categories between time points —the (un)desirable response versus all other valid responses. However, for the sake of brevity, below we refer to this in terms of "analysing the change in the percentages of the '(un)desirable' response category". Changes were considered to be significant if the test had an associated probability of $p < 0.05$. One of the aims of urban regeneration is to reduce inequalities. We consider these here in terms of the change between time points in the range of the percentages of people in the different IATs giving a particular response, seen as the narrowing (less inequality) or widening (more inequality) of the gap between the lines in the graphs.

The results are presented in the following four sections, considering neighbourhoods and housing, communities, employment and finance, and health and wellbeing, in turn. For each variable, a chart is presented showing change over time in that variable for each of the IATs (using different coloured lines) and GWE: solid lines indicate statistically significant changes over time, i.e. $p < 0.05$; dotted lines indicate non-significant changes over time. In the text, where we mention percentage changes in variables over time, we are referring to absolute changes in the variables (e.g. from 6% to 12% is a change of +6%); if we refer to relative change in a variable the text will explicitly state this (e.g. a change from 6% to 12% being a relative doubling in value or a relative increase of 100%). A table is provided in each section that summarises the relative changes in each of the variables in that section for all four IATs compared with GWE. In these tables, the "✓" symbol indicates that GWE has outperformed another IAT for example, a relative increase in the percentage of people satisfied with their home, or a decrease in the proportion of people smoking. Conversely, the "X" symbol indicates the IAT in question has seen a greater improvement in relative terms than GWE.

The final part of the analysis examines whether GWE or each of the other IATs is significantly associated with each of the outcomes at each time point, after taking into account respondent characteristics including gender, age, household type, length of residence, housing tenure and employment status. This enables us to consider whether the area type itself appears to have a positive or negative effect on the outcome, adjusting for the fact that respondent characteristics vary between the IATs. The majority of dependent variables in the models were categorical and collapsed to binary versions which were modelled using logistic regression. The odds ratios for all variables in the models are shown along with their significance level. For the continuous variables such as the scores from the Short Form 12 Physical Component Summary (SF12-PCS) the coefficients are given for the variables and their corresponding significance level.

2.2   Weighting

To ensure as far as possible that the analyses reflect the populations from which the samples were drawn at each wave, a set of weights (numerical coefficients) was developed for all of the cases. In this way, the responses of people who possessed characteristics that were under-represented in the sample relative to the population they came from were given greater importance, while the importance of responses from residents with over-represented characteristics was downplayed. In this way, we can be more confident that the findings for IATs more accurately represent the balance of views held by all adults living there.

Each case was weighted with respect to the following characteristics:
1. Respondent's gender: male / female (by sub-area).
2. Respondent's age group: 16-24 / 25-39 / 40-54 / 55-65 / 65+ years (by sub-area).
3. Respondent's housing tenure: owned / social or private rented (by sub-area).
4. Adult population size in study area: sub-areas within study areas.
5. Adult population size in IATs: study areas within IATs.

Populations of adults (16+ years old) in the study areas and IATs (further classified by gender and age group at sub-area level) were estimated from the NHS Community Health Index (CHI) records of GP registrations in the corresponding postcode units from August 2006, 2008 and 2011, and December 2015. The frequencies of the two tenure types for households in each of the sub-areas were derived from the Glasgow City Council (GCC) Tax Register for March 2006, 2008, 2011 and 2015. Weights are the product of the five coefficients whose values correspond to the particular circumstances of each respondent.

In order that highly under-represented cases were not given excessive importance, weights were constrained to have a value of no more than five. Finally, all weights were multiplied by a constant so that the total number of weighted cases was equal to the actual number of interviews achieved at each wave. In broad terms, the weights corrected for the disproportionately high percentage of participants in the sample who were women, aged 55+ years, or living in a rented dwelling relative to the populations and distributions of tenures of the households in the study areas. The percentage over-representation of these groups in the four samples is shown in Table 2.2. It should be noted that the GoWell main survey data weights were adjusted to reflect the selection of sub-areas from the groups of areas that form the IATs.

Table 2. Percentage composition of demographic characteristics and tenures in GoWell samples.

GoWell main survey sample							
		Time 1			Time 2		
Variable	Category	Sample	Population	Sample over-representation (%)	Sample	Population	Sample over-representation (%)
Gender	Male	40.5	50.1		40.1	50.7	
	Female	59.5	49.9	9.6	59.5	49.3	10.2
Age group	15-54 years	62.6	72.7		57.0	70.7	
	55+ years	37.4	27.3	10.1	43.0	29.3	13.7
Tenure	Owned	16.6	29.7		19.0	29.2	
	Rented	83.4	70.3	13.1	81.0	70.8	10.1
GoWell East survey sample							
		Time 1			Time 2		
Variable	Category	Sample	Population	Sample over-representation (%)	Sample	Population	Sample over-representation (%)
Gender	Male	43.4	49.3		44.8	48.1	
	Female	56.6	50.7	5.9	55.2	51.9	3.3
Age group	15-54 years	62.2	71.6		60.6	71.2	
	55+ years	37.8	28.3	9.5	39.4	28.8	10.6
Tenure	Owned	30.5	24.2	6.3	23.2	25.9	
	Rented	67.1	75.9		75.2	74.1	1.1

3   Neighbourhoods and housing

In this chapter we focus on the themes of neighbourhoods and housing. We examine the change over time by intervention area type in relation to 20 separate measures, covering five main areas of interest:

- Overall satisfaction with their neighbourhood as a place to live.
- Perceptions of the physical environment.
- Perceptions of the social environment.
- Ratings of the quality of local amenities.
- Views about housing.

The chapter is divided into three parts as follows:

Part one. An examination of change from Time 1 to Time 2 in each of the indicators by IAT, under the five areas of interest. Here we are particularly interested in absolute changes in the indicators and in the rank position of GWE among the IAT groups, although we also report on relative changes in the indicators for each IAT.

Part two. A summary and overview of relative changes in the indicators, comparing the performance of GWE against the other regeneration and non-regeneration IATs.

Part three. Statistical modelling of each indicator to assess whether, at Time 1 and at Time 2, IAT is significantly associated with the outcome in question, after controlling for other socio-demographic and residential factors. Within this, we are particularly interested in whether living in the GWE area is positively or negatively associated with each outcome at the two time-points.

## 3.1   Absolute changes on indicators and IAT rank positions

Overall neighbourhood indicators

We begin by examining four indicators of people's overall perceptions of their neighbourhoods: satisfaction with the neighbourhood as a place to live; views on recent neighbourhood change; deriving a sense of personal progress from living in the neighbourhood; and views on the external reputation of the neighbourhood.

Satisfaction with neighbourhood as a place to live

Respondents were asked to rate their neighbourhood on a five-point scale from very satisfied to very dissatisfied. Figure 1 shows the results for respondents that reported being very satisfied by IAT at both time points.

Figure 1: Satisfaction with neighbourhood as a place to live (very satisfied).
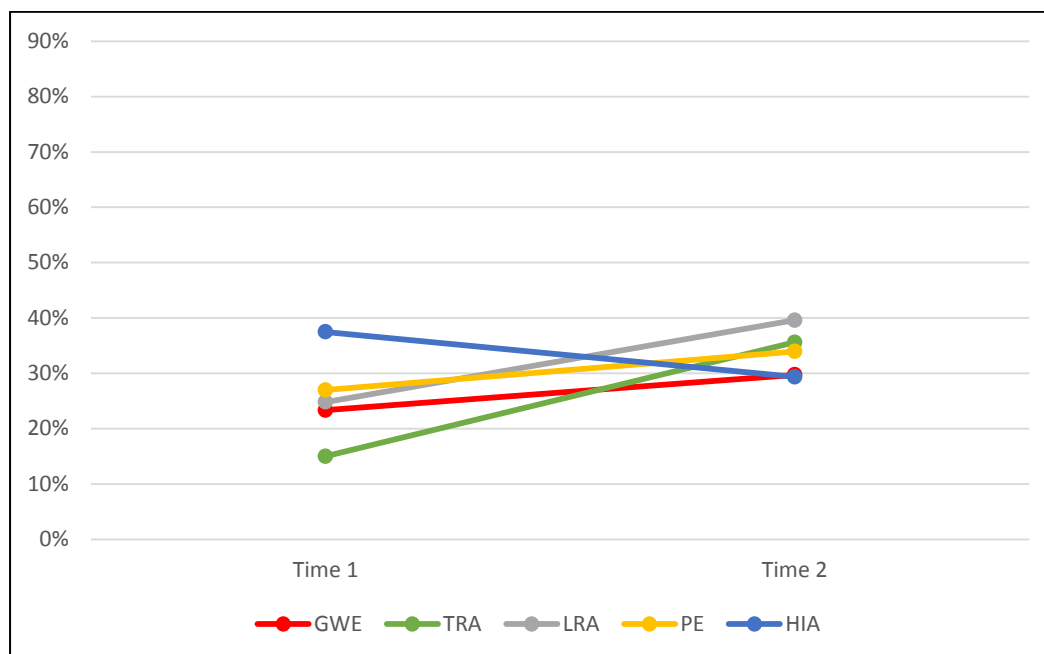
Findings:

- All IATs apart from HIAs saw a significant increase in the level of those very satisfied with their neighbourhood.
- HIAs were the only IAT to experience a decrease in satisfaction with those very satisfied dropping by 8 percentage points. However, it should be noted that HIAs had the highest satisfaction rate by some margin at Time 1.
- TRAs saw the largest absolute increase rising from 15% very satisfied at Time 1 to 36% by Time 2[15]; however, TRAs had the lowest level of satisfaction of all five IATs at Time 1.
- GWE saw an absolute increase in the percentage very satisfied with their neighbourhood of 7 points, although its rank position remained unchanged over time at fourth among the five groups.

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[15] All percentages quoted for absolute change are rounded to whole numbers.

- When we examined the change in this indicator relative to that reported at Time 1 we found that TRAs experienced the greatest relative increase (137%)[16] and PEs had the smallest relative increase (26%). The relative increase for GWE was 27%.

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[16] All figures quoted for relative change are based on absolute percentages for the two time points calculated to two decimal places, with the resulting relative change rounded to a whole number.

Perceived improvement in neighbourhood

All participants were asked whether they felt their local area had got better or worse to live in over the past few years. Here we consider the view that the neighbourhood had got better to live in.

Figure 2: Area has got better to live in over the past two years.
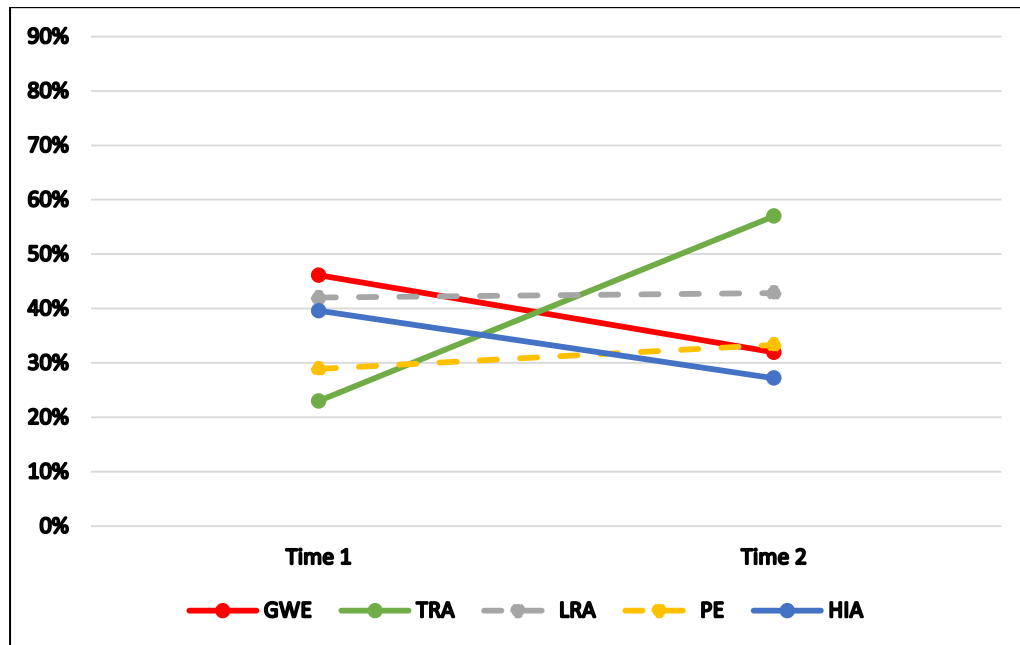
[1] Dashed line denotes a change over time that is not statistically significant

Findings:
- TRAs were the only IAT to see an increase in those that thought their area had improved, rising from 23% at Time 1 to 57% by Time 2.
- Both GWE and HIA areas showed a similar pattern with a decrease in the percentage of respondents that felt their area had got better (but also an increase in those that believed it had not changed over time (data not shown).
- Neither LRAs nor PEs had statistically significant change in the level of respondents that believed their area had improved over time.
- The rank position of GWE fell over time from first to fourth among the five IATs
- When we calculated the change in this indicator relative to Time 1 we found that TRAs had a relative increase of 148%.
- GWEs and HIAs had a similar decrease relative to Time 1 of 31%.

Sense of progress from living in the neighbourhood

Respondents were asked to rate on a five-point scale how well they agreed with the statement 'Living in this neighbourhood makes me feel that I am doing well in life'. Figure 3 shows the percentage of respondents who said they agreed or strongly agreed with the statement at the two time points.

Figure 3: Living in the neighbourhood makes respondent feel they are doing well (strongly agree/agree).
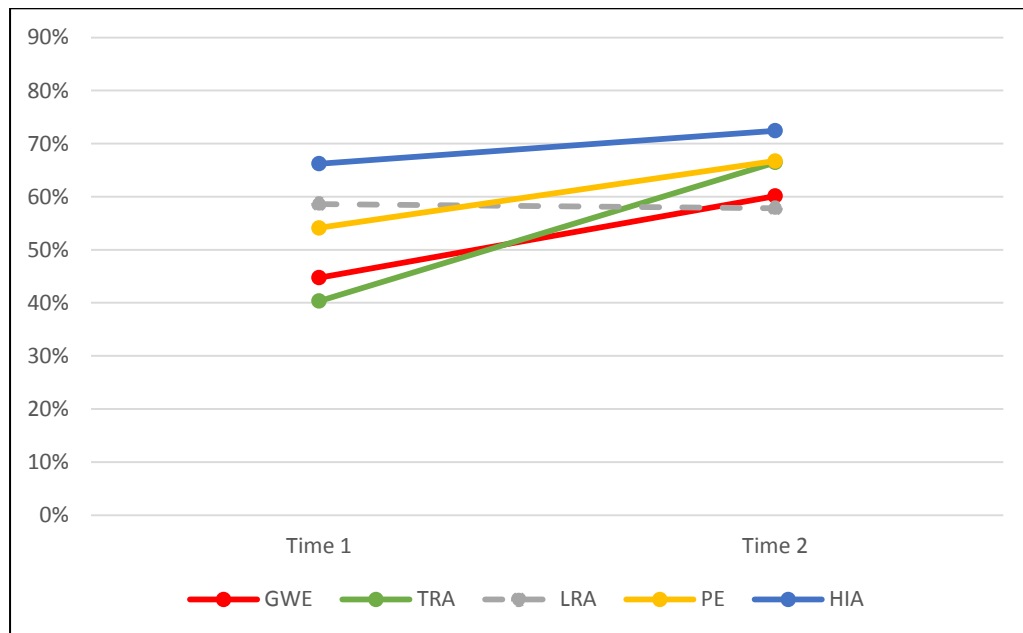
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:

- All IATs apart from LRAs had a statistically significant increase in the percentage of respondents that agreed or strongly agreed with the statement.
- HIAs had the highest proportion of respondents with positive views at Time 1 (66%) and this had increased by 6 percentage points at Time 2 (72%).
- TRAs saw the largest improvement with an increase of 26 percentage points over time, however they were the IAT with the lowest percentage at Time 1.
- The number of people in GWE who reported that they got a sense of personal progress from living in their neighbourhood increased from 45% to 60% over time. However, the rank position of GWE remained unchanged at fourth.
- LRAs did not show a statistically significant change over time for this indicator.
- When we calculated the change in this indicator relative to Time 1 we found that TRAs had the greatest relative increase (65%) and HIAs the lowest (9%). The relative increase for GWE was 34%.

Neighbourhood reputation

Respondents were asked to indicate how much they agreed with the statement that 'Many people in Glasgow think this neighbourhood has a bad reputation'. Figure 4 shows the responses for those that strongly agreed or agreed with the statement at Time 1 and Time 2.

Figure 4: Neighbourhood has a bad external reputation (strongly agree/agree).
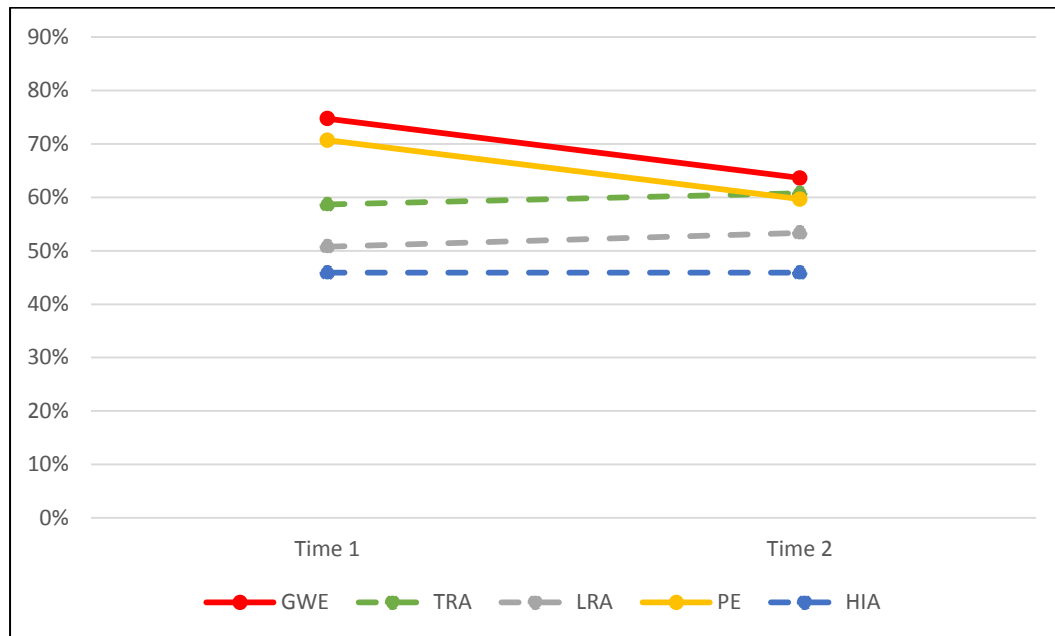
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:

- Only GWE respondents and those in PEs saw a significant change over time. For both these IATs the proportion agreeing with this negative statement decreased from T1 to T2, in GWE's case from 75% to 64%. The rank position of GWE remained unchanged over time at fifth, i.e. the highest number of participants identifying a negative reputation for their area.
- For the other three IATs there was no significant change in response over time.
- It should be noted that for four out of five IATs the majority of respondents agreed with this statement at Time 1 and this did not change by Time 2. HIAs were the only are type where less than 50% of respondents agreed with this statement.
- When we examined the change in perceived neighbourhood reputation relative to Time 1 we found that PEs and GWE participants had similar relative decreases, 16% and 15% respectively.

Physical environment indicators

We examine changes in three indicators of the physical quality of neighbourhoods: the identification of vacant and derelict land and buildings as a local problem; ratings of the attractiveness of local buildings; and, ratings of the attractiveness of the local environment.

Vacant land

Participants were asked if they considered vacant land or derelict buildings as problematic in their neighbourhoods. The results over time for all IATs is given in Figure 5.

Figure 5: Vacant or derelict buildings and sites identified as a problem.
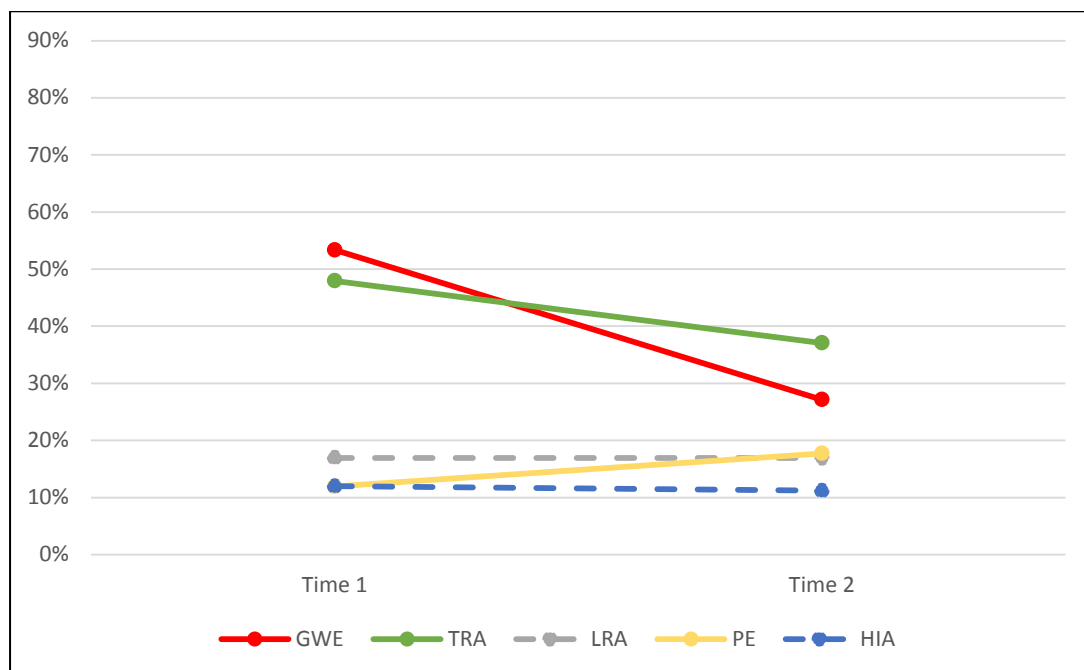
[1] Dashed line denotes a change over time that is not statistically significant.

We found that:

- Two IATs (GWE and TRAs) have seen a decrease in perceptions of problematic vacant land or derelict buildings in their area, with GWE having the largest drop of 26 points. For these two IATs, the majority of respondents considered vacant land a problem at Time 1.
- The rank position of GWE changed from fifth (worst) to fourth.
- PEs were the only IAT to perceive a significant increase in this problem going from 12% to 18%.
- For LRAs and HIAs the change in the level of vacant land or derelict buildings was not statistically significant.
- When we calculated the change in this indicator relative to Time 1 we found that GWE participants had the greatest relative decrease of 49% compared with the original value.
- As already stated, PEs perceived an increase in this problematic issue and this was a relative increase of 49% of the value reported at Time 1.

Attractiveness of buildings

Respondents were asked to rate the quality of their neighbourhood based on the attractiveness of buildings in their local area and rate this on a five-point scale from very good to very poor. Figure 6 shows the results for respondents that consider the attractiveness of buildings in their neighbourhood as very good or fairly good at both time points of the survey.

Figure 6: Attractiveness of buildings (very/fairly good).
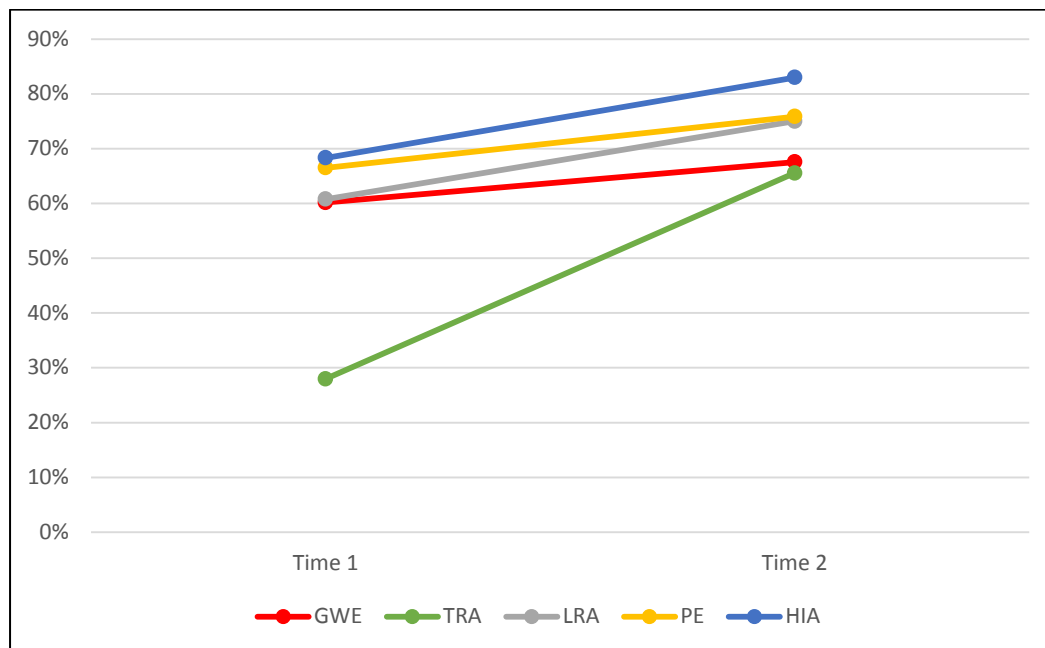
Findings:

- The majority of all respondents in IATs other than TRAs rated the attractiveness of the buildings in their area as very/fairly good at Time 1.
- All respondents across the IATs have reported a significant increase in the attractiveness of buildings in their area; the largest absolute change experienced by TRAs (38%).
- Although HIAs had the highest initial rate of satisfaction (68%) they still saw an increase at Time 2 (83%).
- The rank position of GWE on this indicator remained unchanged at fourth.
- TRAs had the greatest increase in this indicator relative to Time 1 (134%) and GWE the smallest (12%).

Attractiveness of environment

Respondents were also asked to rate the attractiveness of the local environment on a five-point scale from very good to very poor. 'Very/fairly good' responses for all IATs at both time points are shown in Figure 7.

Figure 7: Attractiveness of environment (very/fairly good).
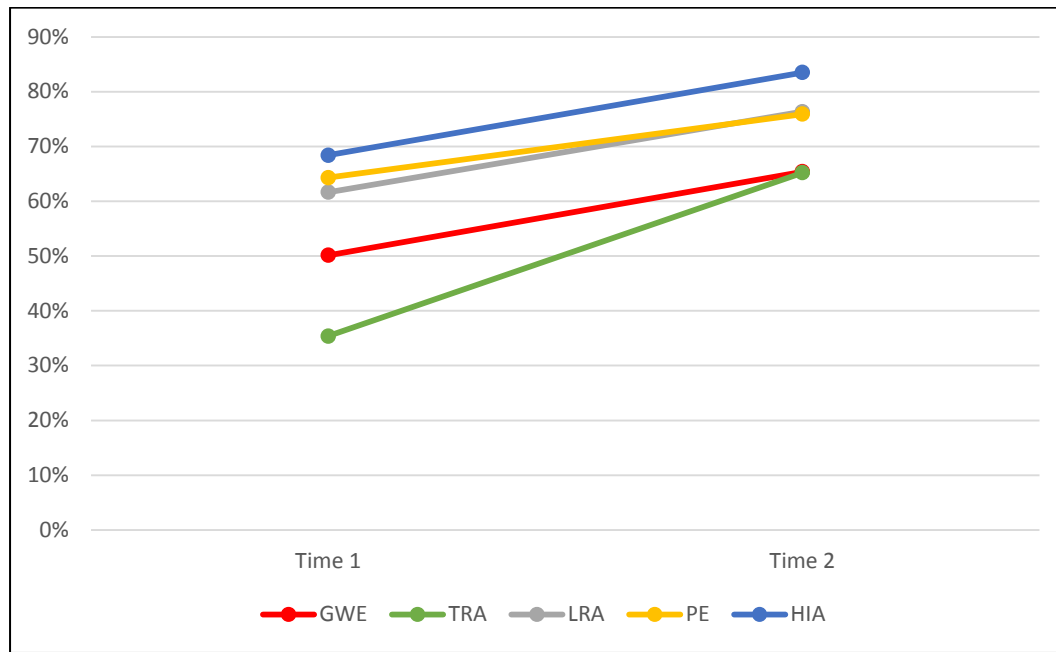
Findings:

- A significant increase in the attractiveness of the local environment was reported over time for all IATs.
- Thirty-five per cent of respondents in TRAs at Time 1 reported their local environment was attractive compared with over 50% of respondents in all other IATs. TRAs then saw the largest increase in reported environmental attractiveness (30%).
- GWE saw an absolute increase in reported environmental attractiveness of 15% though its rank position remained unchanged at fourth.
- TRAs had the greatest increase relative to Time 1 (84%) and GWE participants had the second highest relative increase (30%).
- PEs had the smallest increase relative to Time 1 (18%).

Social environment indicators

We examine change in four indicators of the local social environment: the identification of three types of antisocial behaviour in the neighbourhood, namely vandalism and property damage, drunkenness and rowdiness, and rubbish and litter on the streets; and feelings of safety when walking alone in the area at night-time.

Vandalism and graffiti

All participants were asked if they considered vandalism, graffiti and/or damage to property a problem in their neighbourhood. Figure 8 shows the proportion of respondents that found this to be a problem at each time point.

Figure 8: Vandalism, graffiti, deliberate damage to property/vehicles identified as a problem.
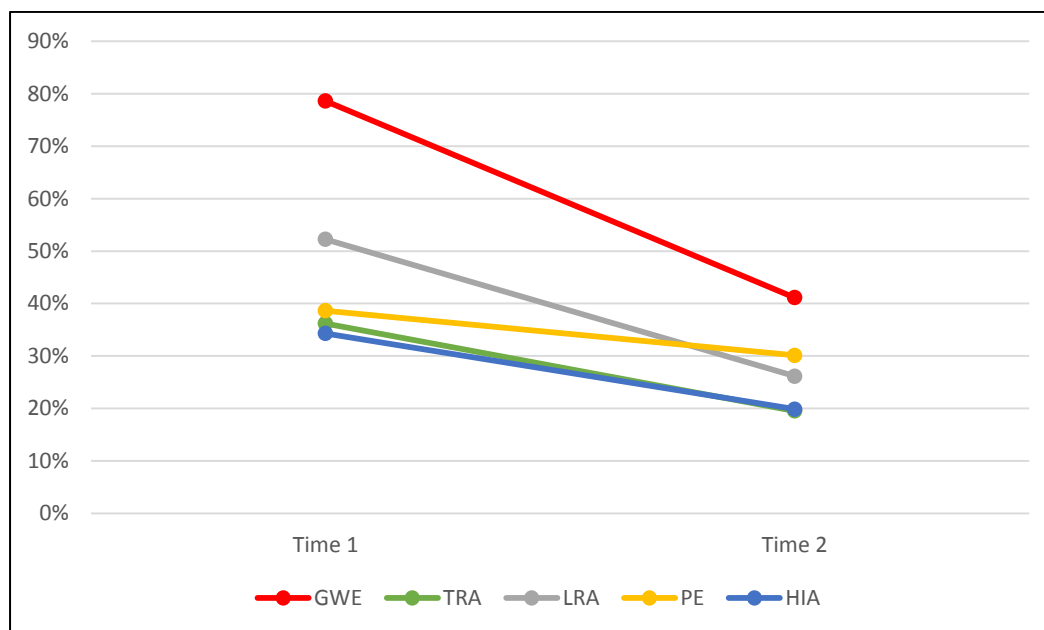
Findings:

- The proportion of respondents considering vandalism a problem has reduced significantly across all IATs.
- In two IATs (GWE and LRAs), a majority of respondents considered vandalism and graffiti problematic at Time 1.
- GWE respondents reported the largest absolute decrease in this indicator, from 78% to 41%, though its rank position remained unchanged at fifth (worst).
- PEs showed the shallowest decline but even this was a sizeable drop of 9 percentage points.
- LRAs had the greatest relative decrease of 50% of the value at Time 1.
- GWE also had a large relative decrease (48%) and PEs had the smallest relative decrease (22%).

Drunkenness and rowdiness

Respondents were asked if their neighbourhood had a problem with public drunkenness and Figure 9 shows the proportion that considered this a problem for all IATs at both time points.

Figure 9: People being drunk or rowdy in public places identified as a problem.
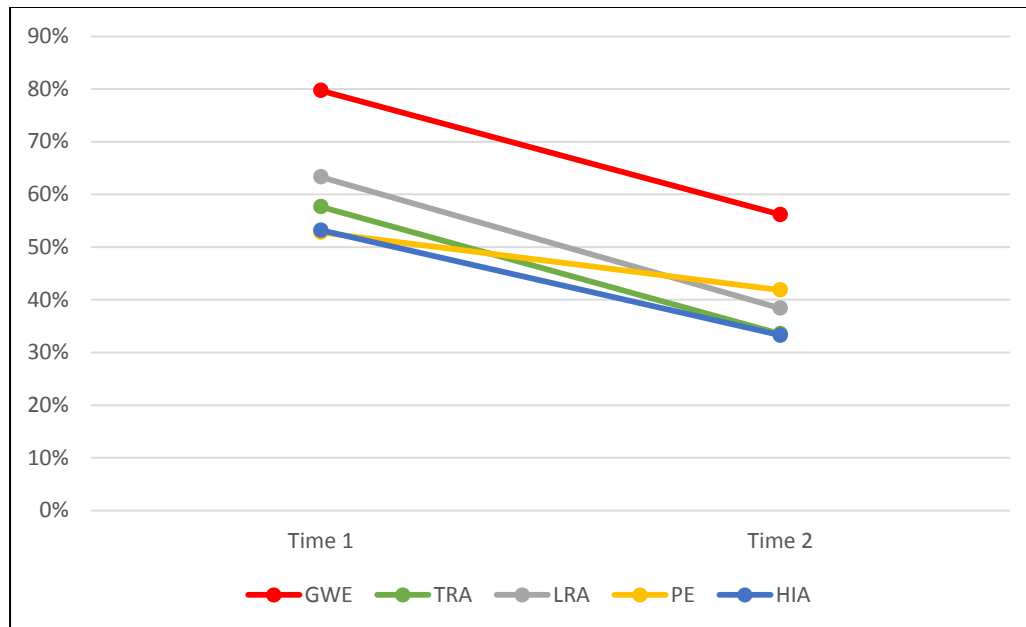
Findings:

- The majority of respondents, irrespective of IAT, considered public drunkenness a problem at Time 1.
- Residents in all IATS report less drunkenness at Time 2 than at Time 1.
- All of the IATs that were subject to some form of regeneration (LRAs, TRAs and GWE) have reported greater reductions in public drunkenness; around 25 percentage points in absolute terms.
- The rank position of GWE on this indicator remained unchanged at fifth (worst).
- As with the findings for neighbourhood vandalism, PEs have seen the smallest decline of 11 percentage points.
- When we examined the change in this indicator relative to Time 1 we found that TRAs had the greatest decrease (42%) and PEs the smallest (21%). The relative decrease for GWE was 29%.

Rubbish and litter

Respondents were asked if they thought rubbish or litter was a problem in their neighbourhood and Figure 10 shows the proportions identifying this problem at both time points for all IATs.

Figure 10: Rubbish or litter identified as a problem.
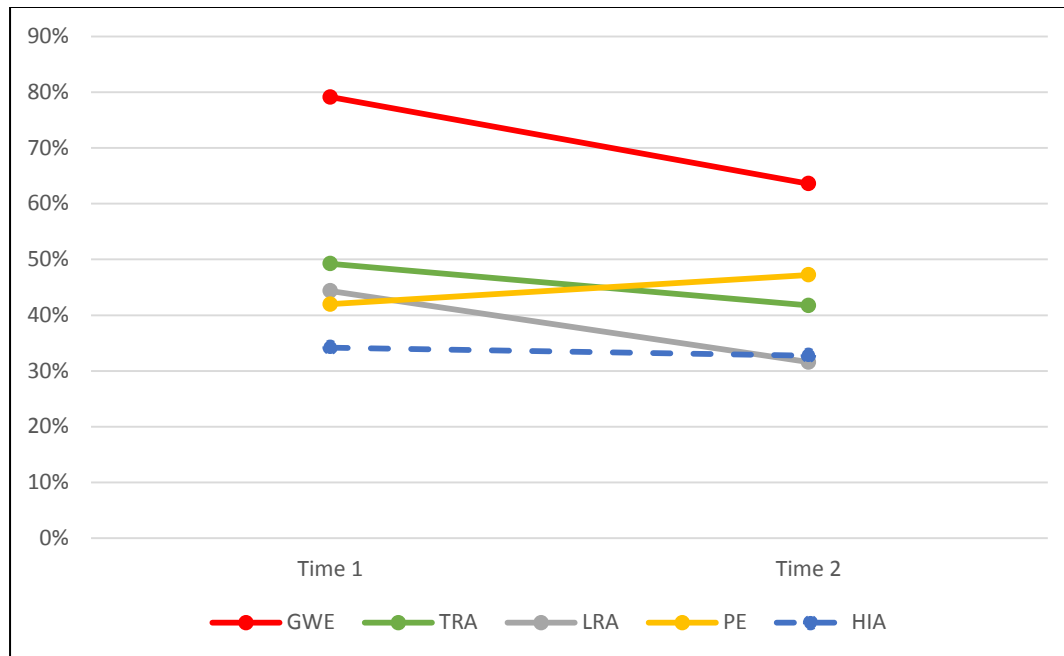
[1] Dashed line denotes a change over time that is not statistically significant.

Finding:

- The three regeneration areas (LRAs, TRAs and GWE) reported a significant decline in littering over time but respondents from PEs saw an increase in rubbish and there was no evidence of change in this measure for HIAs.
- Again, GWE reports the highest level of problematic behaviour at Time 1 and has seen a significant decrease of 15 percentage points, from 79% to 64%, by Time 2. The rank position of GWE on this indicator, however, remains unchanged at fifth (worst).
- When we calculated the relative change in this indicator we found that LRAs experienced the greatest decrease (29%) nearly a third less that at Time 1. GWE had a relative decline in the identification of litter as a problem of around a fifth, 19%.
- PEs had a relative increase in the identification of litter as a problem of 12%.

Feeling safe walking in the neighbourhood

Respondents were asked if they felt safe walking alone at night in their local area and the proportions of the sample that felt very/fairly safe by IAT are shown in Figure 11.

Figure 11: Feeling safe walking alone at night (very/fairly safe).

Findings:

- Respondents from all IATs have shown a significant increase in reported safety over time.
- All three areas that had some form of regeneration (LRAs, TRAs and GWE) reported a lower percentage feeling safe at Time 1 than PEs or HIAs. By Time 2 TRAs and GWE were reporting similar safety rates to PEs.
- TRAs saw the greatest absolute increase in reported safety of 24 percentage points.
- PEs had the smallest increase (9 percentage points) but they are the IAT with the highest proportion that reported feeling 'very/fairly safe' at Time 1 (61%).
- GWE had an absolute increase of 20 percentage points in reported safety, with its rank position changing from third to second.
- All IATs had an increase in this indicator relative to Time 1 with TRAs experiencing the greatest change (50%) and PEs the smallest (16%). GWE had a relative increase on this indicator of 38%.

Ratings of neighbourhood amenities

In this section we explore the responses when participants were asked to rate six different local amenities:– shops; youth and leisure services; parks and open spaces; children's play areas; public transport services; and paths and pavements. Amenities were rated on a five-point scale from 'very good' to 'very poor'. Their responses over time for each amenity are considered separately by IAT.

Shops

The first local amenity participants were asked to comment on were shops. Figure 12 shows the proportion of respondents that perceived the quality of their local shops as very or fairly good at both time points.

Figure 12: Perceived quality of local shops (very/fairly good).
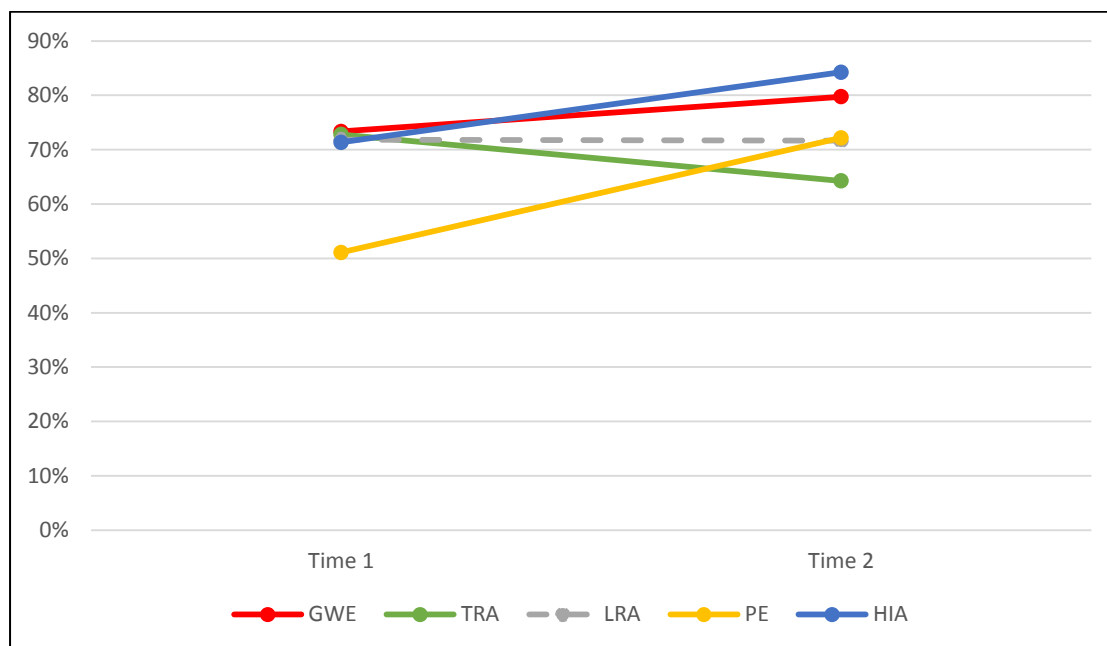
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:

- There was a mixed picture of shops, with GWE, PEs and HIAs all reporting an increase in the level of positive ratings for local shops over time. However, TRAs saw a decrease and LRAs showed no significant change.
- The largest absolute increase in the perceived quality of local shops was reported by PE residents, of 21 percentage points, although PEs had the lowest percentage of participants with positive views at Time 1 (51%).
- TRAs reported a decrease in satisfaction of 8 percentage points over time.
- GWE and HIAs had a similar proportion of positive responses at Time 1 but HIAs saw a larger increase of 12 percentage points compared with 6 points for GWE.
- The rank position of GWE dropped from first to second over time.
- When we looked at relative change PEs had the greatest increase (41%) and TRAs had a relative decrease of 12%. The relative change for GWE was+ 9%.

Youth and leisure services

Participants were asked to rate the quality of their local youth and leisure services. Figure 13 shows the proportion of respondents that have a positive opinion of their local youth leisure services by IAT at both time points.

Figure 13: Perceived quality of youth and leisure services (very/fairly good).

[1] Dashed line denotes a change over time that is not statistically significant.

Findings:

- All IATs apart from TRAs had an increase in the proportion of participants that had a positive opinion of youth and leisure services in their area.
- GWE participants saw the largest absolute increase in satisfaction of 21 percentage points. The rank position of GWE increased from fourth to third.
- PEs had the smallest increase (12 percentage points) but had the highest satisfaction rate at Time 1.
- There was no significant change in the level of satisfaction over time for TRAs.
- GWE participants saw the greatest change relative to Time 1 (+53%) and PEs the smallest (+24%).

Parks and open spaces

Figure 14 outlines the results when participants were asked to rate the quality of parks and open spaces in their area. Again, results are given for all IATs at both Time 1 and Time 2.

Figure 14: Perceived quality of parks and open spaces (very/fairly good).

Findings:

- Participants' satisfaction with parks and open spaces increased across the board from Time 1 to Time 2.
- TRAs experienced the largest absolute increase (17 percentage points) but were the IAT with the lowest initial satisfaction rate.
- GWEs had the highest rate of satisfaction (77%) of all IATs at Time 1 and still saw an increase by Time 2 (5 percentage points). The rank position of GWE fell from first to second.
- When we calculated the change in this indicator relative to Time 1 we found that TRAs had the greatest increase (27%) and GWE the smallest (6%).

Children's play areas

The fourth local service that participants were asked to rate was children's play areas. Figure 15 shows the proportion of respondents that had a positive perception of the children's play areas in their locality for all IATs at both time points.

Figure 15: Perceived quality of children's play areas (very/fairly good).

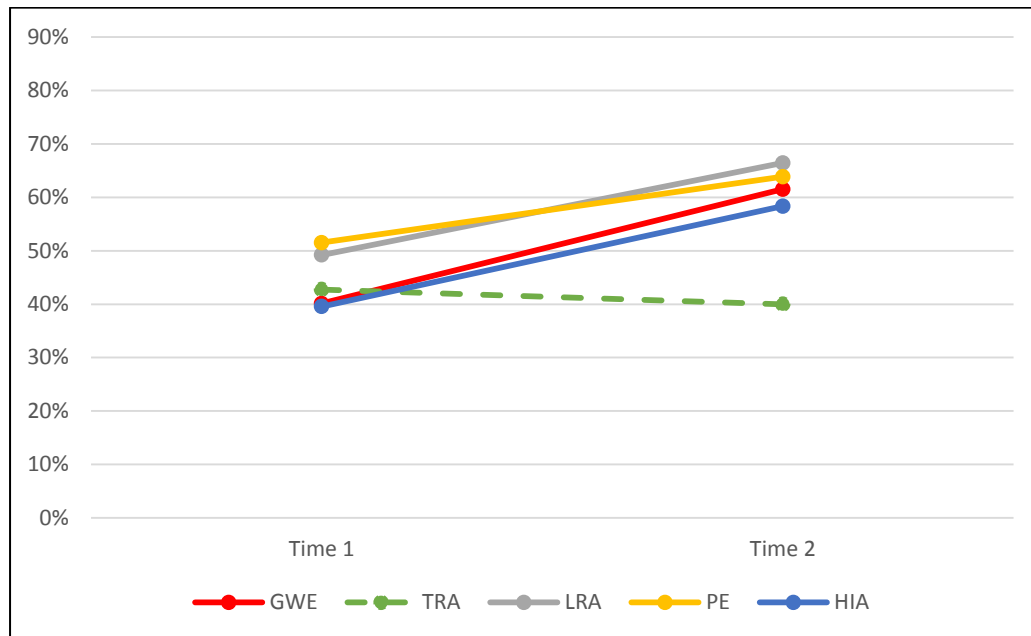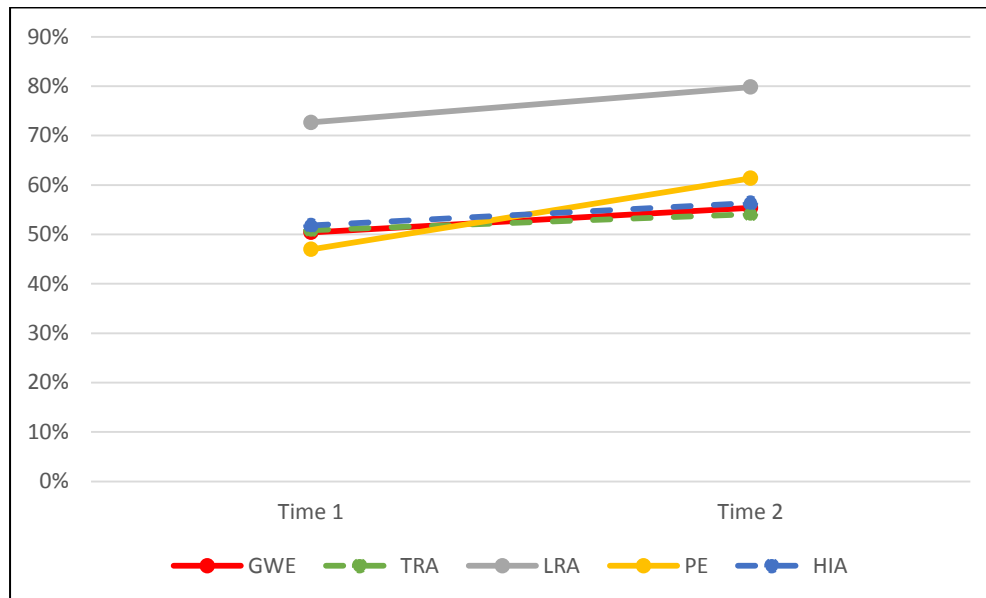[1] Dashed line denotes a change over time that is not statistically significant.

We found that:

- LRAs reported the highest level of satisfaction with children's play areas at both time points. Seventy-three per cent at Time 1 thought children's play areas were very or fairly good and this had increased to 80% by Time 2.
- PEs had the largest absolute increase in satisfaction, 14 percentage points.
- GWEs and LRAs reported a more modest increase in satisfaction, both under 10 percentage points.
- The rank position of GWE remained unchanged at fourth on this indicator.
- For both TRAs and HIAs the change in satisfaction was not statistically significant.
- PEs had the greatest increase relative to Time 1 (31%), while both GWE and LRAs had the same relative increase (10%).

Public transport

Participants were also asked to rate the quality of public transport in their area. Figure 16 shows the proportion of respondents that considered the public transport in their area to be of a very or fairly good standard at both time points for all five IATS.

Figure 16: Perceived quality of local public transport (very/fairly good).
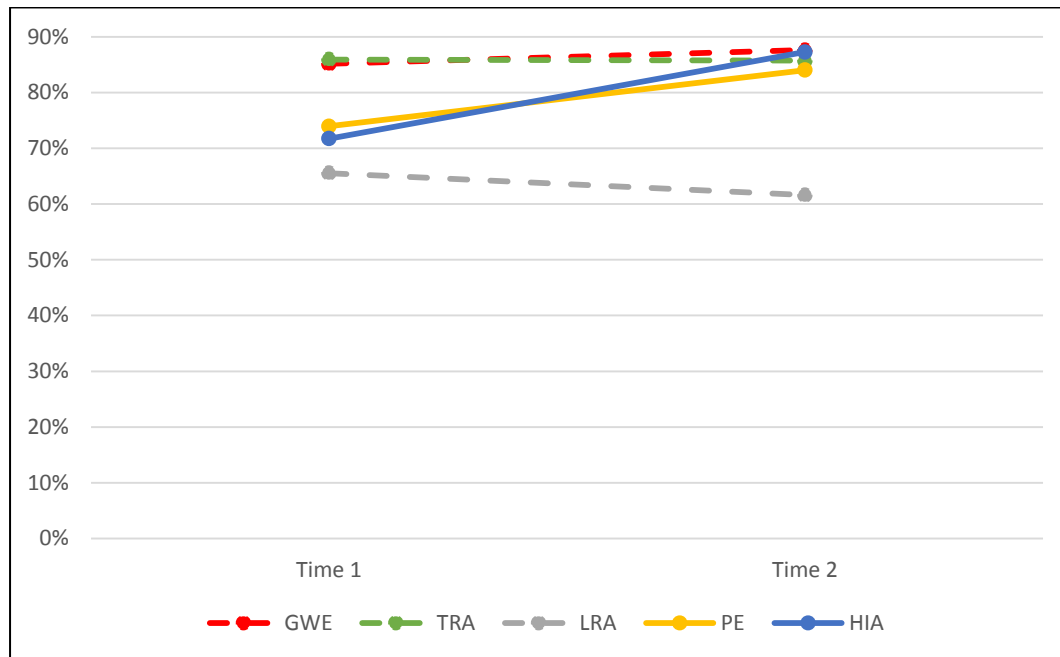
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:

- PEs and HIAs were the only IATS to report a statistically significant change in residents' ratings of local public transport, with both showing an improvement over time.
- HIAs had the largest absolute change with an increase of 15 percentage points between Time 1 and Time 2.
- None of the regeneration areas (TRAs, LRAs, GWE) saw a statistically significant change in public ratings of public transport over time.
- The rank position of GWE on this indicator changed from second to first.
- Relative to Time 1, HIAs had a greater increase than PEs, 22% compared with 14% for PEs.

Paths and pavements

The final item participants were asked to comment on was the quality of paths and pavements. Figure 17 shows the proportion of respondents that had a positive opinion of the quality of the paths and pavements in their neighbourhood and the change by IAT over time.

Figure 17: Perceived quality of paths and pavements (very/fairly good).
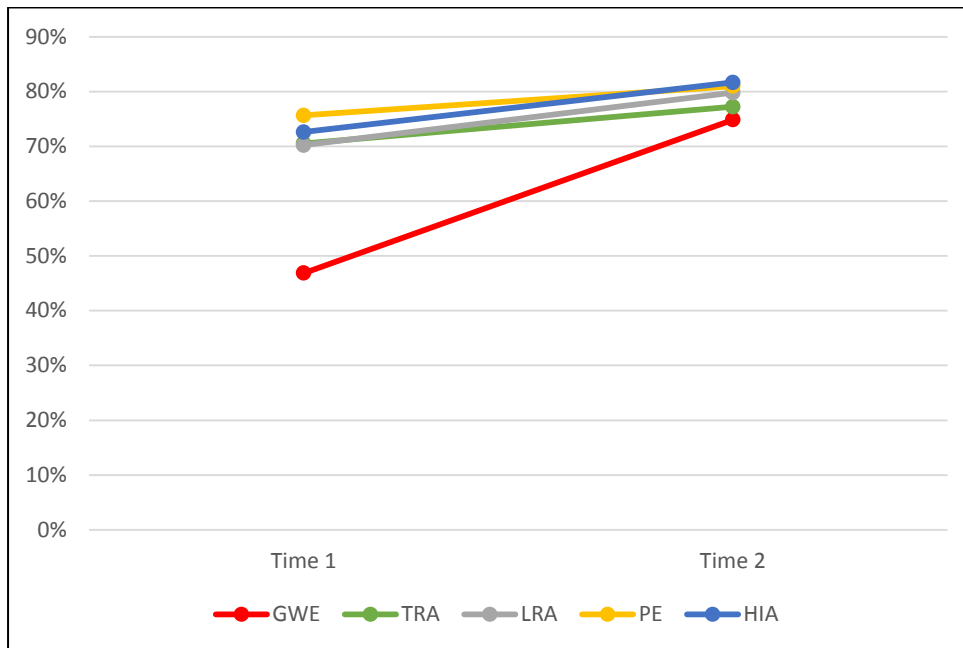
Findings:

- All IATs exhibited an increase in the proportion of respondents who thought that the quality of paths and pavements in their area is very or fairly good.
- GWE saw the largest absolute increase from 47% at Time 1 to 75% by Time 2, however the paths and pavements in GWE areas were rated the lowest at Time 1.
- GWE also had the greatest increase relative to Time 1 (60%) and PEs the smallest (7%).
- The rank position of GWE on this indicator remained unchanged at fifth (worst) although the gap between it and the other IATs was much reduced.

Housing

Participants were asked three questions in relation to their homes: to rate the physical condition of their home; to comment on whether they felt in control of their home; and to indicate whether or not their home made them feel they were doing well in life.

Physical condition

Figure 18 shows the proportion of respondents who considered the condition of their home as very or fairly good. This is presented for all IATs over both time points.

Figure 18: Rating of the overall physical condition of the home (very/fairly good).
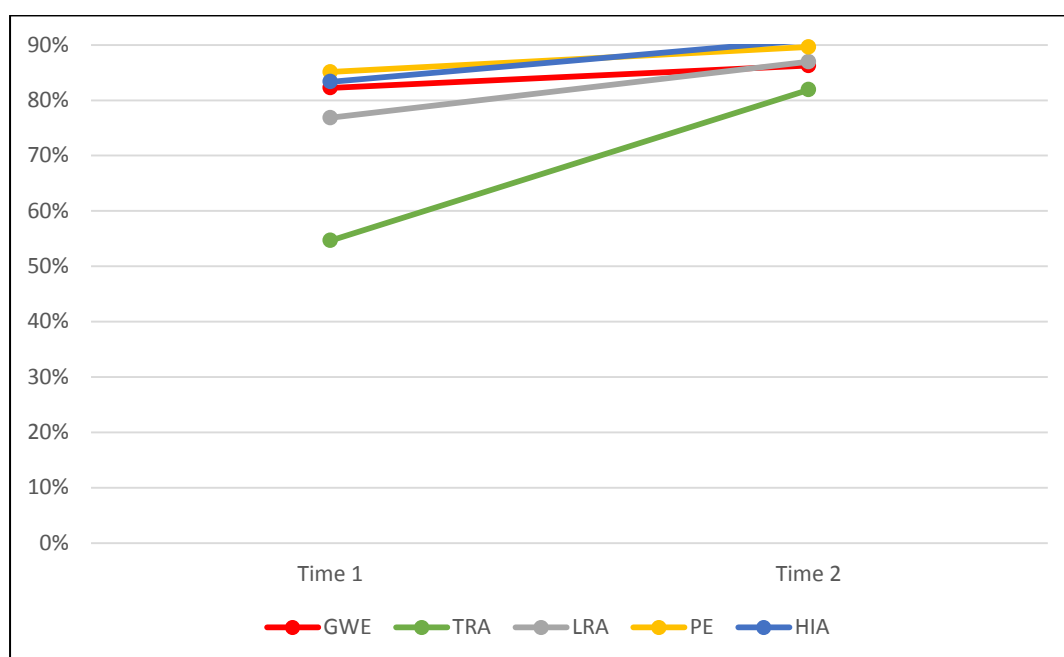
Findings:
- For all IATs there was an increase in the proportion of respondents with a positive view of the physical condition of their home.
- Starting from the lowest position TRAs saw the largest absolute increase in satisfaction of 27 percentage points, from 55% to 82%.
- PEs had the highest rate of satisfaction at Time 1 (85%), which increased slightly to 90%.
- GWE also had a high rate of satisfaction with the physical condition of homes at Time 1 (82%) and this increased by 4 percentage points by Time 2.
- The rank position of GWE on this indicator changed from third to fourth.
- When we looked at change relative to Time 1 TRAs had the greatest change with an increase of 50%. The relative change for GWE was much smaller at 5%.
- Both PEs and GWE had smaller relative increases of around 5%

Feelings of control of the home

Participants were also asked how much they agreed with the statement 'I feel in control of my home'. Figure 19 shows the proportion of respondents that agree with this statement for all IATs at both points in time.

Figure 19: Feeling in control of the home (strongly agree/agree).
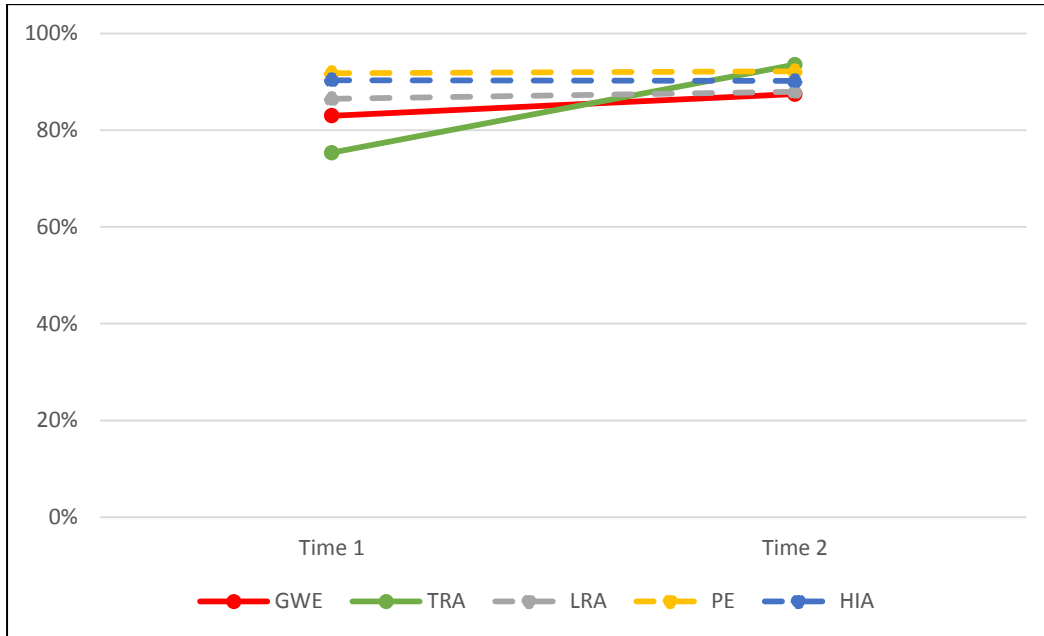
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- Only two of the five IATs saw a statistically significant change in the proportion of respondents who reported feeling in control of their homes, with the percentages rising in GWE and TRAs.
- TRAs had the greater absolute increase rising by 18 percentage points from 75% at Time 1 to 93% at Time 2.
- The absolute change for GWE was very small, and its rank position changed from fourth to fifth, although the differences between the IATs on this indicator were much smaller at Time 2.
- When change was calculated relative to Time 1 we found that TRAs had the greatest increase 24% and GWE participants had a smaller relative increase of 5%.

Sense of progress from the home

Participants were asked if they agreed with the statement that their home makes them feel that they are doing well in life. In Figure 20 we show the results for respondents that agree with this statement by IAT and at both time points.

Figure 20: Respondent's home makes them feel they are doing well in life (strongly agree/agree).
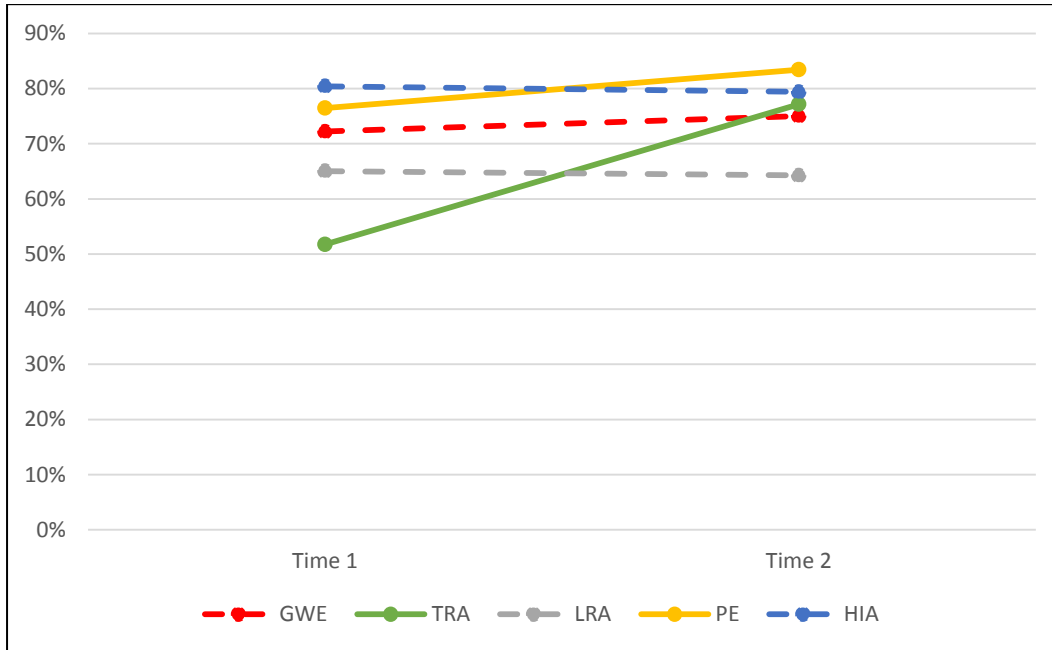
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- The change in this indicator over time was statistically significant for only two area types, with increases in the percentages who derived a sense of progress from living in their homes in the TRAs and PEs.
- TRAs had the largest absolute increase of 25 percentage points.
- The rank position of GWE changed from third to fourth.
- As is clear from Figure 20, TRAs also had the greatest increase relative to the response at Time 1 (49%). PEs had a much smaller relative change (+9%).

3.2 Relative change in indicators across IATs

In this section we focus on relative change in the indicators compared with their baseline position for GWE and each of the other IATs.

Table 3 lists all of the neighbourhood- and housing-related measures and indicates whether or not GoWell East participants (GWE) have better outcomes over time than the other intervention area types when change relative to Time 1 is measured. The four other area types have been divided into two groups: the regeneration areas, TRAs and LRAs; and the non-regeneration areas, PEs and HIAs.

Table 3. Housing and neighbourhood indicators: relative change in GWE compared with other IATs.

	Regeneration areas		Non-regeneration areas	
	TRA	**LRA**	**PE**	**HIA**
Neighbourhood overall:				
Neighbourhood satisfaction	X	X	✓	✓
Neighbourhood has changed for the better	X	X	X	✓
Neighbourhood makes respondent feel they are doing well in life	X	✓	✓	✓
Neighbourhood has a bad external reputation	✓	✓	X	X
Physical environment:				
Vacant or derelict buildings and sites	✓	✓	✓	✓
Attractive buildings	X	X	X	X
Attractive environment	X	✓	✓	✓
Social environment:				
Vandalism, graffiti and property damage	✓	✓	✓	✓
Drunkenness and rowdiness	✓	✓	✓	✓
Litter and rubbish on the streets	✓	✓	✓	✓
Feelings of safety walking alone at night	X	✓	✓	✓
Quality of neighbourhood amenities:				
Shops	✓	✓	X	X
Youth and leisure services	✓	✓	✓	✓
Parks and open spaces	X	X	X	X
Children's play areas	✓	✓	✓	✓
Public transport	✓	✓	X	X
Paths and pavements	✓	✓	✓	✓
Housing:				
Overall physical condition of home	X	X	X	X
Respondent feels in control of home	X	✓	✓	✓
Home makes respondent feel they are doing well in life	X	✓	X	✓

✓ Relative change on indicator from T1 to T2 is more positive in the case of GWE than for the comparison IAT.

One way of summarising the picture is to consider GWE against each of the other IATs. Here we focus on the two regeneration IATs in turn.

Comparing GWE with the TRAs in terms of relative change over time:
- GWE outperformed the TRAs on ten of the 20 neighbourhood and housing indicators.
- The TRAs performed better than GWE on three of the four overall neighbourhood indicators. GWE performed better in respect of neighbourhood reputation.
- In relation to the physical environment, GWE performed better than the TRAs for improvements in vacant and derelict land and buildings, but worse in terms of the attractiveness of buildings and the environment.
- Issues in the social environment improved more in relative terms in GWE than in the TRAs for three of the four indicators examined, the exception being feelings of safety at night.
- By Time 2 GWE showed greater relative change in the perceived quality of five of the six neighbourhood amenities than the TRAs, the exception being parks and open spaces.
- Relative improvement on all three housing indicators was greater in the TRAs than in GWE.

Comparing relative change in the GWE sample with the corresponding group from LRAs:
- GWE outperformed the LRAs on 15 of the 20 neighbourhood and housing indicators.
- GWE performed better than the LRAs on two of the overall neighbourhood indicators: the forward-looking indicator of the neighbourhood informing a positive sense of personal progress; and on improvement in the neighbourhood's external neighbourhood reputation.
- GWE performed better than the LRAs on two of the three physical environmental indicators: vacant and derelict land and attractiveness of the environment, but not in respect of the attractiveness of buildings.
- GWE performed better than the LRAs in relative terms in respect of all four social environmental indicators.
- As with the TRAs, GWE performed better than the LRAs on five of the six neighbourhood amenity quality indicators.
- GWE performed better than the LRAs on the two housing psychosocial benefit indicators, namely feelings of personal progress and control, but not in respect of the physical condition of homes.

GWE also performed better in relative terms over time on the majority of indicators when compared with both the PEs (12 indicators) and HIAs (14 indicators).

A second way of summarising the situation is to consider the relative performance of GWE on particular indicators in relation to all the other IATs together.

There are several indicators where GWE outperformed most other areas (i.e. three or four of the other IATs) in relative terms over time. These include the following indicators:
- Sense of personal progress derived from the neighbourhood.
- Physical indicators of vacant and derelict land and buildings, and the attractiveness of the local environment.
- Social environment indicators of problems of vandalism, drunkenness, litter, and on feelings of safety.
- The perceived quality of neighbourhood amenities for youth and leisure, children's play areas, and paths and pavements.
- Feelings of being in control of one's home.

In contrast, there are a few indicators where the performance of GWE was worse than most other areas in respect of relative change over time. These indicators include:

- Perceptions that the neighbourhood has changed for the better in recent years.
- Physical indicators of the attractiveness of buildings and the overall condition of homes.
- The perceived quality of parks and open spaces.

Lastly, it is worth noting indicators where relative change in GWE was better than in the regeneration areas (TRAs and LRAs) but worse than in the non-regeneration areas (HIAs and PEs). These included:
- External neighbourhood reputation.
- The quality of shops.
- The quality of public transport.

3.3 The influence of area type after controlling for socio-demographic factors

In this section, we examine whether GWE or each of the other IATs is significantly associated with each of the outcomes at each time point, after taking into account respondent characteristics including gender, age, household type, length of residence, housing tenure and employment status. This enables us to consider whether the area type itself appears to have a positive or negative effect on the outcome, adjusting for the fact that respondent characteristics vary between the IATs.

We present results from regression modelling of the outcomes in the five groupings of variables, as above. In doing this, we use HIAs as the reference category for the IAT variable, being the area which often had the better values on the outcome variables.

Overall neighbourhood indicators

Table 4 lists the odds ratios for all variables included in the first four models at both time points and indicates the significance level of each one.

Table 4. Models for overall neighbourhood indicators 1 to 4 with odds ratios and significance level.

Variables in the model	1. Neighbourhood satisfaction		2. Overall change in neighbourhood		3. Neighbourhood doing well		4. Neighbourhood bad reputation	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Gender:								
Male (ref)								
Female	0.76***	0.74*	0.88	0.90	0.93	0.91	1.21*	1.16
Age	1.01**	1.01	0.99	0.99	1.01***	1.01	0.99*	0.98****
Length of residence:								
3-10 years (ref)								
<2 years	1.16	1.57***	0.86	1.01	1.16	1.29*	0.67****	0.74**
11+ years	0.93	0.99	0.91	0.93	1.01	0.89	1.00	0.93
Household type:								
Pensioner hhld (ref)								
Hhld with children	0.56**	0.58*	0.81	1.23	0.42****	0.98	1.32	0.96
Hhld without children	0.61*	0.79	0.78	1.12	0.53****	0.79	1.25	0.87
IAT:								
HIA (ref)								
GWE	0.85	0.51****	1.50***	1.35*	0.50****	0.74*	3.06****	2.33****
TRA	0.58****	0.85	0.48****	3.81****	0.49****	1.01	1.69****	1.72****
LRA	1.04	0.64*	1.06	2.24****	0.93	0.62***	1.04	1.60***
PE	1.24	1.03	0.66***	1.19	0.89	1.02	2.08****	1.94****
Tenure:								
Social renter (ref)								
Private renter	0.91	1.06	0.66*	0.70	1.54**	0.84	0.90	0.93*
Owner occupier	0.89	0.94	1.01	1.17	0.78*	1.13	1.24	1.03
Tenure other	0.77	0.74	0.38*	1.41	1.65	1.64	0.97	2.72
Employment status:								
Working (ref)								
Out of work	1.07	0.92	0.76***	0.97	0.94	0.89	0.79*	0.95
Retired	0.87	1.31	0.84	1.15	0.96	1.49*	0.71	0.90

Note: **** p<.001, *** p<.005, ** p<.01, * p<.05.

At Time 1 we can see the following effects of GWE residence, compared with that of the other IATs:

- GWE residence had no effect upon neighbourhood satisfaction, whereas TRAs had a negative effect on this indicator.
- GWE had a positive effect upon the identification of the neighbourhood changing for the better, i.e. the odds of doing so were 50% higher in GWE. TRAs had the opposite effect of lowering the odds of identifying positive neighbourhood change.
- GWE had a negative effect upon respondents reporting a sense of personal progress from living in their neighbourhood, lowering the odds of them doing so by 50%. A similar effect was evident for TRAs.
- GWE had a negative effect upon perceived neighbourhood external reputation, with GWE respondents being three times more likely to report a negative area reputation than respondents in HIAs. Negative effects on this indicator were also evident for TRAs and PEs, although the size of the effects were smaller in these cases.

At Time 2 we can see the following effects of GWE residence, compared with that of the other IATs:

- GWE residence now has a negative effect upon neighbourhood satisfaction, lowering the odds of being very satisfied compared with HIAs by 49%. A similar though lesser effect is seen in LRAs.
- GWE continued to have a positive effect upon the perceptions of the neighbourhood changing for the better, increasing the odds of doing so by 35%. A much greater positive effect is also seen in both types of regeneration area with LRAs twice as likely and TRAs nearly four times as likely to see a positive change in the neighbourhood as residents of HIAs.
- The negative effect of GWE residence upon respondents deriving a sense of personal progress from living in their neighbourhood has been reduced slightly, though it still exists. In similar fashion, the negative effect of TRA on this indicator no longer exists. LRA residence now also has a negative effect on this indicator.
- GWE continues to have the largest negative effect upon perceptions of a negative external neighbourhood reputation, although the size of the effect is reduced from three-fold to two-fold. The negative effects of TRAs and PEs on this indicator are largely unchanged, and LRAs now also has a negative effect on perceived area reputation.

Physical environment indicators

Table 5 lists the three models that relate to the physical environment indicators which include: problems with vacant or derelict buildings; the attractiveness of local buildings; and the attractiveness of the local environment. As before the exponential of the coefficient is given for each variable in the model and the significance level is noted.

Table 5. Models for physical environment indicators (5 to 7) with odds ratios and significance level.

Variables in the model	5. Vacant/Derelict buildings		6. Attractive buildings		7. Attractive environment	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Gender:						
Male (ref)						
Female	1.12	1.22*	0.88	0.93	0.79***	0.82*
Age	0.99	0.99	1.02****	1.03****	1.02****	1.03****
Length of residence:						
3-10 years (ref)						
<2 years	0.87	0.54****	1.33**	1.20	1.38***	1.40**
11+ years	0.92	1.15	0.94	0.67****	0.93	0.63****
Household type:						
Older hhld (ref)						
Hhld with children	1.56	1.24	0.70	0.87	0.63*	1.08
Hhld without children	1.41	1.29	0.86	0.88	0.75	1.02
IAT:						
HIA (ref)						
GWE	7.01****	2.35****	0.93	0.46****	0.61****	0.41****
TRA	5.97****	4.35****	0.22****	0.34****	0.37****	0.30****
LRA	1.39	1.23	0.84	0.79	1.08	0.80
PE	0.70	1.63***	1.11	0.90	1.27	0.79
Tenure:						
Social renter (ref)						
Private renter	1.25	1.94****	1.29	1.50**	1.75***	1.18
Owner occupier	1.56****	1.01	0.85	1.16	0.95	1.00
Tenure other	1.62	2.58	0.95	1.45	1.42	1.04
Employment status:						
Working (ref)						
Out of work	0.97	0.79*	1.07	0.86	1.02	0.81
Retired	0.76	0.99	1.00	0.71	1.02	0.80

Note: **** p<.001, *** p<.005, ** p<.01, * p<.05

At Time 1 we can see the following effects of GWE residence, compared with that of the other IATs:

- GWE had a large negative effect upon the indicator of vacant and derelict land, with residents being seven times more likely to say this was a problem in their area, compared with those people living in HIAs. A similar large effect was also evident in TRAs but not in LRAs or PEs.
- GWE had no effect upon the perceived attractiveness of buildings in contrast to TRAs where respondents were nearly four-fifths less likely to rating buildings as attractive, compared with those in HIAs.

- GWE residence had a negative effect upon the perceived attractiveness of the local environment, with respondents being 39% less likely to rate the environment as attractive compared with HIA residents. A larger negative effect also existed for participants in TRAs.

At Time 2 the following effects of GWE residence were evident:

- GWE residence still had a negative effect upon the identification of vacant and derelict land and buildings as a local problem but the size of the effect, a doubling of the likelihood of the problem being identified compared with respondents in HIAs, is much reduced, and now smaller than the negative effect of TRAs. PEs now also have a negative effect on this indicator.
- GWE now had a negative effect on the likelihood that someone will rate the attractiveness of buildings in their area as attractive, similar to the effect of TRA residence at T2.
- GWE continues to have a negative effect upon the perceived attractiveness of the local environment, as do TRAs, with this effect greater than at T1.

Social environment indicators

Table 6 shows the results from the four models relating to social environment indicators, as before, all variables are listed with the corresponding exponential coefficient and the statistical significance is noted.

Table 6. Models for social environment indicators (8 to 11) with odds ratios and significance level.

	8. Vandalism		9. Drunkenness		10. Litter		11. Feel safe after dark	
Variables in the model	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Gender:								
Male (ref)								
Female	1.16	1.07	0.92	1.06	1.05	1.15	0.41****	0.45****
Age	0.98****	0.99***	0.99	0.99**	0.99*	0.99***	0.98****	0.99**
Length of residence:								
3-10 years (ref)								
<2 years	0.55****	0.51****	0.59****	0.60****	0.69****	0.55****	0.99	1.09
11+ years	1.46****	1.18	1.17	1.06	1.29*	1.15	1.14	1.10
Household type:								
Older hhld (ref)								
Hhld with children	1.09	1.13	2.05****	1.05	2.16****	1.12	1.10	1.88***
Hhld without children	1.04	1.09	1.73***	0.99	1.76***	1.02	1.30	1.56***
IAT:								
HIA (ref)								
GWE	6.17****	3.13****	2.32****	2.11****	5.80****	3.15****	1.09	0.77*
TRA	1.12	1.21	1.18	0.88	1.62****	1.45**	0.63***	0.84
LRA	1.96****	1.57**	1.26	1.16	1.17	0.89	0.70*	0.56****
PE	0.98	1.97****	0.83	1.29*	1.01	1.83****	1.30*	0.84
Tenure:								
Social renter (ref)								
Private renter	1.01	1.28	1.65**	1.07	1.04	1.09	1.05	1.01
Owner occupier	1.22	1.03	1.37*	0.86	1.38*	1.07	1.27*	1.42**
Tenure other	0.97	1.93	1.37	1.38	1.11	1.37	0.66	1.28
Employment status:								
Working (ref)								
Out of work	0.96	0.86	0.84	0.83	0.89	0.88	0.89	0.73
Retired	0.68*	0.67*	0.75	0.60***	0.92	0.79	0.91	0.67

Note: **** p<.001, *** p<.005, ** p<.01, * p<.05

At Time 1 we can see the following effects of GWE residence on indicators of the local social environment:

- GWE residence had a large negative effect upon the indicator of vandalism, graffiti and property damage, with respondents being six times more likely to identify this problem in their neighbourhood than people living in HIAs. A smaller, negative effect was also evident for LRAs.
- GWE, alone among the IATs, had a negative effect upon the indicator of drunkenness, with participants in this area being twice as likely to identify the problem as those in HIAs.
- GWE had a large negative effect upon the indicator of rubbish and litter, with participants being nearly six times more likely to identify the problem in their neighbourhood as those living in HIAs. A much smaller, negative effect existed for those living in TRAs.
- GWE residence had no effect on feelings of safety walking alone at night. In contrast, the two regeneration area types each had a negative effect on feelings of safety at night, while PEs had a positive effect.

At Time 2 the following effects of GWE residence were evident:

- The negative effect of GWE on the identification of vandalism as a problem still existed, though the size of the effect was halved compared with Time 1. The negative effect of LRAs was again smaller, and largely unchanged. PEs now also had a negative effect on the vandalism indicator.
- The negative effect of GWE on the identification of drunkenness as a problem was largely unchanged. PEs now also had a negative effect on this indicator, though of much smaller size.
- The negative effect of GWE on the indicator of rubbish and litter as a local problem still existed but the size of effect was halved compared with Time 1. The negative effect of TRAs on this indicator was largely unchanged. PEs now also had a negative effect on rubbish and litter.
- GWE now had a small negative effect upon feelings of safety walking at night, and LRAs continued to also have a negative effect. The negative effect of TRAs and the positive effect of PEs from T1 were both no longer evident.

Quality of neighbourhood amenities

Table 7 shows the models relating to six neighbourhood amenities. Participants were asked to rate the quality of these local amenities and the following models are based on whether they consider the quality to be very or fairly good.

At Time 1 the following effects of GWE residence on participants' ratings of the quality of local amenities were evident:

- GWE had no effect upon the rating of local shops. In contrast, those living in PEs were less likely to rate local shops as good compared with people living in HIAs.
- GWE had no effect upon the rating of youth and leisure services. However, those living in LRAs and PEs were twice as likely to rate youth and leisure services as good compared with those living in HIAs.

- GWE residence had a positive effect on the rating of local parks and open spaces, with participants twice as likely to rate them as good compared with HIA residents. Positive effects were also seen for LRAs and PEs.
- GWE had no effect on the rating of local children's play areas. There was however a large positive effect for LRAs and smaller positive effects for those living in TRAs and PEs.
- GWE had a positive effect upon participants' ratings of local public transport services, with a similar positive effect also evident for TRAs.
- GWE had a negative effect upon the rating of the quality of local paths and pavements. In contrast, a positive effect on this indicator existed for PEs.

Table 7. Models for neighbourhood amenities indicators (12 to 17) with odds ratios and significance level.

	12. Shops		13. Youth Leisure		14. Parks & open spaces		15. Children's play areas		16.Public transport		17. Paths & pavements	
Variables in the model	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Gender:												
Male (ref)												
Female	0.73****	0.86	0.85	0.77**	0.73****	0.74***	0.77***	0.67****	0.86	1.12	0.83*	0.72***
Age	0.99	0.99*	0.99	1.00	1.01*	1.00	0.99	0.99	1.00	0.99	0.99*	0.99
Length of residence:												
3-10 years (ref)												
<2 years	1.03	0.96	1.18	1.32*	1.19	1.20	0.99	1.32*	1.16	0.97	1.50****	1.36*
11+ years	0.87	0.76*	0.94	0.93	0.65****	0.70***	0.63****	0.79*	0.71***	0.73*	0.83*	0.74**
Household type:												
Older hhld (ref)												
Hhld with children	1.08	0.89	0.67	0.96	0.72	0.76	0.43****	0.64*	0.86	0.93	0.83	0.91
Hhld without children	0.79	0.77	0.64*	0.88	0.86	1.05	0.62***	0.76	0.81	0.81	0.85	0.86
IAT:												
HIA (ref)												
GWE	1.13	0.63***	1.24	1.41*	1.94****	1.59***	1.28	0.90	2.17****	1.37	0.35****	0.62***
TRA	0.96	0.35****	1.37	0.44****	1.29	1.24	1.77****	0.87	1.87****	1.64*	0.87	0.86
LRA	0.95	0.39****	2.06****	1.72***	2.69****	2.29****	4.74****	3.46****	0.75	0.34****	0.99	0.76
PE	0.36****	0.43****	1.96****	1.47**	1.54***	1.25	1.45**	1.41*	1.23	1.16	1.47**	0.99
Tenure:												
Social renter (ref)												
Private renter	1.17	0.74	0.87	0.65**	2.40****	1.06	1.86****	1.01	1.13	1.13	1.32	0.71*
Owner occupier	0.81	0.82	0.67***	1.06	1.98****	1.35*	1.53***	1.38*	1.06	1.28	0.81	0.83
Tenure other	2.43	0.94	0.99	1.20	3.01	1.44	2.14	1.29	3.47E+08	3.62E+08	1.39	0.55
Employment status:												
Working (ref)												
Out of work	0.98	1.15	0.91	0.94	0.83*	0.97	1.00	0.98	1.05	1.26	0.84	1.01
Retired	0.76	1.02	0.93	1.07	0.87	1.39	0.94	1.17	0.62*	0.95	1.18	1.13

Note: **** p<.001, *** p<.005, ** p<.01, * p<.05

At Time 2, the following effects of GWE residence were evident:

- GWE now had a negative effect upon the rating of local shops, with participants a third less likely to rate local shops as good compared with those living in HIAs. Negative effects also existed for TRAs, LRAs and PEs.
- GWE now had a positive effect on the rating of youth and leisure services with participants 40% more likely to rated such services as good, compared with those living in HIAs. Similar positive effects existed for those living in LRAs and PEs, while there was a negative effect for those living in TRAs.
- The positive effect of GWE residence upon the rating of the quality of local parks and open spaces remained but was reduced slightly by T2. The positive effect of LRAs on this indicator also remained while that for PEs disappeared.
- GWE continued to have no effect on the rating of children's play areas. The positive effect of TRAs from Time 1 disappeared, while the positive effects of LRAs and PEs remained.
- The positive effect of GWE on ratings of public transport disappeared while the positive effect from TRAs remained. LRA residence now had a negative effect on the rating of public transport.
- The negative effect of GWE on the rating of the quality of local paths and pavements remained, though its effect was reduced in size compared with Time 1. The positive effect of PEs on this indicator disappeared.

Housing indicators

Table 8 shows the three models relating to housing indicators. Participants were asked to rate the physical condition of their home, whether it makes them feel that they are doing well in life and if they feel in control of their home. All variables are listed with the corresponding exponential coefficient and the statistical significance is noted.

At Time1, the following effects of GWE residence were evident:

- GWE had no effect upon the rating of the physical condition of people's homes. TRA residence had a negative effect on this indicator while PEs had a positive effect.
- GWE had a negative effect on feelings of progress in life derived from the home. Those in GWE were a third less likely to say that they derived this psychosocial benefit compared with those living in HIAs. There were similar negative effects from living in TRAs and LRAs.
- GWE had a negative effect on feeling in control of one's home, with participants half as likely to report this feeling compared with those living in HIAs. A similar negative effect existed for those living in TRAs.

At T2, the effects of GWE residence were as follows:

- GWE residence now had a negative effect on ratings of the physical quality of people's homes, with participants more than half as likely to rate their home's condition as good compared with those living in HIAs. Similar negative effects existed for those living in TRAs and LRAs.
- GWE residence no longer had a negative effect on feelings of personal progress derived from the home. The negative effect of TRA residence also disappeared, while that for LRAs remained. Living in the PEs now had a positive effect on this indicator.
- GWE residence no longer had a negative effect on feeling in control of one's home. The negative effect of TRA residence also disappeared.

Table 8. Models for housing related indicators (18 to 20) with odds ratios and significance level.

Variables in the model	18. Physical condition		19. Doing well		20. In control	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Gender:						
Male (ref)						
Female	0.96	0.82	1.08	1.04	0.96	0.95
Age	1.02***	1.02**	1.00	1.00	1.01	1.01
Length of residence:						
3-10 years (ref)						
<2 years	1.69****	1.59***	1.19	1.48***	0.97	1.06
11+ years	1.09	0.81	1.03	1.12	1.01	1.00
Household type:						
Older hhld (ref)						
Hhld with children	0.55*	0.62	0.38****	0.91	0.52*	1.43
Hhld without children	0.84	1.11	0.49****	1.03	0.64	1.45
IAT:						
HIA (ref)						
GWE	0.93	0.44****	0.64***	0.84	0.46****	0.77
TRA	0.30****	0.45***	0.36****	0.99	0.41****	1.44
LRA	0.74	0.60*	0.59***	0.53****	0.65	0.87
PE	1.52*	0.77	1.04	1.46*	1.35	1.48
Tenure:						
Social renter (ref)						
Private renter	1.46	1.22	1.17	0.81	1.04	0.67*
Owner occupier	2.87****	2.34****	1.85****	2.09****	3.38****	1.78*
Tenure other	3.10	2.14	1.39	1.87	1.12	0.45
Employment status:						
Working (ref)						
Out of work	0.93	0.89	0.86	0.80*	0.84	0.75
Retired	1.22	1.39	1.01	1.72*	0.91	1.83

Note: **** p<.001, *** p<.005, ** p<.01, * p<.05

3.4   Summary

Across 18 of the 20 neighbourhood and housing indicators GWE had positive absolute change over time and this was statistically significant. However, in terms of absolute change, GWE outperformed the other IATs for just six of these indicators, three of which were related to the identification of antisocial behaviours in the local environment. The rank position of GWE among the IATs remained unchanged in respect of most indicators. This is possibly due to the weak position of GWE compared with the other IATs at Time 1 where it was ranked last or second last for 14 out of the 20 indicators. There were three indicators where the rank position of GWE improved: one related to the physical environment – identification of vacant and derelict land and buildings as a problem; and two related to local amenities – youth and leisure services and public transport, two sectors where there has been much investment in the area for the Commonwealth Games.

When we examine change over time relative to an IAT's position at Time 1 there is evidence that GWE is improving in relative terms. It outperforms TRAs across half of the indicators and outperforms LRAs for 15 out of 20 indicators. GWE also outperformed the non-regeneration areas in relative change for a majority of indicators: 12 out of 20 in the case of PEs and 14 out of 20 in the case of HIAs. Compared with the other IATs, the performance of GWE was strongest in terms of relative change in relation to indicators of the social environment, the identification of vacant and derelict land and buildings, and the perceived quality of some local amenities, notably youth and leisure services, children's play areas and paths and pavements.

After taking other socio-demographic and residential characteristics of the respondents into account, residing in GWE was found to have a negative effect on 14 of the 20 indicators at Time 2. For eight of the indicators, the negative effect of GWE residence had lessened over time, with this most consistently being the case for the social environment indicators, while for six of the indicators the negative GWE effect had worsened over time. Compared with the other regeneration areas, the effects of GWE residence on outcomes at Time 2 were more often worse (i.e. more negative) rather than better (i.e. positive or less worse). At Time 2 there were three indicators for which GWE residence had a positive effect, being perceptions of area change for the better, and ratings of and parks and open spaces and the quality of youth and leisure services. In the case of the first two of these, the positive GWE effect at Time 1 had remained, though lessened over time.

4 Communities

In this chapter we focus on the topic of community. This involves measuring the change over time for each intervention area type over nine different indicators covering two main themes:

- Psychosocial benefits participants derive from their community.
- Social contact and support.

The chapter is divided into three parts as follows:

Part one. An examination of change from Time 1 to Time 2 in each of the indicators by IAT, under the two areas of interest. Here we are particularly interested in absolute changes in the indicators and in the rank position of GWE among the IAT groups, although we also report on relative changes in the indicators for each IAT.

Part two. A summary and overview of relative changes in the indicators, comparing the performance of GWE against the other regeneration and non-regeneration IATs.

Part three. Statistical modelling of each indicator to assess whether, at Time 1 and at Time 2, IAT is significantly associated with the outcome in question, after controlling for other socio-demographic and residential factors. Within this, we are particularly interested in whether living in the GWE area is positively or negatively associated with each outcome at the two time points.

## 4.1   Absolute changes on indicators and IAT rank positions

Psychosocial benefits of community

First we examine the psychosocial benefits of community by asking participants about the internal reputation of their neighbourhood, whether they can influence decisions made about the area and if they feel a part of the community.

Neighbourhood reputation

Respondents were asked to indicate how much they agreed with the statement that 'people who live in this neighbourhood think highly of it'. Figure 21 shows the percentage of participants that agreed and/or strongly agreed with the statement by IAT and at both time points.

**Figure 21: People who live in the neighbourhood think highly of it (strongly agree/agree).**
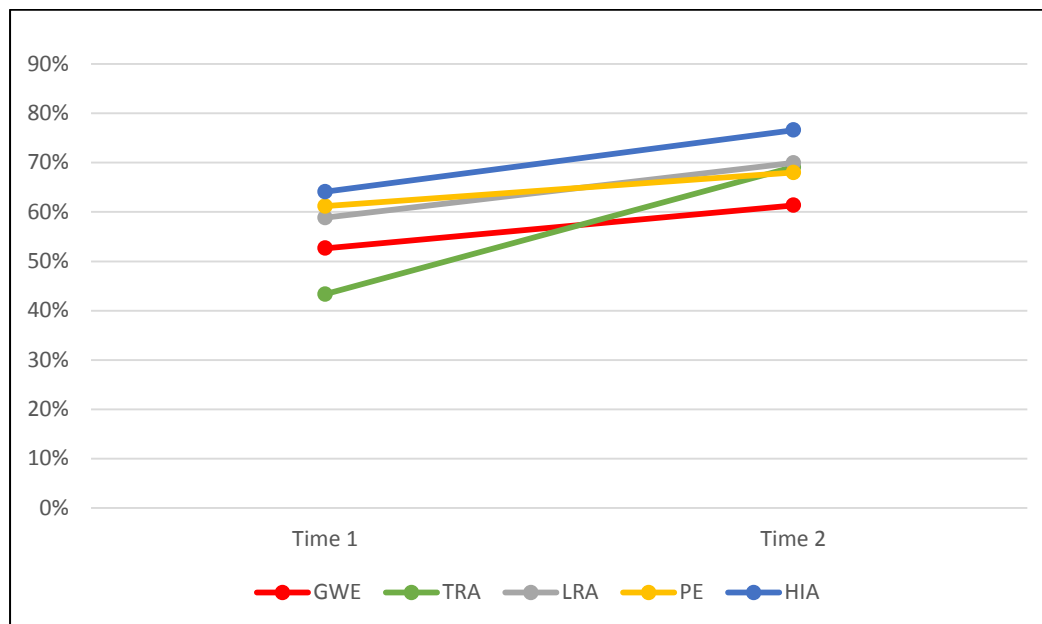
Findings:
- All IATs had a statistically significant increase in the percentage of those in agreement with the statement from Time 1 to Time 2.
- The greatest absolute change was seen in TRAs with an increase of 26 percentage points. TRAs were the only IAT for which under 50% of participants indicated a positive view at Time 1 (43%).
- HIAs were the IAT with the highest level of agreement at Time 1 (64%) and still saw an increase by Time 2 (77%).
- PEs saw the smallest improvement in respondents' opinions just 7 percentage points, from 61% at Time 1 to 68% at Time 2.
- The proportion of people in GWE in agreement increased over time by 9 percentage points but was ranked lowest for its absolute level of agreement at Time 2.
- When we calculated relative change over time TRAs had the largest increase in agreement relative to Time 1 (59%) and PEs had the lowest relative increase (11%). GWE had a relative increase of 17%.

Ability to influence decisions

Participants were also asked if they thought they could influence decisions that affected their area. Figure 22 shows the percentage of participants at both time points that agreed with the statement and believed they could be part of the decision-making process in their area.

Figure 22: Feeling able to influence decisions affecting the local area (strongly agree/agree).
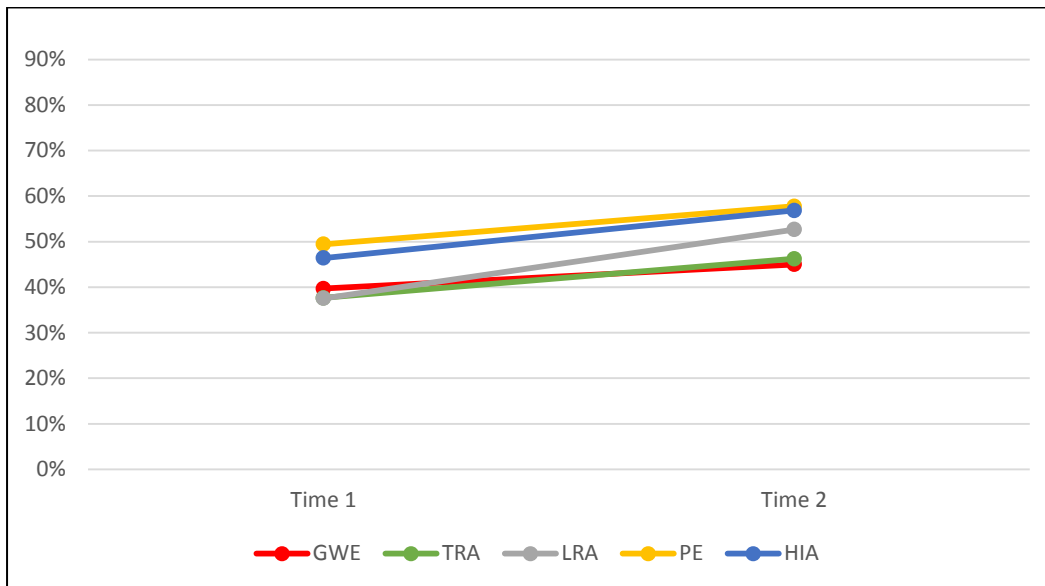
Findings:
- All IATs saw a significant increase in the percentage of participants that felt they could influence decisions made about their area.
- By Time 2 over 50% of participants in LRAs, PEs and HIAs agreed with the statement.
- LRAs had the largest absolute increase of 15 percentage points and the greatest increase relative to Time 1 (40%).
- The smallest change in opinion overtime was found among GWE residents, an absolute increase of 5 percentage points from 40% at Time 1 to 45% at Time 2, a relative increase of 13%.

Feeling part of the community

Respondents were then asked to rate how much they felt part of their community on a scale from 'not at all' to 'a fair amount' or 'a great deal'. Figure 23 shows the proportion of respondents that felt they were part of their community either 'a fair amount' or 'a great deal'. These results are given for both time points and for each IAT.

Figure 23: Respondent feels part of community (a great deal/a fair amount).
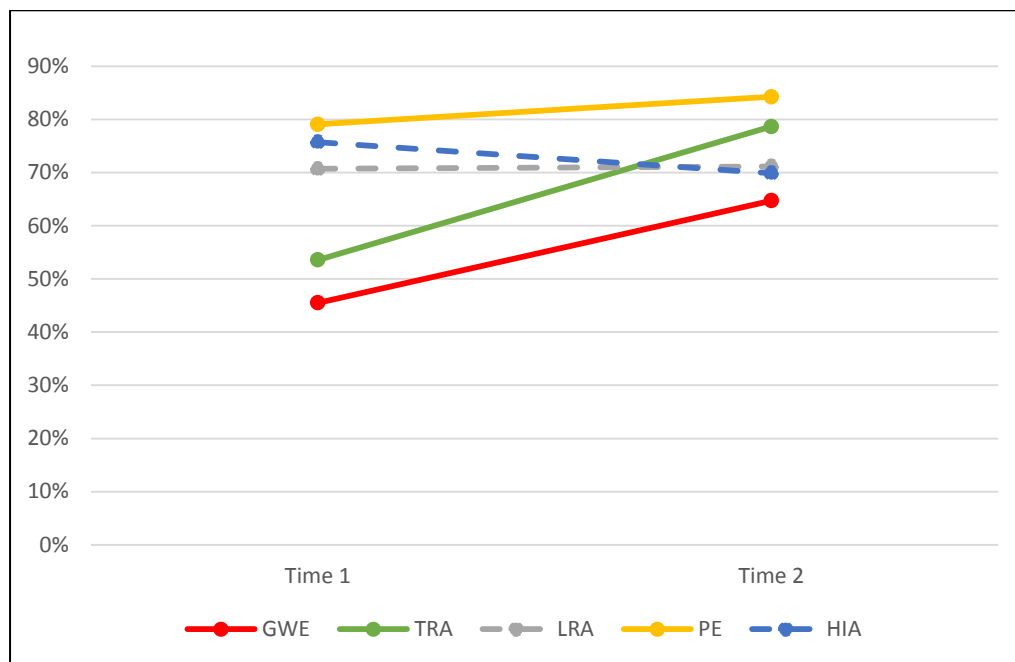
1 Dashed line denotes a change over time that is not statistically significant.

Findings:
- Three of the five IATs had a significant increase in the proportion of respondents feeling part of their community.
- LRAs and HIAs did not show a statistically significant change over time for this indicator.
- The largest absolute increase was among TRA residents; 25 percentage points from 54% at Time 1 to 79% by Time 2.
- PE residents saw an absolute increase of 5 percentage points which was the smallest overall, however it should be noted that at Time 1 they had the greatest proportion reporting they felt part of the community (79%).
- The proportion of GWE residents feeling part of the community increased by 19 percentage points from 46% at Time 1 to 65% but they were still ranked last for absolute level of agreement.
- TRA residents had the greatest increase in feelings of being part of the community relative to Time 1 (47%) and GWE also saw a large relative increase (42%).

Social contact and support

We examined at a range of indicators relating to social contact and support including frequency and nature of contact with neighbours, friends and relatives, and participants' support network in a time of crisis.

Stopping to talk to neighbours

Respondents were asked to indicate how frequently they stop and talk to people in their neighbourhood on a scale running from 'not at all' to 'a great deal'. Figure 24 shows the proportion of participants that converse with their neighbours 'a great deal' or 'a fair amount'. These results are shown for all IATs at both time points.

Figure 24: Respondent stops and talks to people in neighbourhood (great deal/fair amount).
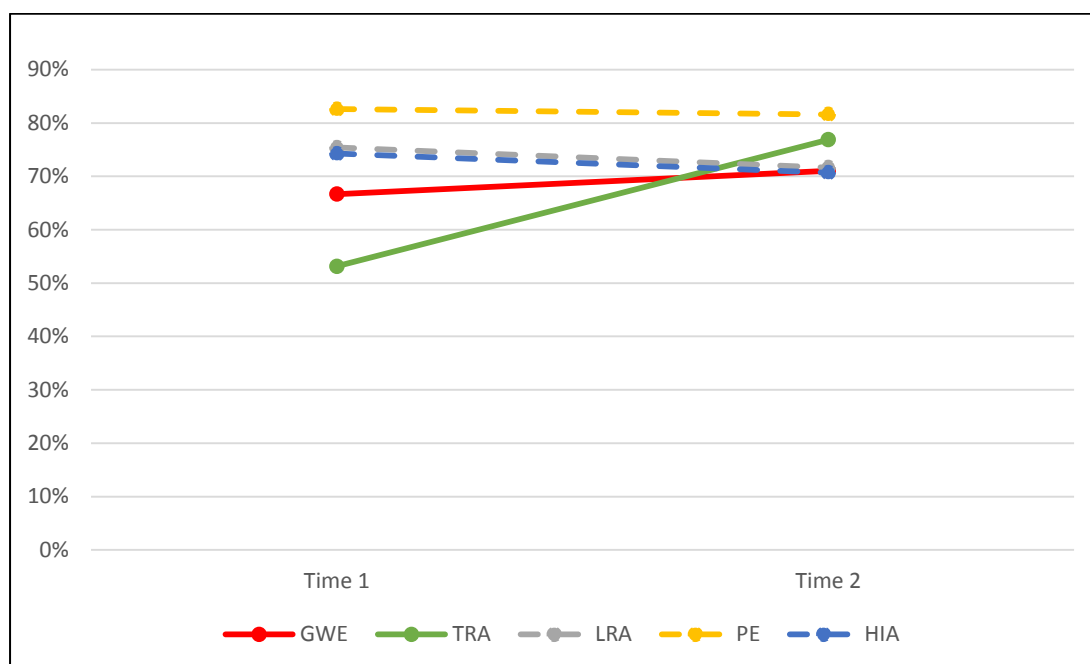
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- Only GWE and TRAs had a statistically significant change in this indicator over time.
- TRAs had a larger absolute increase than GWE; an increase of 24 percentage points from 53% at Time 1 to 77% at Time 2 putting it ahead of GWE by Time 2.
- A high percentage (67%) of GWE participants reported stopping to speak to neighbours at Time 1 and this proportion increased slightly by Time 2 (71%).
- TRAs had the greater increase in levels of neighbourly talking relative to their position at Time 1 of 45%, while GWE had a relative increase of 7%.

Visiting neighbours in their home

We also examined if participants' contact with neighbours extended to visiting them in their homes. This indicator was measured on a scale running from 'not at all' to 'a great deal'. Figure 25 shows the proportion of participants that visited their neighbours in their home 'a fair amount' or 'a great deal'. These results are given for all five IATs at both time points.

Figure 25: Respondent visits neighbours in their home (great deal/fair amount).
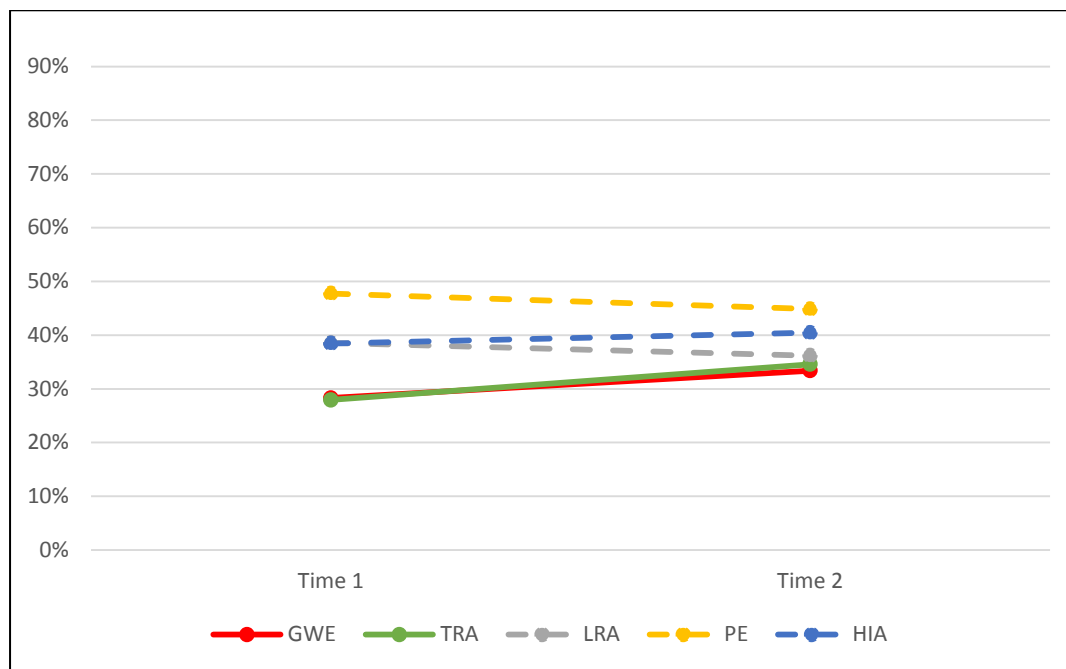
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- As with the previous indicator, only GWE and TRAs reported a statistically significant change over time; both had an absolute increase in the proportion reporting frequent visits to their neighbours' homes.
- GWE and TRAs were the IATs with the lowest percentage of participants reporting frequent visits to neighbours' homes at Time 1, around 28%.
- TRAs had a slightly larger absolute increase than GWE; 7 percentage points compared to 5.
- When we consider the change relative to the percentage at Time 1, TRAs had a relative increase of 24% and GWE had an increase of 18%.

Contact with friends

Participants were asked to indicate how frequently they met up with friends. This is measured on a five-point scale running from 'most days' through decreasing levels of frequency to 'never'. Figure 26 shows the proportion of participants that have contact with their friends at least monthly (i.e. 'most days', 'once a week or more' and 'once or twice a month') for all IATs at both time points.

Figure 26: Social contact: Frequent meetings with friends.
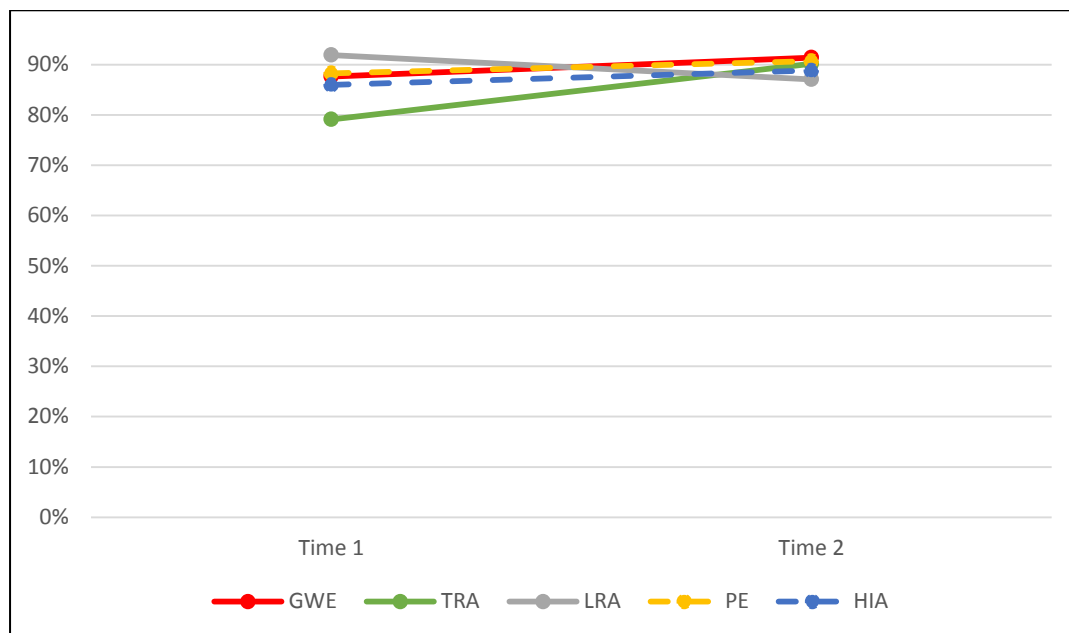
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- Three of the five IATs had a statistically significant change in this variable over time.
- Both GWE and TRAs had significant increases in social contact with friends, LRAs saw a significant decrease in this measure.
- TRAs had the largest absolute increase, 11 percentage points compared to four percentage points for GWE residents.
- LRAs had a statistically significant decrease of 5 percentage points but it should be noted that 92% of participants from LRAs reported frequent contact with friends at Time 1 dropping to 87% at Time 2.
- Both GWE and TRA residents report a higher frequency of contact with friends than those in LRAs by Time 2.
- GWE has the highest proportion of participants reporting frequent contact with friends at Time 2.
- When we examined the change relative to Time 1 TRAs had the largest relative increase of 14% while GWE had a relative increase of 4%.

Contact with relatives

Another aspect of social contact we explored was the frequency of participants' contact with their relatives. This is measured on the same five-point scale as the previous indicator running from 'most days' through decreasing levels of contact to 'never'. Figure 27 shows the proportion of participants that have contact with their relatives monthly or more often ('most days', 'once a week or more' and 'once or twice a month') for all IATs at both time points.

Figure 27: Social contact: frequent meeting with relatives.

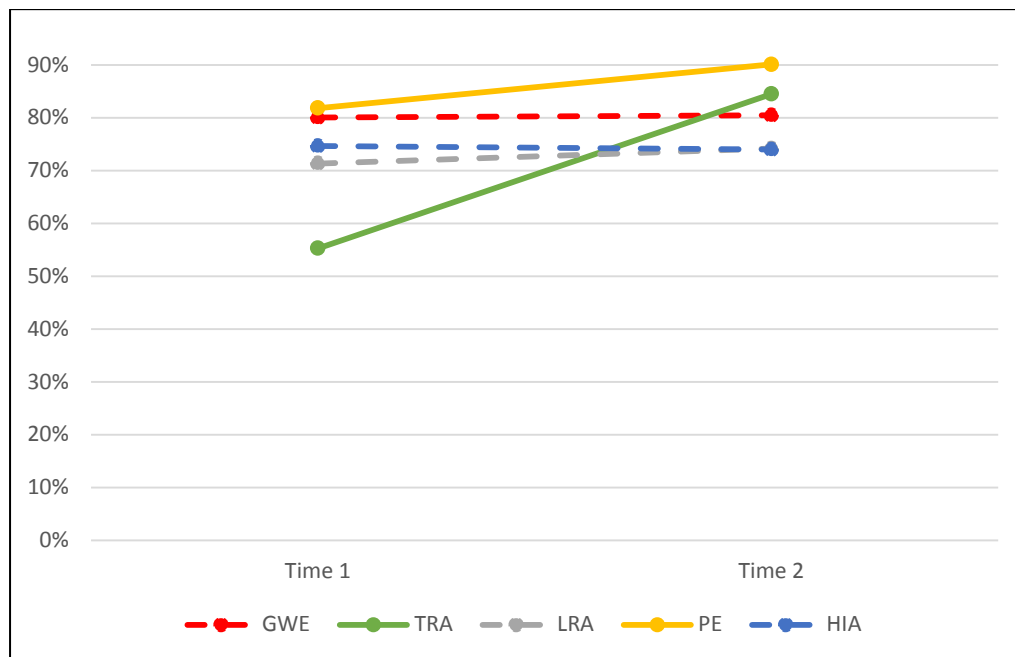[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- Only two of the five IATs had statistically significant changes for this indicator; PEs and TRAs.
- A high proportion of GWE participants reported frequent contact with their relatives at Time 1 (80%) but this did not change significantly over time.
- TRAs had a considerably lower percentage of respondents reporting frequent contact with relatives at Time 1 when compared with all other IATs.
- Both PEs and TRAs had an absolute increase in the proportion reporting frequent contact with relatives over time.
- TRAs had the largest absolute increase of 29% from 55% at Time 1 to 84% at Time 2. PEs has an increase of 8% from 82% at Time 1 to 90% at Time 2.
- When we consider change in the indicator relative to the position at Time 1, the relative change for TRAs was +53% compared with +10% for PEs.

Social support

The final social contact participants were asked about was their support network. All participants were asked how many people (not living with them) they could go to for advice and support in a time of crisis. They were also given the option to indicate that they would not ask someone for help. Figure 28 shows the results for those that said they had a person or several people to support them during a crisis. The results are shown by IAT and for both time points.

Figure 28: Social support: people available to ask for advice and support in a crisis.
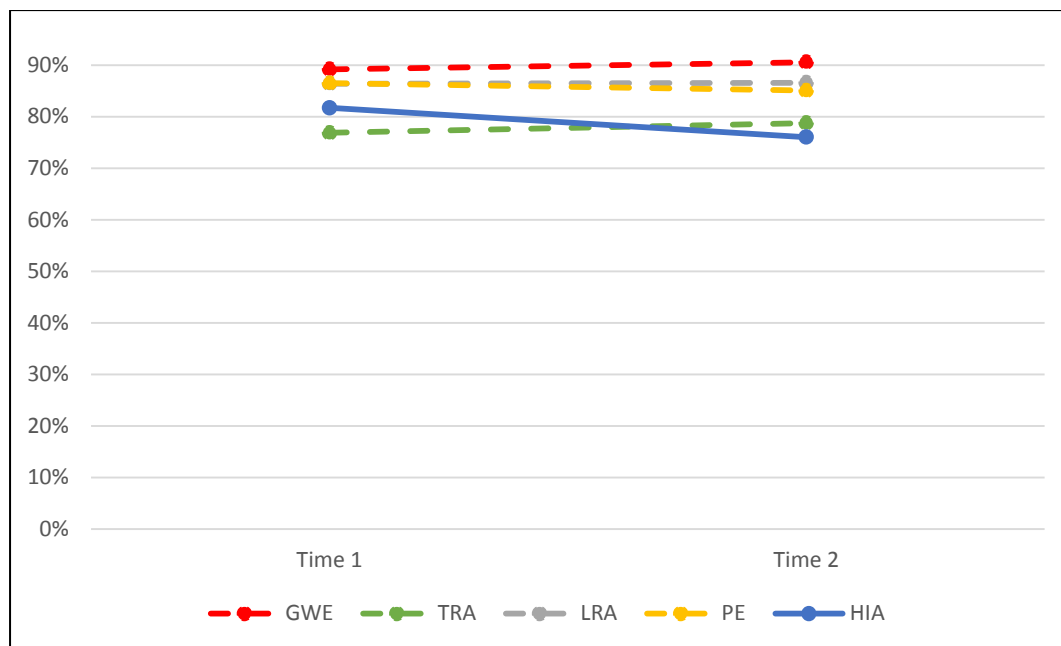
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- HIAs were the only IAT that had a significant change in this variable over time.
- HIAs had a decrease of six percentage points from 82% at Time 1 to 76% at Time 2.
- Although the change over time was not statistically significant, all IATs showed high levels of support at both time points.
- The level of support among GWE participants was around 90% at both time points, the highest level of all IATs.
- HIAs had a decrease of 7% relative to the measure at Time 1.

4.2   Relative change in indicators across IATs

In this section we focus on relative change in the indicators compared with their baseline position for GWE and each of the other IATs.

Table 9 lists all of the community-related measures and indicates whether or not GoWell East participants (GWE) have better outcomes over time than the other intervention area types when change relative to Time 1 is measured. The four other area types have been divided into two groups: the regeneration areas, TRAs and LRAs; and the non-regeneration areas, PEs and HIAs.

Table 9. Community related indicators: relative change in GWE compared with other IATs.

	Regeneration areas		Non-regeneration areas	
	TRA	**LRA**	**PE**	**HIA**
Psychosocial benefits:				
People who live in this neighbourhood think highly of it	X	X	✓	X
Can influence decisions affecting your local area	X	X	X	X
Respondent feels part of community	X	✓	✓	✓
Social contact & support:				
Respondent stops and talks to people in neighbourhood	X	✓	✓	✓
Respondent visits neighbours in their home	X	✓	✓	✓
Frequent social contact: meeting friends	X	✓	✓	✓
Frequent social contact: meeting relatives	X	X	X	✓
Social support: people available to give advice and support in a crisis	X	✓	✓	✓

✓ Relative change on indicator from T1 to T2 is more positive in the case of GWE than for the comparison IAT.

One way of summarising the picture is to consider GWE against each of the other IATs. Here we focus on the two regeneration IATs in turn.

Comparing GWE with the TRAs in terms of relative change over time, we find:
- TRAs outperformed GWE on all nine indicators.
- When respondents were asked if they felt part of the community, GWE was ranked second for relative change (+42%).
- For four of the five indicators of social support and contact, GWE was ranked second to TRAs in terms of relative change.

Comparing relative change in the GWE sample with the corresponding group from LRAs we found:
- GWE outperformed the LRAs on 5 of the 8 indicators.
- In relation to the psychological benefit indicators GWE performed better than LRAs when it came to feeling part of the community but had lesser relative change over time for influencing decisions and perceived internal reputation.
- GWE performed better than the LRAs in relative terms in respect of both indicators relating to contact with neighbours, and in respect of contact with friends.
- GWE performed better than LRAs with regard to support in a crisis.

GWE also performed better in relative terms over time on the majority of indicators when compared with both the PEs (six indicators) and HIAs (six indicators).

A second way of summarising the situation is to consider the relative performance of GWE on particular indicators in relation to all the other IATs together.

There are a number of indicators where GWE outperformed most other areas (i.e. three or four of the other IATs) in relative terms over time. These include the following indicators:
- Respondents feeling part of the community.
- Contact with their neighbours; speaking to them and visiting them in their homes.
- Social support: having people to give advice and support in a crisis.

In contrast, there are a few indicators where the performance of GWE was worse than most other areas in respect of relative change over time. These indicators include:
- Perceptions that they can influence decisions made about their local area.
- Perceptions that their co-residents think highly of their neighbourhood.
- Frequent contact with relatives.

4.3   The influence of area type after controlling for socio-demographic factors

In this section, we examine whether GWE or each of the other IATs is significantly associated with each of the outcomes at each time point, after taking into account respondent characteristics including gender, age, household type, length of residence, housing tenure and employment status. This enables us to consider whether the area type itself, or change within the area, appears to have a positive or negative effect on the outcome, adjusting for the fact that respondent characteristics vary between the IATs.

We present results from regression modelling of the outcomes in the two groupings of variables, as above. In doing this, we use HIAs as the reference category for the IAT variable, being the area which often had the better values on the outcome variables.

Psychosocial benefit indicators

Table 10 lists the odds ratios for all variables included in the first three models at both time points and indicates the significance level of each one.

Table 10. Models for psychosocial benefits indicators 1 to 3 with odds ratios and significance level.

Variables in the model	1. People think highly of neighbourhood		2. Influence decisions in neighbourhood		3. Feels part of community	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Gender:						
Male (ref)						
Female	0.81**	1.00	1.00	1.05	0.92	0.97
Age	1.02****	1.03****	1.01**	1.01*	1.01***	1.02****
Length of residence:						
3-10 years (ref)						
<2 years	1.15	1.08	1.02	0.82	0.84	0.69***
11+ years	0.97	0.79*	0.98	0.78*	1.19	1.06
Household type:						
Pensioner hhld (ref)						
Hld. with children	0.66*	1.48	0.87	1.50*	0.76	1.01
Hld. without children	0.73	1.34	1.01	1.47*	0.68*	0.97
IAT:						
HIA (ref)						
GWE	0.67***	0.57****	0.83	0.64****	0.29****	0.88
TRA	0.45****	0.85	0.76	0.79	0.44****	2.07****
LRA	0.77	0.70*	0.73*	0.93	0.81	1.13
PE	0.98	0.86	1.20	1.34*	1.40*	2.65****
Tenure:						
Social renter (ref)						
Private renter	1.20	1.03	0.96	1.19	0.84	0.79
Owner occupier	0.95	0.93	0.97	1.43***	1.07	0.97
Tenure other	1.07	1.60	1.16	2.69	1.20	0.40
Employment status:						
Working (ref)						
Out of work	1.16	1.03	0.95	0.89	1.15	1.04
Retired	1.10	1.43	0.96	1.37	1.17	1.35

Note: **** p<.001, *** p<.005, ** p<.01, * p<.05

At Time 1 we can see the following effects of GWE residence, compared with that of the other IATs:

- GWE had a negative effect upon perception of area reputation among residents and this was also the case for TRAs.
- GWE also had a negative effect upon respondents reporting feeling part of the community, lowering the odds of them doing so by 71%. A similar negative effect was evident for TRAs reducing the odds by 56%. PEs were the only IAT to have a positive effect on this indicator.

At Time 2 we can see the following effects of GWE residence, compared with that of the other IATs:

- The negative effect of GWE residence upon respondents' perception of area reputation among residents has increased slightly over time. The negative effect of TRA no longer exists. LRA residence now also has a negative effect on this indicator.
- GWE now has a negative effect upon the perception that respondents can influence decisions made in their area, decreasing the odds of doing so by 36%, compared with HIAs. The negative effect of LRA no longer exists. PEs now have a positive effect on this indicator increasing the odds of feeling influential by 34%.
- The negative effect of GWE residence upon respondents feeling part of the community no longer exists. TRAs now have a positive effect on this indicator and the positive effect for PEs at Time 1 has increased.

Social contact and support indicators

Table 11 shows the models relating to five social contact and support indicators. Participants were asked to rate the frequency of contact with neighbours, friends and relatives and to quantify how much support they would have in a crisis.

At Time 1 the effects of GWE on social contact and support indicators compared with that of other IATs area as follows:

- GWE had no effect upon the likelihood of participants talking to their neighbours. Those living in TRAs were half as likely to stop and talk to their neighbours compared with people living in HIAs. PEs had a positive effect on this indicator with the odds of residents talking to their neighbours increasing by 73%.
- GWE residence had a negative effect on whether participants were likely to visit their neighbours, with participants' odds of paying a visit to their neighbours decreasing by 39%. TRAs also had a similar negative effect on this indicator.
- GWE had no effect upon frequency of meeting up with friends. However, those living in TRAs were less likely to have frequent contact with friends when compared with those living in HIAs. LRAs had a positive effect with the odds of frequent contact with friends increasing by 68%.
- GWE had no effect on the frequency of meeting with relatives. There was however a negative effect for TRAs and LRAs, with the odds of meeting relatives being reduced by 57% and 38% respectively.
- GWE had a no effect upon the level of crisis support and advice. This was also the case for the other IATs.

At Time 2, the following effects of GWE residence were evident:

- GWE continued to have no effect on the likelihood of residents speaking to their neighbours. TRAs now had a positive effect on this indicator with residents twice as likely to talk to neighbours compared with those living in HIAs. The positive effect of PEs on this indicator continued and increased slightly.
- For GWE residents, the negative effect on visiting neighbours at Time 1 does not continue at Time 2, neither does the negative effect for TRAs. PEs now had a positive effect with residents 49% more likely to visit their neighbours compared with those living in HIAs.
- GWE continued to have no effect on the frequency of meeting with friends. The negative effect of TRAs does not exist at Time 2 and the positive effect of LRAs at Time 1 also disappears.
- GWE has a positive effect on meeting with relatives, with residents now 39% more likely to meet frequently with relatives than people living in HIAs. TRAs now also have a positive effect with residents more than twice as likely to have regular contact with relatives when compared with those living in HIAs. This positive effect is also apparent for PEs, with residents 2.88 times more likely to have frequent contact with relatives. The negative effect of LRAs from Time 1 disappeared.
- GWE now has a positive effect on the reported level of emotional support with residents more than twice as likely to report having support during a crisis when compared with those living in HIAs. LRAs and PEs also had a similar positive effect for this indicator. TRAs continued to have no effect on this indicator.

Table 11. Models for social contact and support indicators (4 to 8) with odds ratios and significance level.

Variables in the model	4. Stops & talks to neighbours		5. Visits neighbours		6. Meeting friends		7. Meeting relatives		8. Social support & advice	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Gender:										
Male (ref)										
Female	1.18	1.08	1.03	1.18*	0.90	0.95	1.51****	1.49****	1.41***	1.33*
Age	1.02****	1.02***	0.99	1.01	0.98****	0.97****	1.00	0.99	0.99*	1.00
Length of residence:										
3-10 years (ref)										
<2 years	0.82	0.57****	0.68****	0.69***	0.73*	0.68*	0.65****	0.65***	0.86	0.98
11+ years	1.69****	1.34*	1.09	0.95	0.94	0.94	1.32*	1.18	1.03	1.09
Household type:										
Older hhld (ref)										
Hld with children	1.46	1.36	1.10	1.45*	0.79	0.67	1.29	0.70	0.59*	0.53*
Hld without children	1.38	1.11	1.01	1.48*	0.87	0.90	1.18	0.84	0.76	0.66
IAT:										
HIA (ref)										
GWE	0.86	1.30	0.61****	0.95	0.98	1.12	0.97	1.39*	1.41	2.33****
TRA	0.52****	2.06****	0.63***	0.95	0.65*	1.13	0.43****	2.27****	0.74	1.26
LRA	1.16	0.94	1.03	0.94	1.68*	1.09	0.62***	1.00	1.38	2.08****
PE	1.73****	1.85****	1.17	1.49***	1.15	1.39	1.16	2.88****	1.33	1.85****
Tenure:										
Social renter (ref)										
Private renter	0.52****	0.74*	0.87	1.04	1.15	1.12	1.10	0.77	1.50	1.13
Owner occupier	0.99	1.24	0.94	1.17	1.78***	1.50	1.23	1.25	1.37	1.04
Tenure other	0.65	0.54	1.13	0.85	1.29	0.47	0.41*	0.62	1.68	0.32
Employment status:										
Working (ref)										
Out of work	0.88	1.04	1.09	1.10	0.57****	0.39****	0.68****	0.71**	0.78*	0.72*
Retired	1.00	1.20	1.13	1.51*	0.86	0.66	1.04	0.86	0.88	0.62*

Note: **** p<.001, *** p<.005, ** p<.01, * p<.05

4.4   Summary

For six of the eight community-related indicators GWE had positive absolute change over time and this was statistically significant. GWE did not outperform the other IATs in absolute terms for any of the nine variables but had the second largest absolute change (improvement) for five indicators. The rank position of GWE among the IATs improved in respect to just one indicator, the frequency of meeting with friends, going from third to first. For the rest of the indicators GWE either retained or reduced its rank position compared with the other IATS. For one indicator, available of social support in a crisis, GWE retained its top position in absolute terms over time.

When we examine change over time relative to an IAT's position at Time 1 there is some evidence that GWE is improving in relative terms. This is most obvious when GWE is compared with non-regeneration areas where it outperforms both HIAs and PEs for six of the eight indicators. This improvement is seen mainly with regards to the social contact and support indicators. When comparing relative change across the indicators for regeneration areas the picture is not as positive. Although GWE has seen increases relative to Time 1 for six of the eight community indicators, it does not outperform TRAs over time on any of the indicators. GWE fares better when compared with LRAs where it outperforms these areas for five of the eight indicators, again mainly those related to social contact and support.

After taking other socio-demographic and residential characteristics of the respondents into account, residing in GWE was found to have a negative effect on two of the eight community indicators at Time 2, compared with three at Time 1. At Time 2, GWE had a negative effect on the psychosocial benefits of influencing decisions and the perceived internal reputation of the area, but no longer had a negative effect on feeling part of the community. GWE had a positive effect for two of the community indicators at Time 2, compared with having no effect at Time 1, namely frequency of meeting relatives and level of emotional support available. GWE residence had no effect at Time 2 on the other four community indicators.

5   Employment and finances

In this chapter we focus on the topics of employment and finance. This involves measuring the change over time for each intervention area type over eight different indicators covering two main themes:

- Employment rate among working-age adults, by gender and full time or part time.
- Financial problems including fuel and food poverty.

The chapter is divided into three parts as follows:

Part one. An examination of change from Time 1 to Time 2 in each of the indicators by IAT, under the two areas of interest. Here we are particularly interested in absolute changes in the indicators and in the rank position of GWE among the IAT groups, although we also report on relative changes in the indicators for each IAT.

Part two. A summary and overview of relative changes in the indicators, comparing the performance of GWE against the other regeneration and non-regeneration IATs.

Part three. Statistical modelling of each indicator to assess whether, at Time 1 and at Time 2, IAT is significantly associated with the outcome in question, after controlling for other socio-demographic and residential factors. Within this, we are particularly interested in whether living in the GWE area is positively or negatively associated with each outcome at the two time points.

## 5.1   Absolute changes on indicators and IAT rank positions

Employment rate of working-age adults

Participants were asked to indicate their employment status and were given ten options to choose from which included both full-time and part-time work, full-time education, retirement and an option to specify their position if it did not appear as an option. In this section we are interested in the employment rate, both full time and part time, among working-age adults.

Working-age adults engaged in full- or part-time employment

Figure 29 shows the employment rate for adults aged 16-64 years by IAT for both time points.

Figure 29: Employment rate for working-age adults (16-64 years).
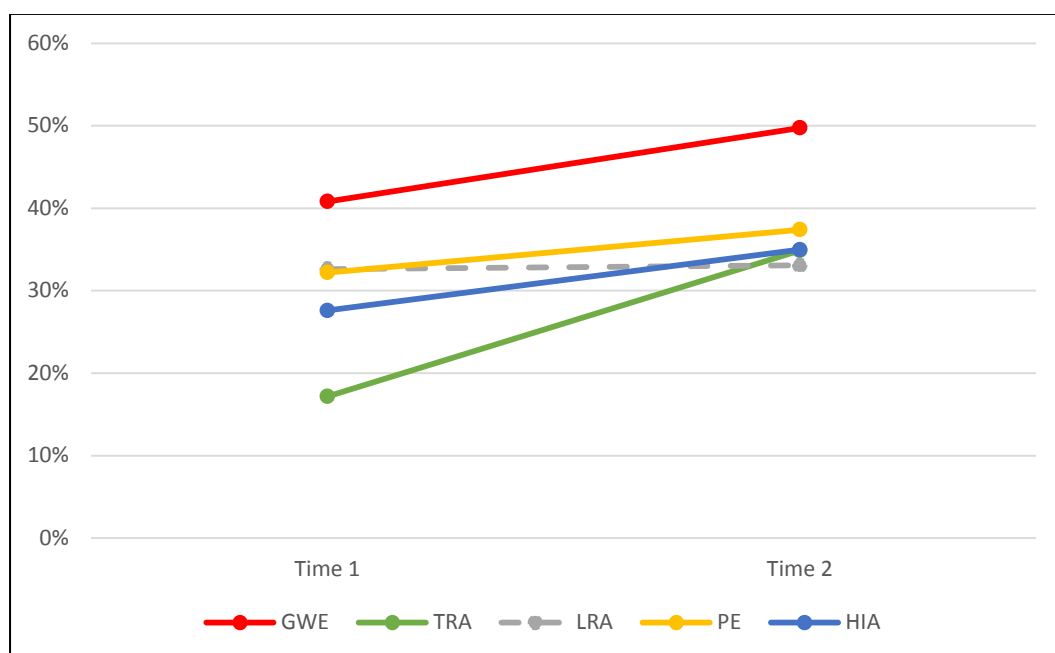
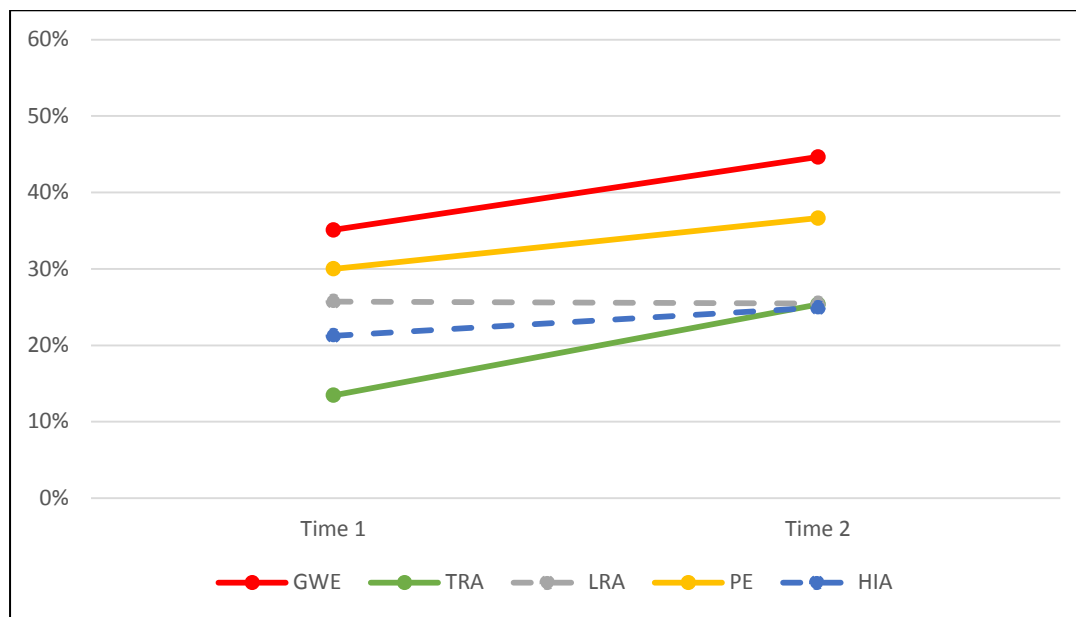[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- Four of the five IATs had a statistically significant increase in employment over time, only LRAs saw no significant change in this measure.
- GWE residents had the highest rate of employment at Time 1 (41%) and this was still the case at Time 2 (50%).
- The largest absolute increase in working-age employment was reported by TRAs (18 percentage points) but TRAs had the lowest rate at Time 1 (17%). GWE has the second largest absolute increase (9 percentage points).
- PEs reported the lowest increase in employment, 5 percentage points, from 32% to 37%.
- When we calculated the change in employment rate relative to that at Time 1 we found that TRAs had the largest increase (103%). GWE was ranked third with an increase of 22% relative to Time 1.

Employment rate by gender

We also analysed the working-age employment data by gender and the type of employment, full time or part time to see if the change over time is particularly associated with either of these characteristics. Figure 30 shows the rate of full-time employment among working-age males by IAT and at both time points.

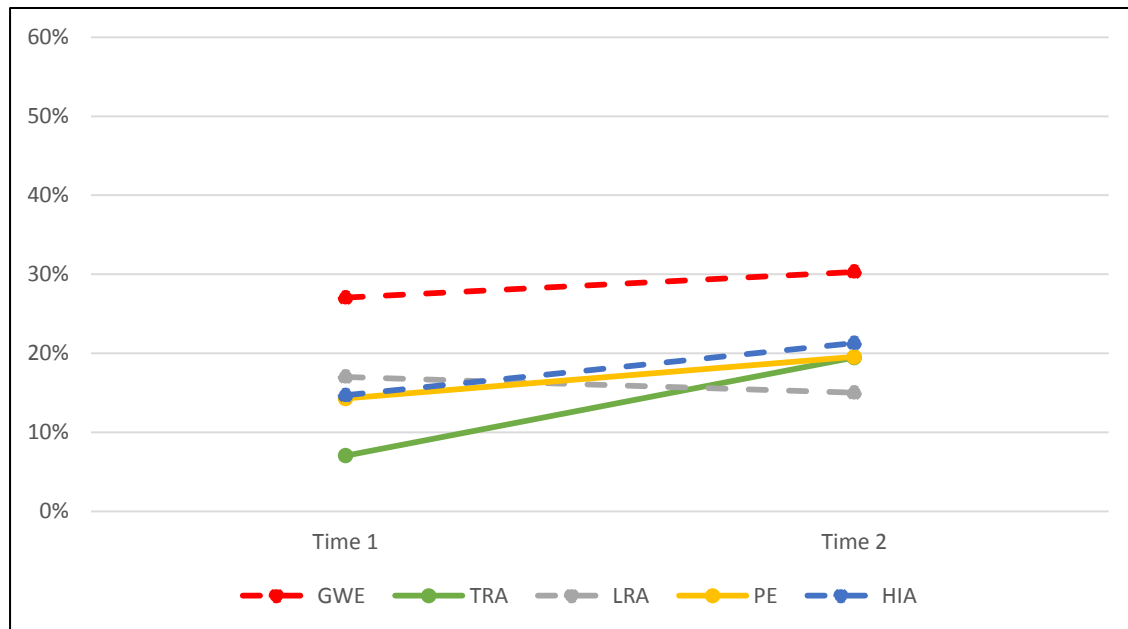**Figure 30: Employment rate for working-age males (16-64 years).**

[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- Three of the five IATs reported a statistically significant increase in male working-age employment over time. No significant change in male working-age employment was found for LRA and HIA residents.
- GWE had the highest employment rate for working-age males at both time points and it increased over time from 35% at Time 1 to 45% at Time 2.
- TRAs reported the largest absolute increase of all the IATs (12 percentage points), GWE also saw an increase of around 10 percentage points.
- When we analysed the change in employment relative to that at Time 1 we found that TRAs saw the greatest relative increase (88%).
- GWE had an increase in male working-age employment of 27% relative to Time 1, PE had a slightly smaller relative increase (22%).

Figure 31 shows the working-age employment rate but this time for female participants. As before the results are shown by IAT for both time points.

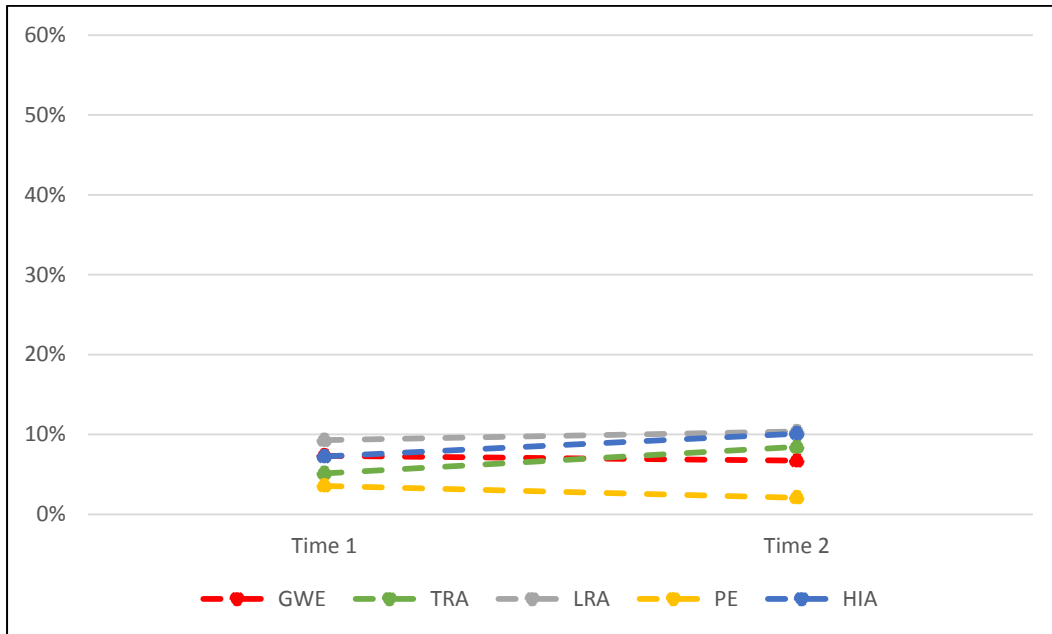**Figure 31: Employment rate for working-age females (16-64 years).**

[1] Dashed line denotes a change over time that is not statistically significant.

Findings:

- Only TRAs and PEs reported a statistically significant increase in full-time employment among working-age females over time.
- GWE had the highest full time employment rate among working-age females at Time 1 (27%) and this was still the case at Time 2 (30%), but there is no evidence of a significant change in this over time.
- TRAs reported the largest absolute increase of all the IATs (12 percentage points), PEs saw an increase of 5 percentage points.
- Examining change relative to Time 1 we find that TRAs had the largest relative increase (176%).
- PEs had a relative increase in full-time employment of working-age females of 37%.

The next part of the analysis examined the change in part-time employment among working-age adults by gender. Figure 32 shows the change in the rate of part time employment for working-age males by IAT.

Figure 32: Part-time employment for working-age males (16-64 years).

[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- None of the IATs reported a statistically significant change in the rate of part-time employment among working-age men.
- LRAs had the highest rate of part time employment at Time 1 (9%), PEs the lowest (4%).
- GWE residents had the second highest rate of part time employment among males at Time 1 (7%), and the fourth highest rate at Time 2.

Figure 33 shows the change over time in the rate of part-time employment for working-age women by IAT.

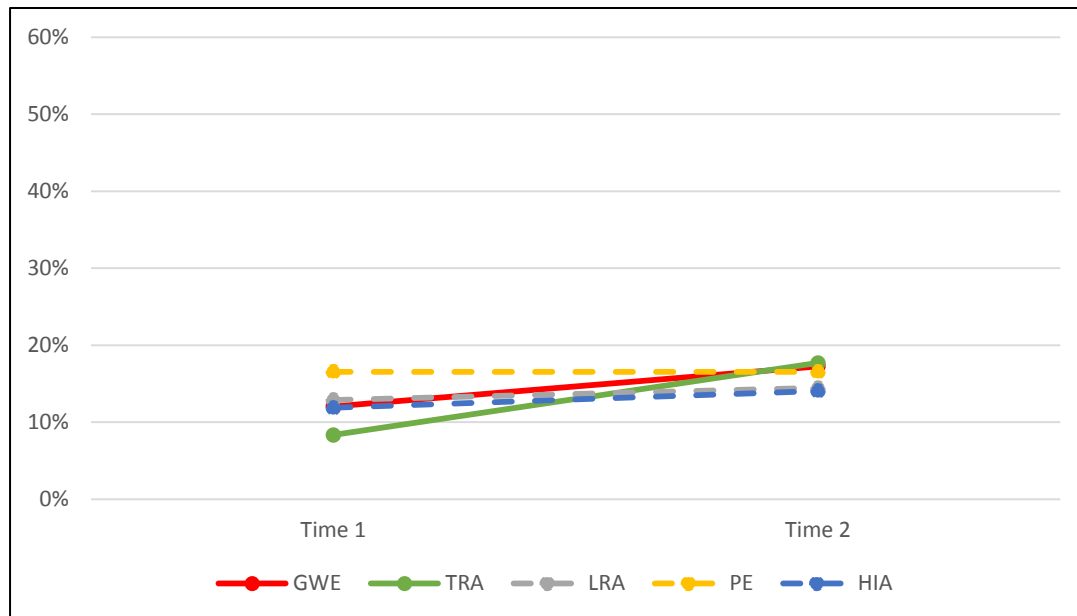**Figure 33: Part-time employment for working-age females (16-64 years).**

[1] Dashed line denotes a change over time that is not statistically significant.

We found that:
- TRAs and GWE were the only IATs that reported a statistically significant increase in the part-time employment for women.
- TRAs reported the largest increase in the rate of part-time employment among working-age women, 9 percentage points, but they also had the lowest employment rate at Time 1.
- Working-age women in GWE saw an increase in part time employment of 5 percentage points.
- PEs reported the highest rate of part-time employment among women at Time 1 (17%) but there was no statistically significant change in this indicator over time.
- When we calculated the change in employment rate relative to Time 1 we found that TRAs had the largest increase (112%). GWE had an increase of 43% relative to the measure at Time 1.
- GWE was ranked third for female part-time employment at Time 1 and second at Time 2.

Financial problems

In this section we compare the results when participants were asked about any difficulties they may have had in paying their fuel bills or paying for food. Participants were also asked if they had access to a car or another type of vehicle, often used as a marker of social class or income and wealth.

Difficulty paying for fuel
Participants were asked how often they had trouble paying their fuel bills. This was measured on a four-point scale from the highest value 'very often' to the lowest 'never'. Figure 34 shows the rate of participants in each IAT that indicated they had trouble paying for fuel 'very' or 'quite often' and this is presented for both time points.

Figure 34: Difficulty paying fuel bills (very/quite often).
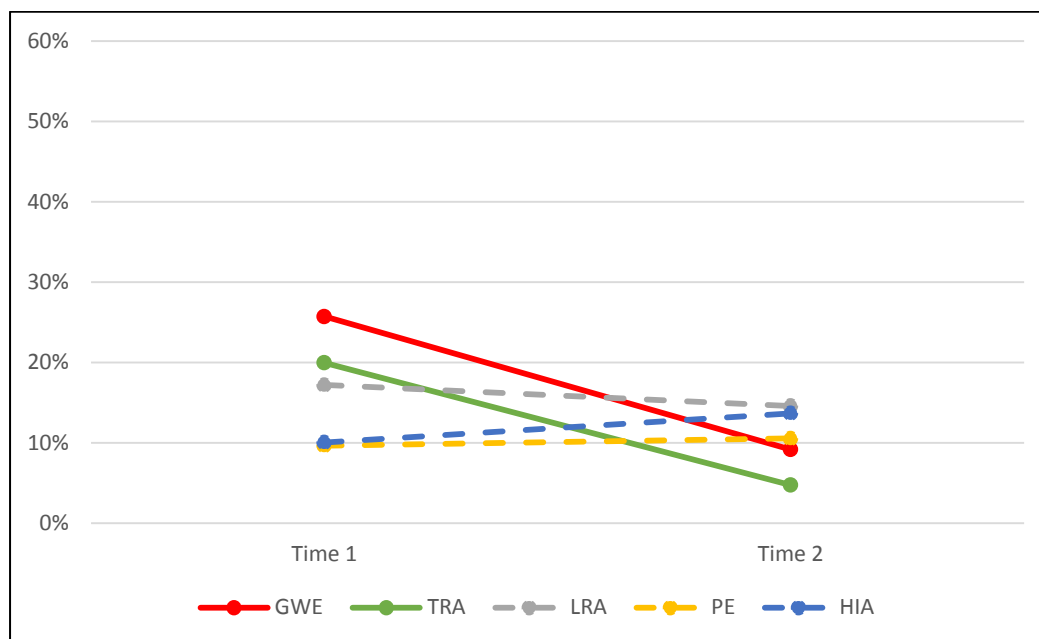
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- Only two IATs had a statistically significant change in this variable over time with GWE and TRAs seeing a decrease in the proportion of residents experiencing fuel poverty.
- GWE had the greatest decrease (17 percentage points) but was the IAT reporting the highest level of fuel poverty at Time 1 (26%).
- By Time 2 both GWE and TRAs had lower levels of fuel poverty than the other three IATs.
- When we analysed the change relative to Time 1 TRAs had the greatest decrease (76%). GWE also had a substantial relative decrease of 64%.

Food poverty

In a similar manner to measuring fuel poverty; participants were asked how often they had difficulty paying for food. The same four-point scale was used and Figure 35 shows the rate of participants that had trouble paying for food 'very' or 'quite often'. The results are given for each IAT and at both time points.

Figure 35: Difficulty paying for food (very/quite often).

[1] Dashed line denotes a change over time that is not statistically significant.
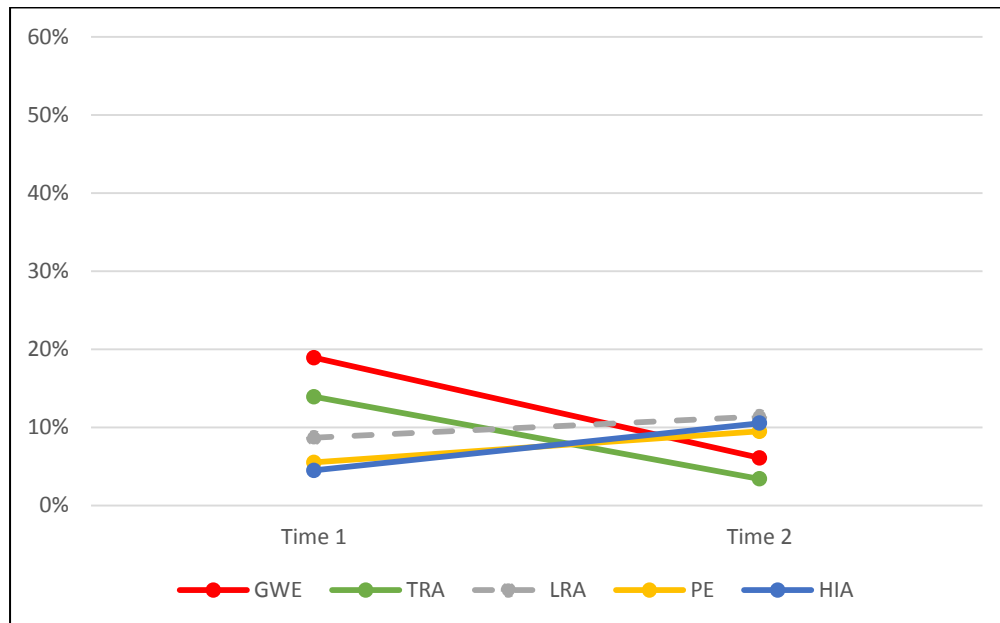
Findings:
- The results for this indicator are mixed with GWE and TRAs seeing a significant decrease in food poverty over time and both PEs and HIAs experiencing an increase.
- Both PEs and HIAs reported low levels of food poverty at Time 1, 6% and 5% respectively, but this increased to around 10% by Time 2.
- GWE residents reported the highest level of food poverty at Time 1 (19%) and with the largest decrease of all IATs had the second lowest food poverty rate by Time 2 (6%).
- The level of food poverty among LRA residents did not change significantly over time.
- When we calculated the change in the rate of food poverty relative to Time 1 we found that TRA residents had the largest decrease (75%) and HIAs had the largest increase (134%). GWE had a relative decrease of 68%.

Access to a vehicle

Participants were asked if they had access to a vehicle or a number of vehicles for their own use. Figure 36 shows the rate of participants in each IAT that had access to one or more vehicles at both time points.

Figure 36: Access to vehicles.
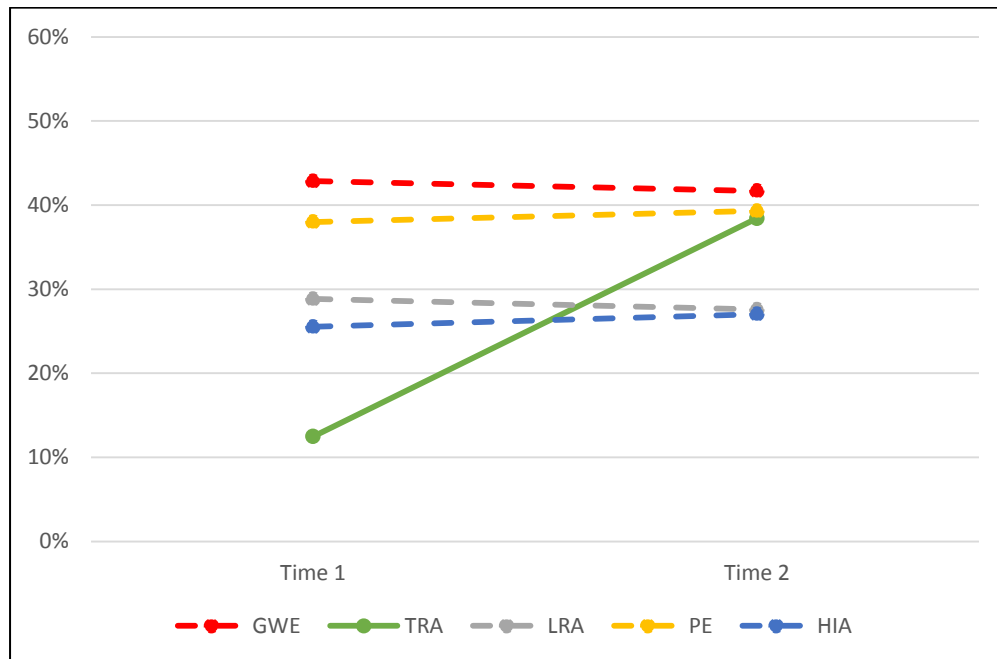
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- TRAs were the only IAT with a statistically significant change in the level of access to vehicles over time. Increasing from 12% at Time 1 (the lowest rate for all IATs) to 38%at Time 2.
- All other IATs did not have a statistically significant change in the level of access to vehicles.
- At Time 1 GWE residents had the highest level of access to vehicles (43%) and this was still the case at Time 2.
- When we analysed the level of access relative to Time 1, TRAs had a relative increase of 208%.

5.2   Relative change in indicators across IATs

In this section we focus on relative change in the indicators compared with their baseline position for GWE and each of the other IATs.

Table 12 lists all of the employment- and finance-related measures and indicates whether or not GoWell East participants (GWE) have better outcomes over time than the other intervention area types when change relative to Time 1 is measured. The four other area types have been divided into two groups: the regeneration areas, TRAs and LRAs; and the non-regeneration areas, PEs and HIAs.

Table 12. Employment and finance indicators: relative change in GWE compared with other IATs.

	Regeneration areas		Non-regeneration areas	
	TRA	LRA	PE	HIA
Employment rate:				
Employment rate for all working-age adults	X	✓	✓	X
Full time employment rate for working-age males	X	✓	✓	✓
Full time employment rate for working-age females	X	✓	X	X
Part time employment rate for working-age males	X	X	✓	X
Part time employment rate for working-age females	X	✓	✓	✓
Financial difficulties:				
Difficulty paying fuel bills	X	✓	✓	✓
Difficulty paying for food	X	✓	✓	✓
Access to vehicle or vehicles	X	✓	X	X

✓ Relative change on indicator from Time 1 to Time 2 is more positive in the case of GWE than for the comparison IAT.

One way of summarising the picture is to consider GWE against each of the other IATs. Here we focus on the two regeneration IATs in turn.

Comparing GWE with the TRAs in terms of relative change over time, we find:
- TRAs outperformed GWE on all eight indicators.
- For two of the employment indicators (male full-time and female part-time employment), GWE was ranked second to TRA in terms of relative change.
- For both fuel and food poverty GWE was ranked second to TRA in terms of relative change.

Comparing relative change in the GWE sample with the corresponding group from LRAs we found:
- GWE outperformed the LRAs on 7 of the 8 indicators.
- GWE performed better than the LRAs on four of the employment indicators: the only employment indicator where it did worse was part-time employment for working-age males.
- GWE performed better than the LRAs in relative terms in respect of all three financial indicators.

GWE also performed better in relative terms over time on the majority of indicators when compared with both the PEs (six indicators). There is a more mixed picture compared with the HIAs with GWE outperforming them on half of the indicators.

A second way of summarising the situation is to consider the relative performance of GWE on particular indicators in relation to all the other IATs together.

There are a number of indicators where GWE outperformed most other areas (i.e. three or four of the other IATs) in relative terms over time. These include the following indicators:
- Full-time employment rate for working-age males.
- Part-time employment for working-age females.
- Difficulty paying fuel bills.
- Difficulty paying for food.

In contrast, there are two indicators where the performance of GWE was worse than most other areas in respect of relative change over time. These indicators were:
- Part-time employment for working-age males.
- Access to vehicles, although GWE had the highest rate of car access at both time points.

5.3　The influence of area type after controlling for socio-demographic factors

In this section, we examine whether GWE or each of the other IATs is significantly associated with each of the finance outcomes at each time point, after taking into account respondent characteristics including gender, age, household type, length of residence, housing tenure and employment status. This enables us to consider whether the area type itself appears to have a positive or negative effect on the outcome, adjusting for the fact that respondent characteristics vary between the IATs.

We present results from regression modelling of the outcomes in the five groupings of variables, as above. In doing this, we use HIAs as the reference category for the IAT variable, being the area which often had the better values on the outcome variables.

Employment

At Time 1 we can see the following effects of GWE residence, compared with that of the other IATs:

- GWE had a positive effect upon employment among working-age adults, with residents being nearly twice as likely to be in full-time or part-time employment, compared with those people living in HIAs. A negative effect was evident in TRAs, lowering the odds of being in employment by 29%.
- When we looked at working-age men, we found that again GWE had a positive effect, with male residents 1.73 times more likely to be in full-time employment.
- GWE residence had no effect upon part-time employment among working-age males and this was also the case of the other IATs.
- For working-age women GWE had a positive effect with female residents twice as likely to be in full-time employment when compared with those in HIAs.
- GWE residence had no effect upon part-time employment among working-age females and this was also the case of the other IATs.

At Time 2 the following effects of GWE residence were evident:

- GWE continues to have a positive effect on working-age employment and it has increased slightly with residents 2.25 times more likely to be in employment when compared with HIAs. The negative effect of TRAs is not apparent at T2. PE areas now have a positive effect on employment.
- The positive effect of GWE residence on male full-time employment had increased with male residents twice as likely to be in employment when compared with HIAs. PEs also have a positive effect with male residents 1.74 times more likely to be in full-time employment.
- GWE continues to have no effect upon part-time employment among males. For PEs there is a negative effect with the odds of male part-time employment reduced by 76% when compared with those resident in HIAs.
- The positive effect of GWE on female full-time employment is still apparent at Time 2 but has decreased slightly. PEs now have a positive effect on female employment.
- GWE has a positive effect on part-time employment among working-age females and PE areas also have a similar effect.

Table 13. Models for employment indicators 1 to 5 with odds ratios and significance level.

Variables in the model	1. Working-age employment		2. Working-age employment (male FT)		3. Working-age employment (male PT)		4. Working-age employment (female FT)		5. Working-age employment (female PT)	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Gender:										
Male (ref)										
Female	0.94	0.91								
Age										
Length of residence:										
3-10 years (ref)										
<2 years	0.83	0.92	0.82	0.99	1.13	1.32	0.92	0.90	0.84	0.82
11+ years	0.40****	0.39****	0.41****	0.47****	0.45	0.33***	0.56****	0.55****	0.68*	0.56****
IAT:										
HIA (ref)										
GWE	1.95****	2.25****	1.73*	2.09****	1.14	1.11	2.17***	1.82***	1.11	1.63*
TRA	0.71*	0.97	0.88	0.80	1.02	0.55	0.66	1.12	0.61	1.26
LRA	1.17	1.33	1.17	1.24	1.26	1.41	1.23	1.03	0.98	1.36
PE	1.27	1.75****	1.14	1.74**	0.55	0.24**	1.26	1.62*	1.46	1.71*
Tenure:										
Social renter (ref)										
Private renter	2.05****	2.35****	2.66****	3.24****	1.98	0.71	1.69*	1.81***	0.82	0.77
Owner occupier	4.24****	3.57****	3.60****	3.57****	2.66***	0.92	4.02****	2.94****	0.91	0.96
Tenure other	2.11	0.41	1.55	0.60	6.68***	0.00	2.09	0.68	1.20	0.80

Note: **** p<.001, *** p<.005, ** p<.01, * p<.05

Financial problems

At Time 1 we can see the following effects of GWE residence, compared with that of the other IATs:

- GWE had a large negative effect upon the indicator of fuel poverty, with residents being more than three times more likely to say they had difficulty paying fuel bills, compared with those people living in HIAs. A similar but lesser effect was also evident in TRAs but not in LRAs or PEs.
- GWE had an even larger negative effect when it came to the food poverty indicator, with residents being six times more likely to report they had trouble paying for food compared with HIA residents. There was a similar but lesser effect evident in TRAs but again no effect in LRAs or PEs.
- GWE residence had a positive effect upon the access to a vehicle indicator, with respondents being 1.77 times more likely to have access to a vehicle or vehicles compared with HIA residents. There was a similar positive for PEs with residents being 1.51 times more likely to have access to a car or other kind of vehicle. A negative effect was evident for TRAs, lowering the odds of having access to a vehicle by 48%.

Table 14. Models for finance indicators 6 to 8 with odds ratios and significance level.

Variables in the model	6. Fuel poverty		7. Food poverty		8. Access to vehicle	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Gender:						
Male (ref)						
Female	0.92	0.93	1.04	0.92	0.85	0.87
Age	1.00	0.99	1.01	0.99*	1.01	1.01
Length of residence:						
3-10 years (ref)						
<2 years	0.69**	0.85	0.75	0.76	0.63****	0.69***
11+ years	1.06	1.17	1.00	1.07	0.99	0.97
Household type:						
Pensioner hhld (ref)						
Hhld with children	1.12	0.99	1.42	0.69	3.89****	2.89****
Hhld without children	1.47	1.77*	1.96*	1.74	1.95***	1.70***
IAT:						
HIA (ref)						
GWE	3.49****	0.65*	6.23****	0.60*	1.77****	1.97****
TRA	1.76***	0.53*	2.70****	0.49*	0.52****	2.19****
LRA	1.42	0.92	1.65	0.89	0.99	1.24
PE	0.91	0.56***	1.01	0.87	1.51*	2.08****
Tenure:						
Social renter (ref)						
Private renter	0.83	1.05	1.00	1.24	1.56**	1.53***
Owner occupier	0.53****	0.24****	0.46****	0.17***	4.21****	4.72****
Tenure other	0.14	1.53	0.20	2.62	2.17	0.33
Employment status:						
Working (ref)						
Out of work	2.59****	2.33****	3.25****	2.42***	0.32****	0.32****
Retired	1.13	1.73	1.33	1.65	0.44****	0.29****

Note: **** p<.001, *** p<.005, ** p<.01, * p<.05

At Time 2 the following effects of GWE residence were evident:

- GWE residence now has a positive effect on fuel poverty with the odds of a resident being in fuel poverty reduced by 35% when compared with HIAs. This was also the case for TRAs with the odds of residents having difficulty paying fuel bills decreasing by 47%. PE residents at Time 2 also have reduced odds (44%) of being in fuel poverty when compared with HIAs.
- GWE residence now has positive effect on food poverty, reducing the likelihood that someone will have difficulty paying for food by 40%. TRAs also had a reduction in the odds of residents being in fuel poverty (51%) when compared with those in HIAs.
- GWE residence continues to have a positive effect upon whether residents have access to a vehicle. For TRAs the effect is also now positive with residents twice as likely to have access to a car as those in HIAs. The positive effect we saw for this indicator in PE areas at Time 1 has increased slightly at Time 2.

5.4   Summary

For five of the eight employment and finance-related indicators GWE had positive absolute change over time and this was statistically significant. GWE did not outperform the other IATs in absolute terms for any of the employment variables but had the second largest absolute change (improvement) for total working-age adult employment, male full-time employment and female part-time employment. GWE outperforms all other IATs in absolute terms for both fuel and food poverty seeing a greater improvement than the other areas. The rank position of GWE among the IATs improved in respect of three indicators: female part-time employment, fuel poverty and food poverty. For female part-time employment GWE went from third to second and for both fuel and food poverty it went from last place to second. For all but one of the other indicators GWE retained its rank position compared with the other IATS.

When we examine change over time relative to an IAT's position at Time 1 we found that there is no indicator where GWE outperformed all IATs. However GWE outperformed three of the four IATs for four indicators: full-time male employment, part-time female employment, fuel poverty and food poverty. When we compare GWE to regeneration areas GWE does not outperform TRAs on any indicators. The comparison is more favourable with LRAs where GWE outperforms them on all but one indicator. For non-regeneration areas GWE has greater relative improvement than PEs for six out of eight indicators and four out of eight for HIAs.

After taking other socio-demographic and residential characteristics of the respondents into account, residing in GWE was found to have a positive effect in respect of four of the five employment indicators, this positive effect having increased over time for three of the indicators and appearing for the first time in respect of the fourth. The regeneration comparison areas did not have positive effects on employment at either time period. GoWell East also had a positive effect for all three finance indicators at Time 2, compared with the non-regeneration HIAs. Residing in GWE lowered the odds of suffering food and fuel poverty. This shows a marked change to the results at Time 1 where GWE had a negative effect on these indicators, increasing the odds of residents being in fuel or food poverty. For the third indicator, access to vehicles, GWE has a positive effect which increases slightly over time.

6 Health and wellbeing

In this chapter we focus on the topic of wellbeing. This involves measuring the change over time for each intervention area type over 12 indicators covering three main themes:

- Physical health.
- Mental health.
- Health behaviours.

The chapter is divided into three parts as follows:

Part one. An examination of change from Time 1 to Time 2 in each of the indicators by IAT, under the three areas of interest. Here we are particularly interested in absolute changes in the indicators and in the rank position of GWE among the IAT groups, although we also report on relative changes in the indicators for each IAT.

Part two. A summary and overview of relative changes in the indicators, comparing the performance of GWE against the other regeneration and non-regeneration IATs.

Part three. Statistical modelling of each indicator to assess whether, at Time 1 and at Time 2, IAT is significantly associated with the outcome in question, after controlling for other socio-demographic and residential factors. Within this, we are particularly interested in whether living in the GWE area is positively or negatively associated with each outcome at the two time points.

## 6.1   Absolute changes on indicators and IAT rank positions

Physical health

An assessment of participants' overall physical health was made through a series of questions measuring different aspects which include the SF12-PCS health survey, a measure of the level of regular physical activity among respondents and their assessment of their general health.

General health

Participants were asked to describe their current general health. They were given a five-point scale with different descriptors from 'very poor' to 'excellent' and asked to indicate which term best described the current state of their health. Figure 37 shows the proportion of participants that consider their general health very good or excellent. The results are given for all five IATs at both time points.

Figure 37: Self-assessed general health (very good/excellent).
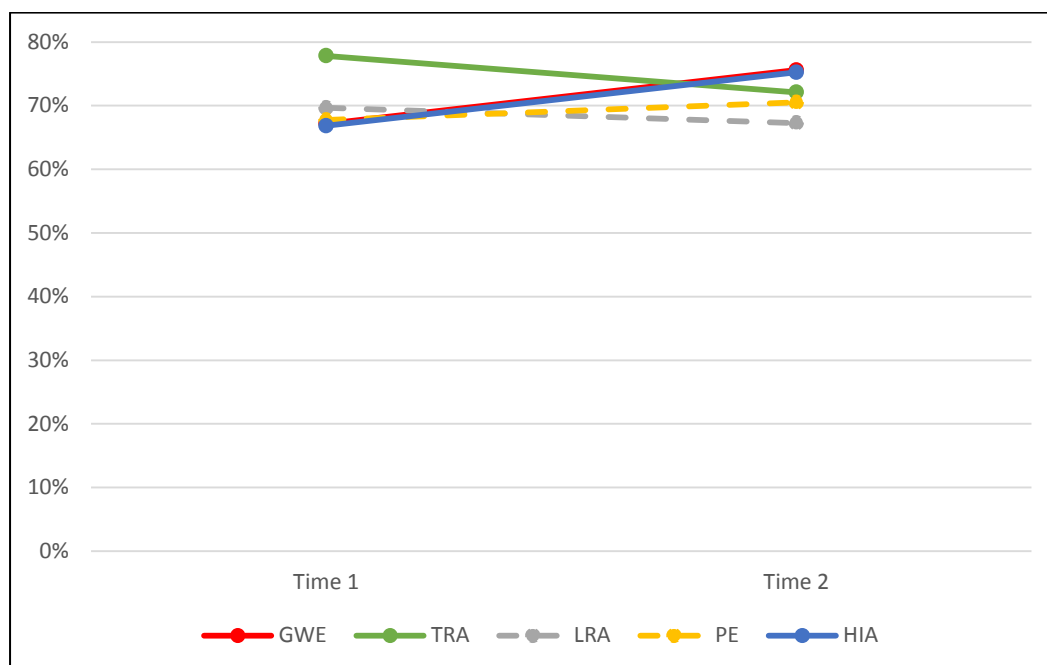
[1] Dashed line denotes a change over time that is not statistically significant.
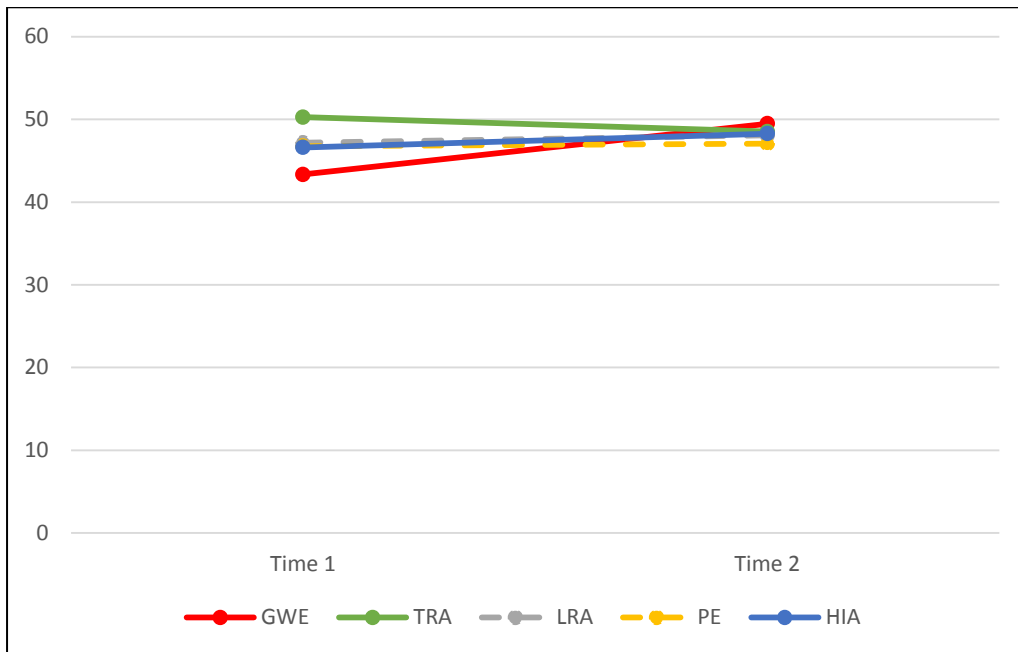
Findings:
- Three of the five IATs had a statistically significant change in self-reported general health over time. There was no evidence of a change in this indicator for LRAs and PEs.
- For GWE and HIAs, who had the lowest proportion indicating good/excellent health at Time 1, there was an increase in those reporting good/excellent health by Time 2.
- TRAs had the highest proportion reporting good/excellent health at Time 1 (78%) but this decreased significantly by Time 2 (72%).
- GWE and HIAs had a similar increase in the proportion reporting good/excellent health of around 8 percentage points.
- When we analysed the change in general health relative to that at Time 1 we found that both GWE and HIAs had a relative increase of 13% and TRAs had a decrease of 7% relative to the measure at Time 1.
- The rank position of GWE on this indicator changed from fourth at Time 1 to first at Time 2.

Short Form 12 Physical Component Summary (SF12-PCS)

The 'Short Form 12' survey includes six questions relating specifically to participants' physical health and indicating how much, if at all, it impedes their daily routine or causes them to accomplish less than they would like. These responses can be combined to give an overall score or component summary for a participant's physical health, ranging from 0 to 100[17]. Figure 38 shows the change in mean SF12-PCS score over time for all five IATs.

Figure 38: Short Form 12 Physical Component Summary Mean Score (SF12-PCS).

[1] Dashed line denotes a change over time that is not statistically significant.

Findings:

- Three of the five IATs have seen a statistically significant change in their mean SF12-PCS score over time. LRAs and PEs saw no significant change in this indicator over time.
- GWE participants saw the greatest increase in mean SF12_PCS score over time, an increase of six points. GWE was also the IAT with the lowest mean SF12-PCS score at Time 1.
- TRAs saw a significant decrease in their mean SF12-PCS score over time, a drop of 2 percentage points. TRAs had the highest mean SF12-PCS score at Time 1.
- When we calculated the change in mean score relative to Time 1 we found that GWE had the greatest relative increase (14%).
- The rank position of GWE on this indicator changed from fifth at Time 1 to first at Time 2.

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[17] Ware JE, Koninski M, Turner-Bowker DM, Gandek B. How to score version two of the SF-12 Health Survey. Lincoln, RI: Quality Metric Incorporated; 2005.

Walking in the neighbourhood

As well as being asked about any physical activity they regularly undertake, participants were also asked specifically about walking in their neighbourhood. Respondents were asked if they went walking in their neighbourhood and the duration and frequency of these walks. The CMO guidelines regarding walking for health advise that people should walk for at least 20 minutes a day, four times a week. Figure 39 shows the proportion of participants in each IAT that report walking in their neighbourhood according to these guidelines and is given at both time points.

Figure 39: Walking in the neighbourhood for 20+ minutes (4 or more days out of the last 7).
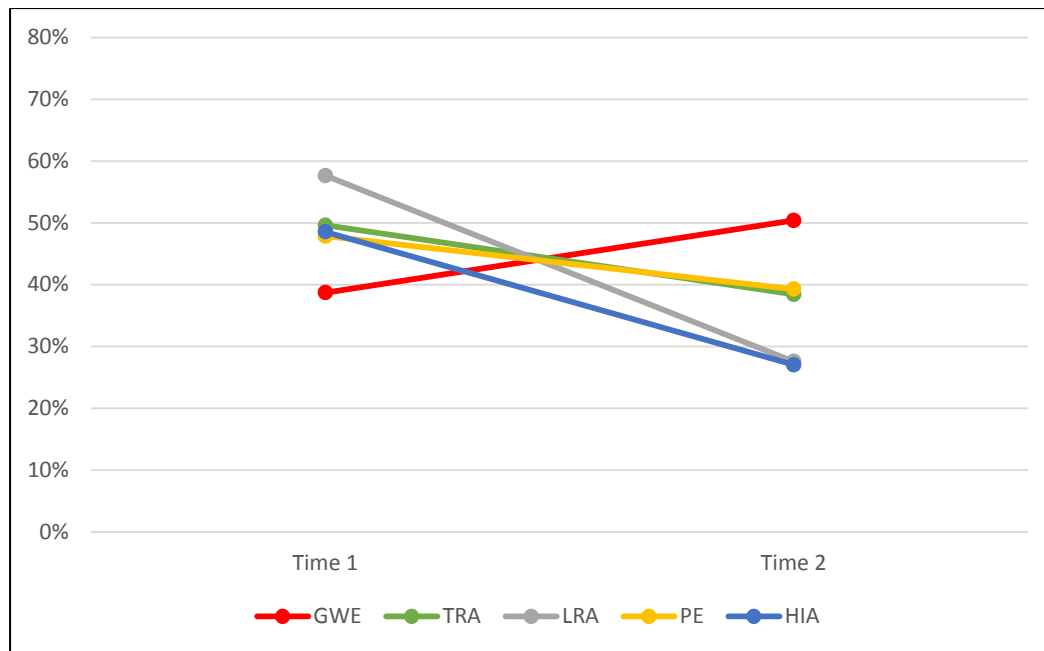
We found that:
- All IATs had a statistically significant change in the level of participants walking in their neighbourhood on a regular basis for 20 minutes or more.
- GWE was the only IAT that reported an increase in this measure rising from 39% at Time 1 to 50% by Time 2 making it the IAT with the highest proportion of regular walkers by Time 2.
- Of the four IATs that reported a decrease in regular walking in the neighbourhood, LRAs saw the greatest decrease dropping from 58% to 28% by Time 2.
- When we analysed the change relative to Time 1 we found that GWE participants had an increase of 30% and LRAs had the greatest relative decrease (52%).

Physical activity

Participants were asked about any physical activity they might undertake and the frequency, intensity and duration of that activity. Frequency was measured on a weekly scale, intensity was described as vigorous or moderate and the duration was recorded in minutes. This data was analysed so that the moderate and vigorous exercise measures were equivalised for combination into a single measure. This was added to the data identifying regular walkers to give an aggregate measure of physical exercise. The CMO recommends 150 minutes of moderate or 75 minutes vigorous exercise per week so we used this MVPA guideline as our cut-off point for measuring physical activity. As reported in our earlier headline indictors report, our measure of physical activity is less precise than that used in the Scottish Health Survey (SHeS), although it does contain the same main three elements[18].

Figure 40 shows the proportion of respondents at each time point who reported being active to the recommended guideline or exceeding it. As before these results are given for all five IATs.

Figure 40: Meeting physical activity (MVPA) guidelines.
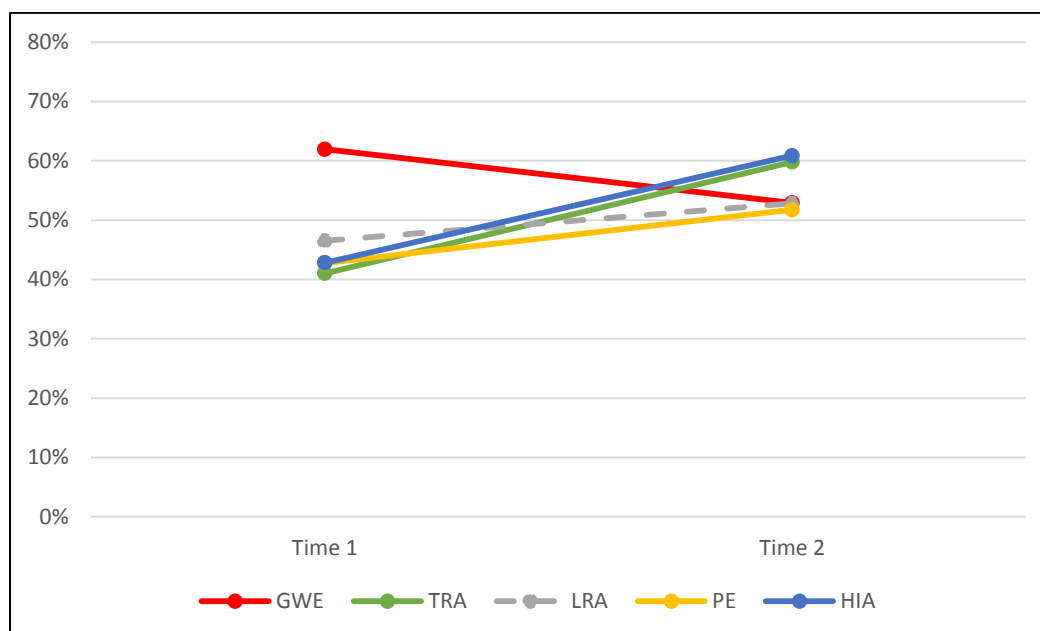
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- All IATs apart from LRAs had a statistically significant change in the proportion of respondents meeting or exceeding the recommended amount of physical activity.
- TRAs, PEs and HIAs have seen an increase in the proportion meeting the guidelines with TRAs experiencing the greatest increase (19 percentage points).

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[18] For further information about the aggregate physical exercise measure see: Gannon M, Clark J, Kearns A. *Monitoring the impacts of the Commonwealth Games and regeneration on the east end of Glasgow: headline indicators 2012-2016*. Glasgow: GoWell; 2018. Available at:
http://www.gowellonline.com/publications/453_glasgow_2014_games_and_regeneration_headline_indicators_2012-2016

- GWE participants had the highest proportion of respondents meeting the guidelines at Time 1 but this decreased by 9 percentage points by Time 2. The fact that the rate of meeting the MVPA guideline in GWE at Time 2 (53%) was close to that reported by the SHeS in 2015 for the most deprived quintile of areas in Scotland (50%) suggests that the GWE baseline rate for meeting the guideline at Time 1 (63%) was untypically high for an area such as this, which may partly explain the drop over time recorded here.
- When we looked at the change relative to Time 1, TRAs had the greatest increase (46%).
- GWE had a decrease of 15% relative to Time 1.

Mental health

In this section we present the results for three different measures relating to mental health. The first of which, the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), is a score derived from a number of responses to statements describing different aspects of mental health. The second measure is another composite score, the mental health component of the SF12 survey. Our final measure relates to GP consultations in the past year that concerned mental health.

Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS)

A shortened version of the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) was used to measure mental health. This scale comprises a series of statements with participants rating their agreement or disagreement. These statements include, for example, rating how optimistic or relaxed they feel and how effective they think they are in dealing with problems. These responses are assigned a numerical value and this is combined to give the overall score. A low score indicates poor mental health and the highest score that can be achieved is 35. In the full version of the WEMWBS there are 14 statements the shortened version used here is based on a summary of 7 statements[19]. Figure 41 shows the mean WEMWBS score for each IAT and the change in this over time.

Figure 41: Mental wellbeing (WEMWBS) mean score.
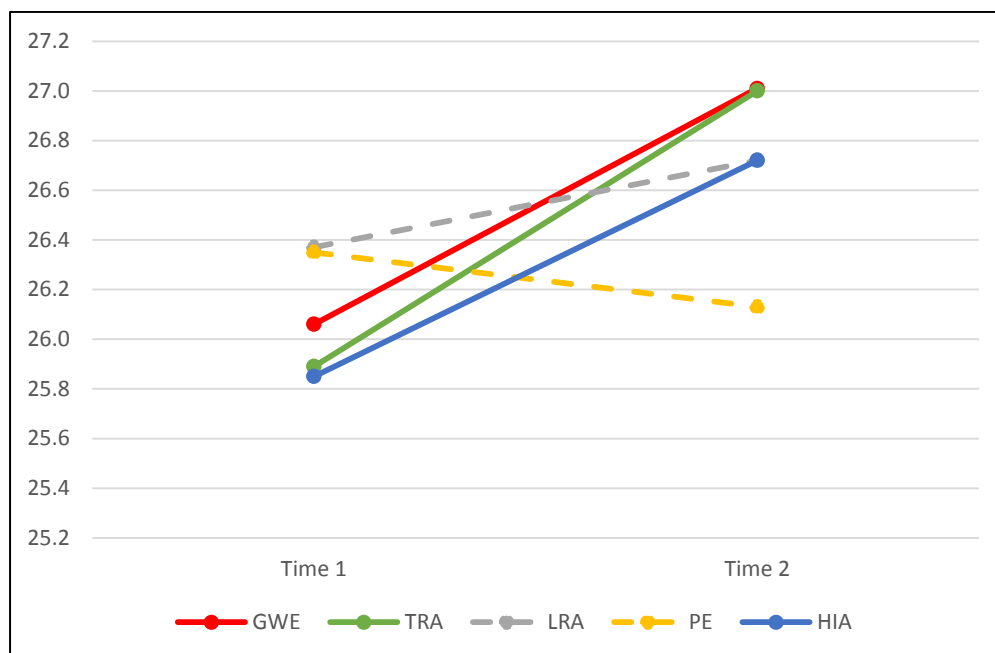
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- Three of the IATs had a statistically significant increase in their WEMWBS score over time, indicating an improvement in mental health. The change across all IATs is minor, only around 1 point.
- TRAs had the greatest increase in WEMWBS score (1.1 points).

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[19] Tennant R, Hiller L, Fishwick R, Platt S, Joseph S, Weich S, Parkinson J, Secker J, Stewart-Brown S. The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation. *Health and Quality of Life Outcomes* 2007;5:63.

- GWE was ranked third at Time 1 but by Time 2 was joint first with TRAs with a mean score of 27.
- When we analysed the change in mean scores relative to Time 1 we found that TRAs had the greatest increase (4%), with GWE having a similar level of increase relative to Time 1.

Short Form 12 Mental Component Summary (SF12-MCS)

This section shows the results of the mental component of the Short Form 12 survey. The responses to the six questions relating to mental health were combined to produce a summary score for mental health (ranging from 0-100), a low score indicating poor mental health[20]. Figure 42 shows the mean scores for all five IATs at both time points.

Figure 42: Short Form 12 Mental Component Summary Mean Score (SF12-MCS).
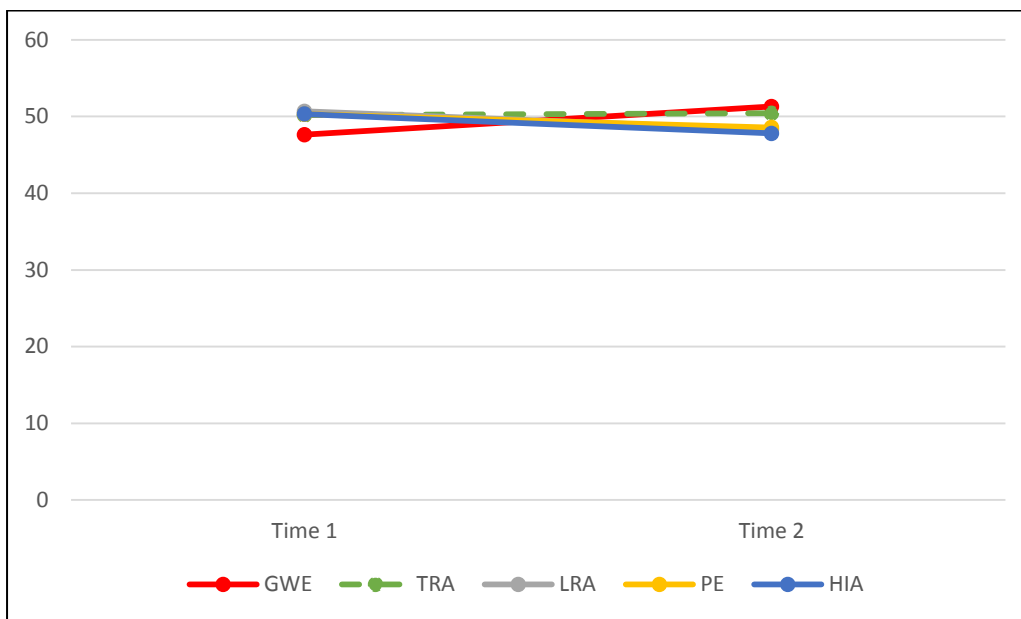
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- All IATs apart from TRAs saw a statistically significant change in the SF12-MCS over time.
- GWE saw an increase in SF12-MCS score over time from just under 48 points to 51 by Time 2. GWE participants had the lowest SF12-MCS at Time 1 but were ranked first by Time 2.
- LRAs, PEs and HIAs all had decreases in SF12-MCS indicating an overall deterioration in mental health for these IATs. HIAs had the greatest decrease of 2.5 points.
- When we measured the change in mean scores relative to Time 1 we found that HIAs had the greatest relative decrease (5%).
- GWE had a relative increase of around 8%.

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[20] Ware JE, Koninski M, Turner-Bowker DM, Gandek B. *How to score version 2 of the SF-12 Health Survey*. Lincoln, RI: Quality Metric Incorporated; 2005.

Consultation with GPs regarding mental health issues

The final mental health indicator is GP consultation. We asked participants if they had consulted a GP in the last 12 months pertaining to mental health issues. Figure 43 shows the proportion of respondents from each IAT that had seen a GP for mental health issues in the past year. The results are given for both time points.

Figure 43: GP consultation for mental health issues in past 12 months.
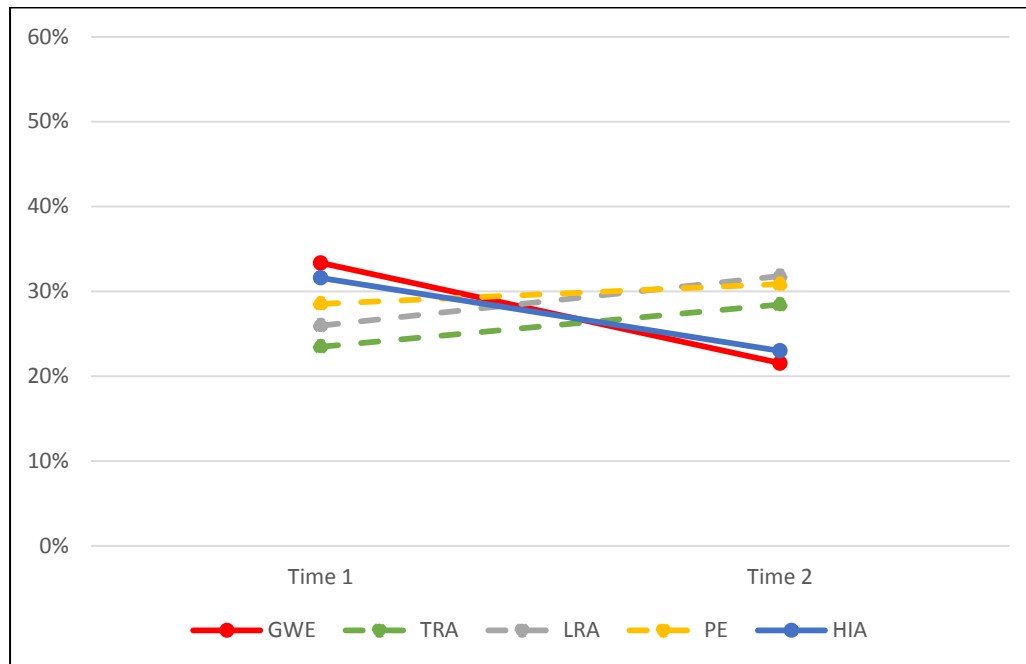
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- Only two IATs, GWE and HIAs, had a statistically significant change in this indicator.
- GWE participants had the greatest decrease with a drop of 11 percentage points from 33% at Time 1 to 22%.
- When we analysed the change relative to Time 1, GWE had the greatest relative decrease (35%).
- GWE was ranked fifth (worst) on this indicator at Time 1, but was ranked first (best) by Time 2.

Health behaviours

Participants were asked about a number of health behaviours, in this section we will report on the proportion of current smokers and drinkers in each IAT and whether this has varied over time. We will also look at some aspects of participants' diets with questions about the consumption of fresh fruit, fizzy drinks and fast food.

Smoking

Figure 44 shows the proportion of respondents that said they currently smoked, either daily or occasionally, for each IAT and at both time points.

Figure 44: Rate of current smoking.
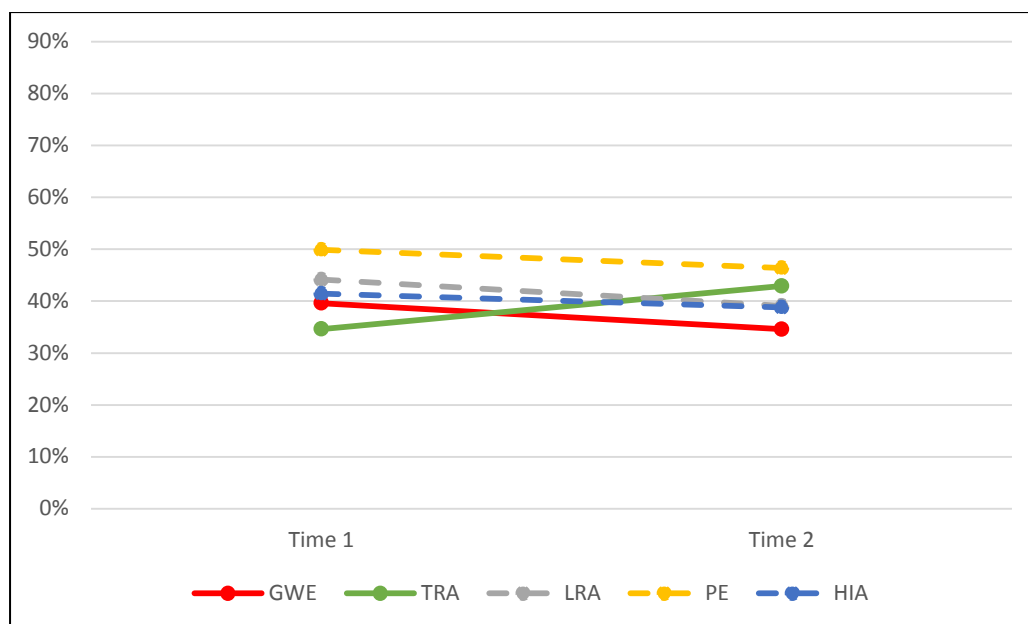
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:

- Only two IATs, GWE and TRAs, saw a statistically significant change in the proportion of smokers over time.
- The proportion of smokers resident in GWE decreased by 5 percentage points.
- TRAs saw an increase in the proportion of smokers from 35% to 43% by Time 2 but they reported the lowest proportion of smokers at Time 1.
- When we analysed the change in the proportion of smokers relative to that at Time 1 we found that GWE residents had a relative decrease of around 13% whereas TRAs had a relative increase of 24%.
- For all other IATs there was no change in the level of smokers over time, PEs had the highest proportion of smokers at Time 1 (50%).

Drinking alcohol

Participants were asked if they consumed alcohol and Figure 45 shows the proportion of respondents that reported drinking alcohol either daily or occasionally. These results are shown by IAT and at both time points.

Figure 45: Rate of current alcohol drinkers.

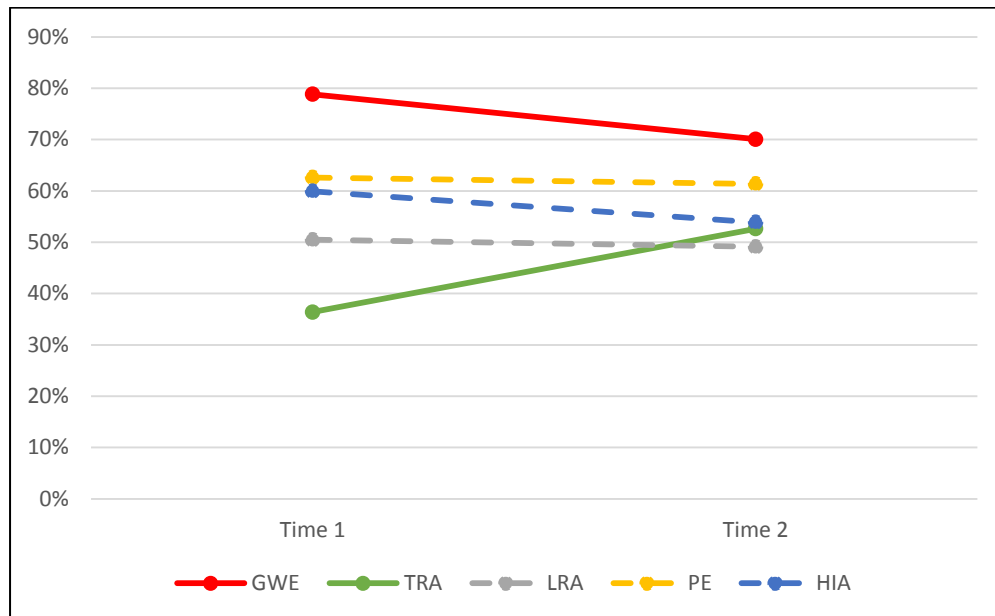[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- Only two IATs, GWE and TRAs saw a statistically significant change in the proportion of alcohol drinkers over time.
- GWE had a decrease in the proportion of alcohol drinkers from 79% at Time 1 to 70% by Time 2. GWE had the highest proportion of alcohol drinkers at Time 1 and although this decreased over time it remained the IAT with the highest proportion of alcohol drinkers at Time 2.
- TRAs had an increase in the proportion of alcohol drinkers from 36%, the lowest of all IATs, at Time 1 to 53% by Time 2.
- In terms of change relative to the measure at Time 1, GWE saw a relative decrease of 11% and TRAs had an increase of 45%.

Diet

The following three indicators cover different aspects of healthy eating which include the consumption of unhealthy foods and drinks such as fast food and fizzy drinks and more healthy options like fruit.

Respondents were asked how many portions of fruit they normally ate in a day. Public health guidelines recommend that people eat five portions of fruit and vegetables a day; two of these being fruit. Figure 46 shows the proportion of respondents that reported eating two or more portions of fruit per day. This is shown for all IATs and at both time points.

Figure 46: Proportion of respondents eating two or more portions of fruit per day.
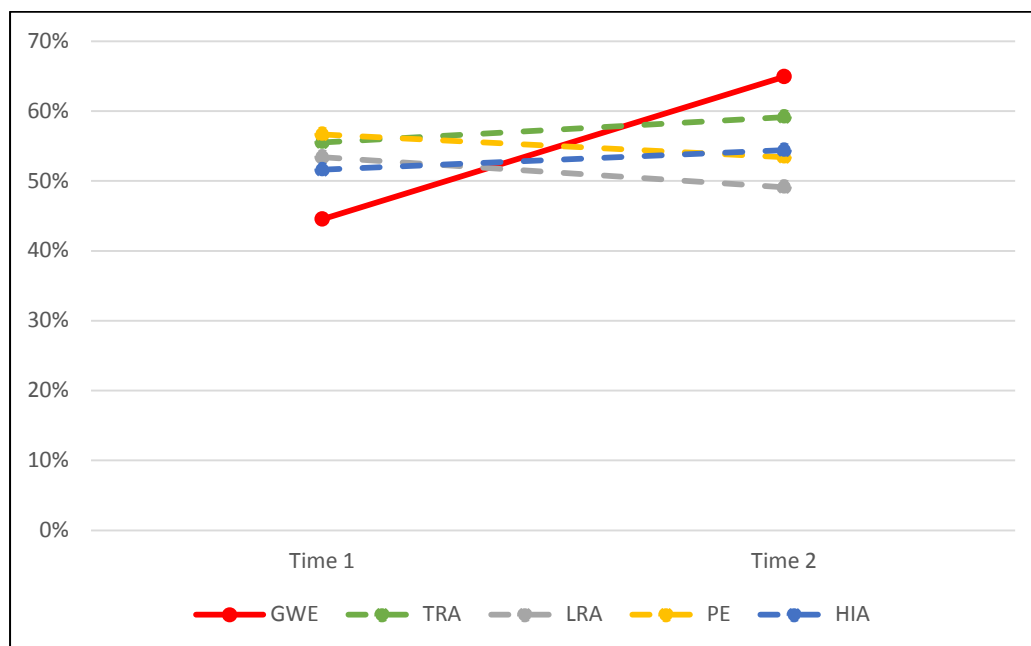
[1] Dashed line denotes a change over time that is not statistically significant.

Findings:
- GWE was the only IAT with a statistically significant change in this indicator over time.
- At Time 1 GWE had the lowest proportion of residents reporting the consumption of 2 or more portions of fruit per day (45%) and this rose by 20 percentage points over time.
- For all other IATs over half of all respondents reported consuming 2 or more portions of fruit per day at Time 1 with no significant change in this measure over time.
- For GWE the change in this indicator relative to Time 1 was an increase of 45%, and a move to the top ranking.

As part of the survey's section on diet, respondents were asked about the number of fizzy drinks they consumed a day. By fizzy drinks we mean soft drinks high in sugar content. Figure 47 shows the proportion of respondents who reported consuming at least one soft drink per day by IAT and the change over time.

Figure 47: Proportion of respondents drinking one or more fizzy drinks a day.
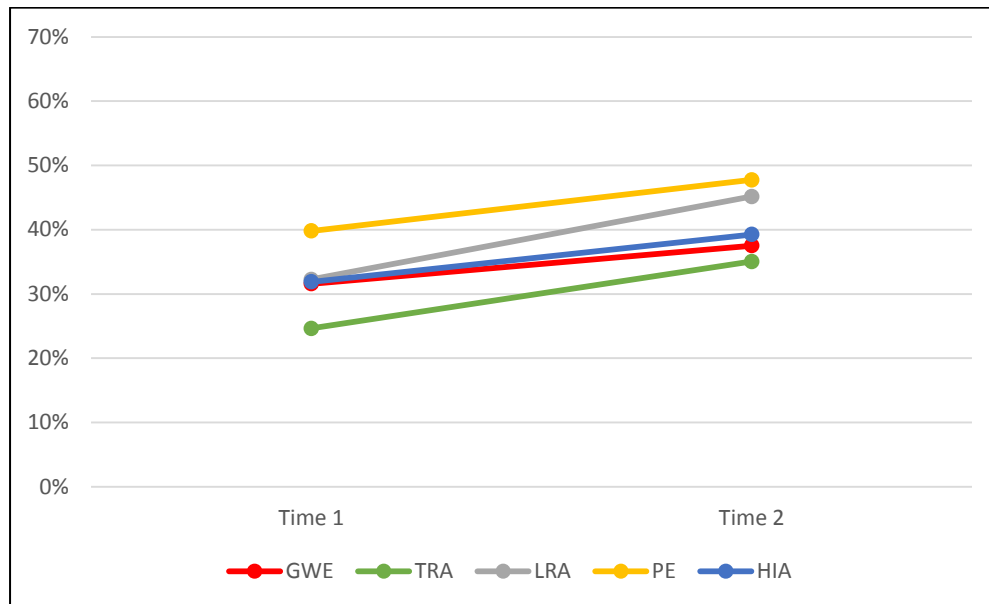
Findings:
- All IATs saw a statistically significant increase in the proportion consuming fizzy drinks from Time 1 to Time 2.
- PEs had the highest proportion at Time 1 (40%) and this increased by Time 2 (48%).
- LRAs had the greatest increase in the consumption of fizzy drinks going from 32% at Time 1 to 45% by Time 2.
- GWE had an increase of six percentage points, the smallest change of all IATs.
- When we analysed the change in this indicator relative to Time 1 we found that TRAs had the greatest relative increase (42%).

The final indicator related to health behaviours concerns fast food. Participants were asked on how many days a week they have a takeaway or fast food for their main meal. Figure 48 shows the proportion of respondents that had fast food for their main meal more than once a week. This is given by IAT and for both time points.

**Figure 48: Proportion of respondents consuming fast food/takeaway main meals more than once a week.**
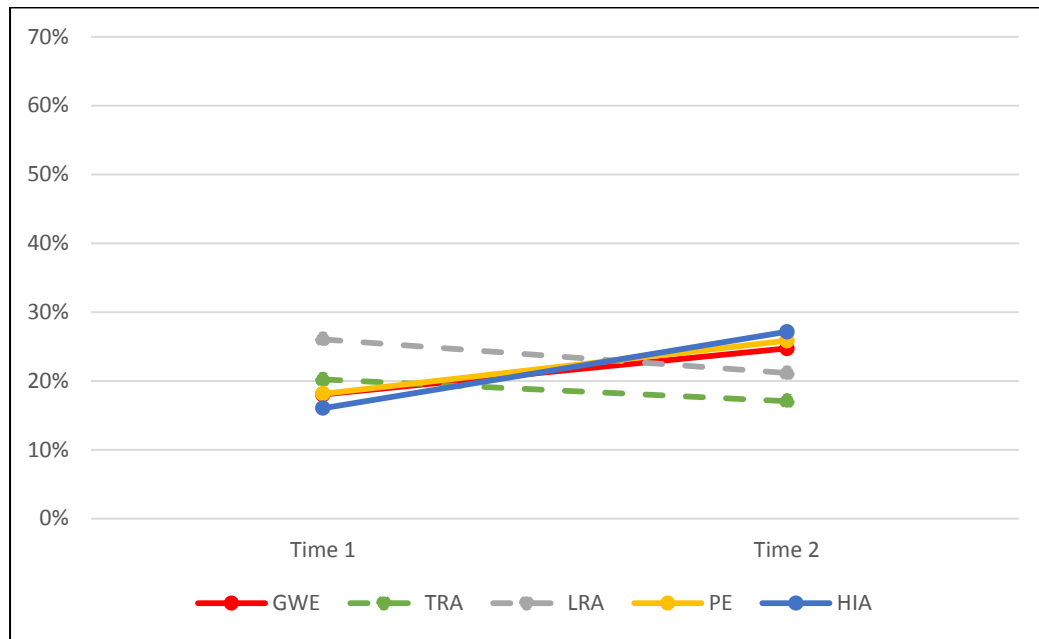
[1] Dashed line denotes a change over time that is not statistically significant.

We found that:
- Three of the IATs had a statistically significant increase in the proportion of respondents reporting eating one of more takeaways in a week.
- HIAs had the greatest increase in the proportion of respondents consuming takeaway meals rising from 16% at Time 1 to 27%. HIAs moved from being ranked first (lowest rate of fast food consumption) to fifth (highest rate of fast food consumption).
- GWE had a slightly smaller increase of 7 percentage points.
- When we calculated the change relative to that at Time 1 we found that HIAs had the greatest relative increase (69%).
- GWE had an increase of 37% relative to the measure at Time 1, and dropped from being ranked second to third.

6.2 Relative change in indicators across IATs

In this section we focus on relative change in the indicators compared with their baseline position for GWE and each of the other IATs.

Table 15 lists all of the health- and wellbeing-related measures and indicates whether or not GoWell East participants (GWE) had better outcomes over time than the other intervention area types when change relative to Time 1 is measured. The four other area types have been divided into two groups: the regeneration areas, TRAs and LRAs; and the non-regeneration areas, PEs and HIAs.

Table 15. Health and wellbeing indicators: relative change in GWE compared with other IATs.

	Regeneration areas		Non-regeneration areas	
	TRA	**LRA**	**PE**	**HIA**
Physical health:				
General health (very good/excellent)	✓	✓	✓	✓
SF12 Physical Component Summary	✓	✓	✓	✓
Walking in the neighbourhood	✓	✓	✓	✓
Physical activity (meets guidelines)	X	X	X	X
Mental health:				
WEMWBS score	X	✓	✓	✓
SF12 Mental Component Summary	✓	✓	✓	✓
GP consultation for mental health issues	✓	✓	✓	✓
Health behaviours:				
Smoking	✓	✓	✓	✓
Drinking alcohol	✓	✓	✓	✓
Fruit (2+ portions per day)	✓	✓	✓	✓
Fizzy drinks (1+ per day)	✓	✓	✓	✓
Fast food/takeaway as main meal (more than 1 per week)	X	X	✓	✓

✓ Relative change on indicator from T1 to T2 is more positive in the case of GWE than for the comparison IAT.

One way of summarising the picture is to consider GWE against each of the other IATs. Here we focus on the two regeneration IATs in turn.

Comparing GWE with the TRAs in terms of relative change over time, we find:
- GWE outperformed the TRAs on nine of the 12 indicators.
- In relation to the physical health, GWE saw greater relative change in general health, SF12 Physical Component Summary and walking in the neighbourhood. TRAs outperformed GWE in one area and that was respondents meeting the physical activity guidelines.
- For the indicators relating to mental health GWE outperformed TRAs when it came to the mental component of the SF12 survey and reported relatively fewer GP consultations for mental health issues. Although TRAs outperformed GWE with regards to the other aggregate mental health score (WEMWBS) GWE was ranked second for relative change in this measure.

- GWE had better outcomes than TRAs for four of the five health behaviour indicators with relative decreases in smoking and drinking alcohol and soft drinks. GWE also had a greater relative increase in the consumption of fruit.
- The one health behaviour where GWE did not outperform TRAs was the consumption of fast food with a relative increase in the proportion of GWE residents eating takeaways.

Comparing relative change in the GWE sample with the corresponding group from LRAs we found:
- GWE outperformed the LRAs on 10 of the 12 indicators.
- Similar to the results for TRAs, GWE performed better than the LRAs on three of the four physical health indicators with physical activity again the only area where they underperformed.
- GWE performed better than the LRAs in relative terms in respect of all three mental health indicators.
- As with the TRAs, GWE performed better than the LRAs on four of the five health behaviour indicators, the exception being the proportion eating takeaway meals.

GWE also performed better in relative terms over time on the majority of indicators when compared with both the PEs (11 indicators) and HIAs (11 indicators). Physical activity was the only indicator where PEs and HIAs had a better outcome than GWE.

A second way of summarising the situation is to consider the relative performance of GWE on particular indicators in relation to all the other IATs together.

There are several indicators where GWE outperformed most other areas (i.e. three or four of the other IATs) in relative terms over time. These include the following indicators:
- General health, physical health as reported in the SF12 PCS, and walking in the neighbourhood.
- The mental health component of the SF12 survey and the proportion seeking a GP consultation for mental health issues.
- Indicators of unhealthy behaviour such as smoking and consuming alcohol and soft drinks, and the healthy behaviour of eating two or more portions of fruit per day.

In contrast, there are a few indicators where the performance of GWE was worse than most other areas in respect of relative change over time. These indicators were spread across the three sections and not concentrated in one area. They include:
- Total physical activity, namely the proportion meeting the recommended guidelines.
- Consumption of takeaway regeneration areas only.

6.3   The influence of area type after controlling for socio-demographic factors

In this section, we examine whether GWE or any of the other IATs is significantly associated with each of the outcomes at each time point, after taking into account respondent characteristics including gender, age, household type, length of residence, housing tenure and employment status. This enables us to consider whether the area type itself, or change within the area, appears to have a positive or negative effect on the outcome, adjusting for the fact that respondent characteristics vary between the IATs.

We present results from regression modelling of the outcomes in the three groupings of variables, as above. In doing this, we use HIAs as the reference category for the IAT variable, being the area which often had the better values on the outcome variables.

Physical health

Table 16 lists the odds ratios for the variables included in the logistic models (1, 3 and 4) and the coefficients for the linear model (2). The significance level of each variable is also shown.

Table 16. Models for physical health indicators 1 to 4 with odds ratios and significance level.

Variables in the model	1. General health		2. SF12 Physical Component Summary		3. Walking in neighbourhood		4. Physical activity	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Gender:								
Male (ref)								
Female	0.86	0.95	-0.27	-0.93*	0.72****	0.98	0.80***	0.86
Age	0.95***	0.95****	-0.30****	-0.27****	0.98****	0.98****	0.98****	0.98****
Length of residence:								
3-10 years (ref)								
<2 years	1.33*	1.09	1.04*	0.30	1.10	1.15	1.08	1.21
11+ years	0.80*	0.93	-1.66***	-1.05*	0.90	1.04	0.78*	0.98
Household type:								
Pensioner hhld (ref)								
Hhld with children	0.64	1.48	-0.50	2.13*	1.04	0.94	0.86	1.28
Hhld without children	0.41***	0.80	-2.74**	0.05	0.89	0.80	0.79	0.86
IAT:								
HIA (ref)								
GWE	0.72*	0.56****	-1.66*	-0.84	0.69***	0.96	2.12****	0.54****
TRA	1.50*	0.72	1.66*	-0.45	0.86	0.99	0.76*	0.84
LRA	0.99	0.62**	-0.87	-0.10	1.35*	0.96	1.03	0.69*
PE	0.89	0.70*	-1.21	-1.16*	0.92	1.05	0.91	0.65****
Tenure:								
Social renter (ref)								
Private renter	1.24	2.11****	-0.10	1.37*	0.97	0.92	0.94	0.93
Owner occupier	2.01****	1.93****	3.52****	3.30****	1.17	1.24	1.28*	1.13
Tenure other	2.30	2.54	1.83	-0.15	0.96	7.22**	0.65	4.53*
Employment status:								
Working (ref)								
Out of work	0.16****	0.18****	-6.16****	-6.07****	1.14	0.84*	0.63****	0.44****
Retired	0.40****	0.50***	-6.11****	-4.34****	1.31	0.81	0.66*	0.47****

Note: **** p<.001, *** p<.005, ** p<.01, * p<.05

At Time 1 we can see the following effects of GWE residence, compared with that of the other IATs:

- GWE residence had a negative effect on general health with the odds of reporting very good or excellent health reduced by 28%. TRAs had a positive effect on this indicator with residents 1.5 times more likely than HIA residents to report very good or excellent health.
- GWE had a negative effect upon the physical component of the SF12 survey whereas TRAs had a positive effect.
- GWE had a negative effect upon respondents reporting walking in their neighbourhood, lowering the odds of them doing so by 31%. LRAs has a positive effect on this indicator.
- GWE had a strong positive effect upon physical activity, with GWE respondents being twice as likely to report meeting the guidelines for physical activity than respondents in HIAs. Bear in mind however our earlier caveat that the GWE survey may have recorded an untypically high level of physical activity for deprived areas at Time 1. A negative effect on this indicator was evident for TRAs.

At Time 2 we can see the following effects of GWE residence, compared with that of the other IATs:

- GWE residence still has a negative effect in general health, lowering the odds of being in good health compared with HIAs by 44%. LRAs and PEs also now have a negative effect. The positive effect of TRAs no longer exists.
- The negative effect of GWE residence on the SF12 physical component is not apparent at T2 and the positive effect of TRA has also disappeared. PEs now have a negative effect on the SF12 physical component score.
- The negative effect of GWE residence upon regular walking in the neighbourhood no longer exists, neither does the positive effect of TRAs.
- The positive effect of GWE residence on physical activity is now a negative one reducing the odds of meeting the exercise guidelines by 46%. The negative effect of TRAs no longer exists, but LRAs and PEs now have a negative effect.

Mental health

Table 17 lists the coefficients for the variables in the two linear models (5, 6) relating to the mental health scores and the odds ratios for those included in the logistic model (7) related to GP consultations. The significance level of each variable is also shown.

Table 17. Models for mental health indicators (5 to 7) with odds ratios and significance level.

Variables in the model	5. WEMWBS score		6. SF12 Mental Component Summary		7. GP consultation	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Gender:						
Male (ref)						
Female	-0.41*	-0.69****	-2.01****	-0.76	0.59****	0.61****
Age	-0.05****	-0.07****	-0.08****	-0.10****	0.99**	0.99
Length of residence:						
3-10 years (ref)						
<2 years	-0.07	0.84***	1.51***	2.33****	1.24	1.22
11+ years	-0.48*	-0.15	-0.97	0.46	0.83	0.99
Household type:						
Older hhld (ref)						
Hhld with children	-1.73***	-0.58	-3.11**	-2.66**	0.53*	0.77
Hhld without children	-2.79****	-1.14**	-5.50****	-4.30****	0.32****	0.51***
IAT:						
HIA (ref)						
GWE	-0.45	-0.59*	-3.50****	1.73**	0.64**	0.81
TRA	0.23	-0.07	0.63	1.86*	1.72***	0.68
LRA	0.35	0.16	0.55	0.89	1.44	0.66*
PE	0.33	-0.52	0.05	0.85	1.18	0.66**
Tenure:						
Social renter (ref)						
Private renter	1.17****	0.57	0.64	-0.24	1.71**	0.98
Owner occupier	1.08****	1.51****	2.64****	2.88****	1.86****	1.02
Tenure other	0.67	2.64**	-0.62	6.17***	4.53*	1.63
Employment status:						
Working (ref)						
Out of work	-2.94****	-2.57****	-6.76****	-6.96****	0.24****	0.25****
Retired	-1.72****	-0.49	-0.88	-2.70**	0.49***	0.53**

Note: **** p<.001, *** p<.005, ** p<.01, * p<.05

At Time 1 we can see the following effects of GWE residence, compared with that of the other IATs:

- None of the IATs, including GWE, have an effect on the WEMWBS score when controlling for other characteristics.
- In contrast to the WEMWBS model, GWE residence had a negative effect on the mental health component of the SF12 survey.
- GWE residence had a positive impact (i.e. negative statistical effect) upon GP consultation for mental health issues, reducing the odds of doing this by 36%, compared with HIA residents. TRA residence increased the odds of someone attending a consultation regarding their mental health by 72%.

At Time 2 the following effects of GWE residence were evident:

- GWE residence has a negative effect at T2 on the WEMWEBS score, but all other IATs continue to have no impact.
- GWE now has a positive effect on the SF12 mental health score.
- The positive impact of GWE on GP consultation is no longer apparent at Time 2. Both LRAs and PEs now have a positive impact (i.e. negative effect) on the likelihood of a GP consultation about mental health issues, reducing the odds of doing so by 34%.

Health behaviours

Table 18 shows the models relating to five health behaviours. The majority are harmful or less healthy behaviours such as smoking, drinking alcohol and eating fast food. One of the models describes a more healthy behaviour, the consumption of fruit.

At Time 1 the following effects of GWE residence on participants' health behaviours were evident:

- GWE had no effect upon the likelihood of someone smoking. In contrast, those living in TRAs were less likely to smoke compared with people living in HIAs and those in PEs had increased odds of being smokers.
- GWE had a positive effect on the odds of drinking alcohol with residents 2.3 times more likely to drink compared with those in HIAs. In contrast those living in TRAs and LRAs were less likely to drink alcohol.
- GWE residence had a negative effect on fruit consumption with residents 36% less likely to consume the recommended amount of fruit in their diet. TRAs had a positive effect on this variable, with residents more likely to consume two or more portions of fruit compared with HIA residents.
- GWE had no effect on the consumption of soft drinks but TRA residence had a negative effect (positive impact) with residents less likely to consume fizzy drinks than those living in HIAs.
- GWE had no effect on fast food consumption. TRAs and LRAs both had a positive effect (negative impact) on this indicator increasing the odds of residents having a takeaway as their main meal more than once a week when compared with HIAs.

At Time 2, the following effects of GWE residence were evident:

- As was the case at Time 1 GWE has no effect on smoking when other characteristics are taken into account. The negative effect of TRA residence present at Time 1 does not exist. PEs continue to have a negative impact (positive statistical effect), increasing the odds of smoking but to a lesser degree than at Time 1.
- GWE still has a positive effect on alcohol consumption, increasing the odds of being a drinker but the effect is not a strong as at Time 1. The negative effect of TRA and LRA residence found at Time 1 no longer exists. PE residence now increases the odds of drinking, making residents 1.5 times more likely to drink alcohol when compared with HIA residents.
- GWE residence now has a positive effect on fruit consumption, increasing the odds of meeting the recommended guidelines. The positive effect of TRAs on this indicator has disappeared.
- GWE continued to have no effect on the consumption of fizzy drinks. The negative effect of TRAs from Time 1 disappeared.

- GWE now has a positive impact (negative effect) on fast food consumption, lowering the odds of having a takeaway more than once a week by 27%. TRAs and LRAs now also have a negative effect on fast food consumption, similarly lowering the odds of a resident having regular takeaways when compared with HIAs.

Table 18. Models for health behaviour indicators (8 to 12) with odds ratios and significance level.

	8. Smoking		9. Drink alcohol		10. Fruit		11. Fizzy drinks		12. Fast food	
Variables in the model	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Gender:										
Male (ref)										
Female	0.65****	0.74****	0.69****	0.81*	1.26***	1.59****	0.77***	0.80*	0.63****	0.67****
Age	1.00	1.00	0.99****	0.99	1.00	1.00	0.96****	0.97****	0.97****	0.98****
Length of residence:										
3-10 years (ref)										
<2 years	0.77**	1.10	0.77**	0.85	0.92	1.05	0.87	0.74**	0.63****	0.67***
11+ years	1.16	1.00	1.03	0.82*	0.89	0.72***	1.64****	1.11	1.10	0.99
Household type:										
Older hhld (ref)										
Hld with children	1.62*	0.98	0.99	0.53***	1.09	1.28	1.27	0.88	0.86	0.70
Hld without children	2.54****	1.32	1.35	0.94	0.76	1.15	1.26	1.16	0.90	0.89
IAT:										
HIA (ref)										
GWE	1.16	1.04	2.30****	1.80****	0.64****	1.46***	0.96	0.83	1.36	0.73*
TRA	0.63***	1.07	0.39****	0.99	1.31*	1.29	0.50****	0.79	1.49*	0.50***
LRA	1.12	0.91	0.66**	0.91	1.05	0.91	0.91	1.14	1.80**	0.64*
PE	1.55***	1.41**	1.13	1.50***	1.13	1.03	1.32	1.30	1.44	1.27
Tenure:										
Social renter (ref)										
Private renter	0.83	0.71**	1.05	1.19	1.15	1.49***	0.69*	0.67**	0.99	1.65***
Owner occupier	0.41****	0.42****	1.41**	1.73****	1.50****	1.79****	0.52****	0.41****	0.78	0.74
Tenure other	0.99	0.21*	1.39	0.25***	0.92	2.29	0.84	0.47	0.99	0.70
Employment status:										
Working (ref)										
Out of work	2.36****	2.38****	0.67****	0.60****	0.53****	0.58****	1.29*	1.32**	1.10	1.06
Retired	1.90***	0.99	0.91	0.49****	0.72	0.98	1.15	1.39	0.74	0.86

Note: **** p<.001, *** p<.005, ** p<.01, * p<.05

6.4   Summary

Across nine of the 12 health and wellbeing indicators GWE had positive absolute change over time and this was statistically significant. In terms of absolute change, GWE outperformed the other IATs for eight of these indicators, spread across all three themes. Three such indicators were related to physical health, another three to mental health and the remaining two to health behaviours. The rank position of GWE among the IATs improved for eight out of the 12 indicators moving from last to first for four of them. The GWE ranking remained unchanged relating to two indicators, current alcohol users and daily consumption of soft drinks, being worst and second best on these indicators, respectively. The GWE rank position worsened for two of the indicators, physical activity and fast food consumption. For physical activity GWE went from first to third and for fast food consumption from second to third.

When we examine change over time relative to an IAT's situation at Time 1 there is evidence that GWE is improving in relative terms. It outperforms TRAs across nine of the 12 indicators and outperforms LRAs for ten out of 12 indicators, across the four year interval. When compared with non-regeneration areas GWE does better again, outperforming both PEs and HIAs for 11 of the 12 indicators. Total physical activity is the only indicator where PEs and HIAs have performed better in relative terms. Compared with the other IATs, the performance of GWE was weakest when it came to physical activity. Accepting that physical activity levels in GWE may not have declined in reality in the way reported from our study samples, it was nonetheless the case that we found no evidence among adults that engagement in physical activity has increased in the area, with reported involvement in exercise behaviour dropping over time[21]. GWE was also outperformed by both regeneration areas when it came to reducing fast food consumption.

After taking other socio-demographic and residential characteristics of the respondents into account, residing in GWE was found to have a negative effect on four of the 12 health and wellbeing indicators at Time 2: general health; total level of physical activity; mental wellbeing score (very small effect); and drinking alcohol. Similar negative effects for the first two of these (general health and physical activity) were observed in the LRAs, whereas negative effects on wellbeing and alcohol consumption were not observed in the other regeneration areas at Time 2. Conversely, GWE residence had positive effects at Time 2 on indicators of mental health; fruit consumption; and use of takeaway meals. Two of these positive effects, on mental health and use of takeaway meals, were also observed in the TRAs (and LRAs in the case of fast food).

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[21] See Gannon M, Clark J, Kearns A. *Monitoring the impacts of the Commonwealth Games and regeneration on the east end of Glasgow: headline indicators 2012-2016*. Glasgow: GoWell; 2018. Available at: http://www.gowellonline.com/publications/453_glasgow_2014_games_and_regeneration_headline_indicators_2012-2016

7 Conclusion

In this report we have compared change over time in residents' perceptions and reported circumstances in the East End of Glasgow with change recorded in other deprived areas in the city of Glasgow. This contributes to our assessment of the effects of a decade of area-based regeneration activity enacted in different ways across the city.

GoWell East experienced positive (beneficial) change on almost all indicators in two of the domains examined – neighbourhoods and housing, and health and wellbeing, and experienced positive change on a majority of indicators in the two other domains – communities and employment and finances. In terms of relative change over time (i.e. compared with their starting position) the Transformational Regeneration Areas (TRAs) outperformed GoWell East for many indicators in the neighbourhoods and housing domain (especially neighbourhood change and housing indicators), the communities domain, and the employment and finances domain. The first of these is not surprising given that the TRAs are receiving a housing-led regeneration programme, and the last of these may reflect changes in the resident population group in the TRAs due to relocation. However, GoWell East outperformed the Local Regeneration Areas on relative change over time on indicators within these three domains.

Compared with other areas, GoWell East appears to have performed particularly well in respect of indicators of the social environment, the perceived quality of local amenities, neighbour relations, feelings of belonging and social support, reported male full-time and female part-time employment, and the experience of difficulties paying for food and fuel. The progress noted here on employment echoes earlier findings for the immediately pre-Games period that local employability services and job brokerage schemes were reducing the unemployment claimant count in the area[22], and suggests that the effectiveness of these programmes were not dependent on the Games and legacy programmes alone.

GoWell East also saw positive change on most health and wellbeing indicators, and outperformed all comparison areas in terms of relative change on the vast majority of these indicators. In two cases, regular walking and mental health scores, GoWell East experienced positive change in contrast to negative change in all the comparison areas. It is also worth noting, however, the few indicators where other regeneration areas outperformed GoWell East in respect of relative change: mental wellbeing in the TRAs; reductions in fast food meal consumption in the TRAs and LRAs; and numbers meeting the physical activity guidelines in both the TRAs and LRAs.

The first of these areas of poor relative performance, mental wellbeing gains, may reflect the positive psychological impact of large-scale change due to demolition and redevelopment in the TRAs. Negative relative change on consumption of fast food meals was not unique to GoWell East but also occurred in the peripheral estates and housing improvement areas and reflects an ongoing challenge in terms of an unhealthy culture and environment surrounding food consumption. The last area of poor relative performance, physical activity, is disappointing given the recent occurrence of the Commonwealth Games, but not surprising in the light of our earlier comments about legacy efforts geared more towards young people, with barriers of health, access and cost facing adults in deprived areas such as GoWell East[23].

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[22] McTier A, McGregor A. *Review of Clyde Gateway Approach to Linking Opportunity and Need*. Glasgow: TERU, University of Glasgow; 2014.

[23] Clark J, Kearns A. Pathways to physical activity legacy: assessing the regeneration potential of multi-sport events using a prospective approach. *Local Economy* 2015;30(8):888-909.

Despite progress with regeneration, it was still the case that living in the East End could have negative effects upon outcomes for residents. This was true at the second time point for the majority of neighbourhood and housing indicators, suggesting that the regeneration programme had not yet sufficiently tackled issues of neighbourhood and housing quality, apart from the quality of parks and youth and leisure services, where positive effects of living in the East End were found. The situation was better for community indicators, where negative effects of East End residence were only observed for two indicators at the second time point, but the fact that these two indicators concerned the internal reputation of the area and perceived influence over decisions indicates that community engagement processes may be in need of enhancement in the post-Games period.

For the majority of the health and wellbeing indicators, over and above the socio-demographic characteristics of the respondents, living in the East End had either no effect or a positive effect upon the indicator, compared with living in Housing Improvement Areas (the reference group). In terms of health behaviours, by Time 2, there are positive effects of East End residence upon diet (more consumption of fruit and veg; less consumption of fast food meals) but negative effects on drinking and physical activity levels. The latter are issues that could be addressed in future years through a combination of the regeneration programme and public health interventions.

In the domain of employment and finances, positive impacts are more consistently evident. Living in the East End, compared with living in other deprived areas, had positive effects upon male and female employment, with these effects increasing over time. East End residence also had positive effects upon lowering the incidence of household financial difficulties, a reversal of the earlier situation. Perhaps these findings on employment and finances reflect some of the unique characteristics of the regeneration programme in the East End, in contrast to programmes elsewhere in the city. Nevertheless, the adult employment rate reported by participants in the East End was still only 50% at the second time point, compared with a city wide adult employment rate of 66.5%[24]. This reinforces a point we have previously made about the need to continue the regeneration effort, with strategic co-operation between key sectors, long after the Games legacy programmes have expired[25].

[24] Glasgow City Council. *Labour Market Trends for Glasgow. Report to Regeneration and Economic Policy Development Committee 16 August 2016.* Glasgow: GCC; 2016.
[25] Clark J, Kearns A. Going for gold: a prospective assessment of the economic impacts of the Commonwealth Games 2014 on the East End of Glasgow. *Environment and Planning C: Government and Policy* 2016;34(8):1474-1500.