Doncaster Local Delivery Pilot Behavioural Insight Work

Phase 1 - Technical Report

20th February 2019

BEHAVIOURAL SCIENCE
CONSORTIUM

Sheffield Hallam University

MANCHESTER 1824
The University of Manchester

Authors:

Madelynne Arden, Martin Lamb, Laura Kilby & Christopher Armitage

Contact:

Professor Maddy Arden
Behavioural Science Consortium
Centre for Behavioural Science and Applied Psychology
Sheffield Hallam University
Heart of the Campus
Collegiate Crescent
Sheffield
S10 2BQ
Telephone: 0114 225 5623
Email: behaviouralinsights@shu.ac.uk

Contents

1. Executive Summary

This report provides an analysis and evaluation of the current levels of physical activity across six priority areas in Doncaster that were previously identified as likely having low levels of physical activity. A face-to-face household survey was completed by 1,120 respondents using a questionnaire designed to (i) assess levels of physical activity in accordance with Sport England classifications, (ii) explore key issues around engagement in physical activity utilising the robust COM-B behavioural science approach (Michie et al., 2011).

The key findings of the study are as follows:

- Overall the levels of physical activity in all of the studied areas are low, with the majority of participants doing less than 30 minutes of activity per week. The number of adults meeting the Sport England physical activity guidelines in these communities is significantly lower than the reported averages for England, and for Doncaster as a whole.
- We identified that those who were more active reported having higher levels of capability, opportunity and motivation to engage in physical activity than those who were less active. We need to undertake further work to better understand these differing factors and how they might variously impact on activity levels for individuals within these communities.
- Our findings revealed some differences in ratings of capability, opportunity and motivation between the different communities. This might indicate that different communities have somewhat different barriers to physical activity. Further work should explore these factors in more detail.
- Our findings indicate a wide variation in the amount of physical activity that children and young people do outside of school. This suggests that large numbers of children in the target communities are unlikely to be meeting physical activity guidelines. This is a potential focus for future work.
- There were differences in physical activity levels by gender, age, ethnicity, education, and employment. Planned interventions to improve physical activity levels should consider how to address the needs of these different groups.
- Within this phase of our work, we included Carcroft and Stainforth as comparator areas. The survey findings suggest that inactivity is as prevalent here as it is in the other priority areas. Future work might seek to target these areas.
- Our findings suggest there are a number of participants that, although not currently participating in moderate-intensity activity, are conducting light-intensity activity. There are health benefits associated with light-intensity activity, and further promotion of these behaviours could lead to health benefits. People already participating in light-intensity activity could be potential targets for further interventions to promote moderate-intensity activity.

2. Introduction

Previous work using a MOSAIC analysis indicated that there are a number of communities in Doncaster that have high levels of inactivity and that these areas also reflected communities with a higher frequency of families and children and people with low incomes. The aims of this survey were to:

1. To assess whether the priority community locations identified in the MOSAIC analysis are the right ones to focus on in terms of targeting efforts to increase physical activity in local communities with the highest levels of inactivity.

2. To assess the barriers and facilitators for physical activity within those local communities.

Understanding the barriers and facilitators for physical activity requires that we consider the full range of factors within the system that might influence this behaviour. We have utilised the COM-B model (Michie et al., 2011) for this work which proposes that in order for physical activity to occur that someone must have the Opportunity (social and environmental assets), Capability (personal assets including physical skills, knowledge, and psychological resources) and Motivation (beliefs, attitudes and habits) and that a thorough behavioural analysis must consider barriers and facilitators across these domains. This model enables an assessment of common barriers/facilitators across the different groups i.e. whether capability, opportunity and motivation differ between people with different physical activity levels and between different communities. We will further explore these factors in the Phase 2 qualitative work.

3. Methodology

The methodology employed was a survey, conducted face-to-face, in the key identified communities in Doncaster. We worked with Qa Research, a Yorkshire based research company, who completed all of the field work in Doncaster.

Sample

Key postcodes for each priority area were identified and these were used to identify street names and areas in which the survey should be conducted. We recruited participants using a door-knocking approach.

Key quotas were identified in advance to ensure that the sample of households represented the population of residents in Doncaster as follows. Qa expected their colleagues running the survey to collect at least 12 responses per shift with the following quotas based on gender, age, and ethnicity:

Gender

- 5 x female (minimum)
- 5 x male (minimum)

Age

- 16-24 years - minimum of 1
- 25-44 years - minimum of 1
- 45-64 years - minimum of 1
- 65+ years - maximum of 3

Ethnicity

- Minimum of 1 person identifying as black or ethnic minority

Disability

- Minimum of 1 person with a declared disability

In order to select a sample of households that met the quotas, initial screening questions were asked at the beginning of the survey.

Measures

The survey questions drew on a number of established measures (see Appendix A for the full survey):

The short form of the Active Lives Survey was used to measure adult's weekly physical activity. This consisted of three questions, with three parts to each item depending on participant's responses to the first question (questions 9-11).

Sedentary behaviour was measured using questions from the International Physical Activity Questionnaire (IPAQ). Two questions (question 12) asked participants to report the amount of time they spent sitting on a typical working and non-working day (i.e. the weekend).

To evaluate key barriers and facilitators to physical activity we used a psychological model designed to assess people's capabilities, opportunities and motivations (the "COM-B model"). This helped us to develop the survey to find out about which different factors are barriers or facilitators to physical activity for different people. The COM-B model says that being physically active depends on:

1. Having the physical skills and stamina to be physically active (physical capability)
2. Knowing about the importance of physical activity, and being able to make decisions and plans to be physically active (psychological capability)
3. Having sufficient time and the necessary resources to be physically active (environmental opportunity)
4. Having enough support from other people to be physically active (social opportunity)
5. Wanting to be physically active (reflective motivation)
6. Having routines and habits to be physically active (automatic motivation)

COM-B factors were measured using a validated scale developed by Keyworth and colleagues (questions 15 to 20) and adapted to relate to physical activity. Before each question a specific statement relating to physical activity was included, asking participants to reflect on being able to complete 30 minutes of physical activity a day. This was based on UK recommendations (https://www.nhs.uk/live-well/exercise/) that if a person completes 30 minutes five times a week they will achieve the weekly physical activity guidelines. Participants were asked to respond to each item on an 11-point Likert scale (0 to 10) reflecting the degree to which they agreed or disagreed with each item.

Questions were created to measure active travel in the survey. These questions (question 13) were developed to ask participants about how they travel to their place of work or study. The questions allowed us to capture the amount of time a person spends actively travelling, as well as the percentage of a person's commute which is active.

If a household reported having a young person living there (aged 0-16 years), participants were asked five questions about each young person. (questions 7-8). Information was collected about age, their school, and how they commute to school. Participants were also asked about how much time each young person in the household spent being active outside of school.

Questions were also asked to capture information on the participant demographics including age, gender, employment status, ethnicity, disability, employment status, household income, and educational qualifications.

Procedure

To collect the required number of responses and to ensure that all surveys were completed as fully and accurately as possible, we worked with Qa research and we used a 'door-knocking' approach. The interviewers were made aware of the purpose of the research and were familiar with the survey being administered. Interviewers gained informed consent and

completed the survey with participants on iPads, allowing the data to be easily and securely stored. All interviewers were fully trained in the Market Research Society's code of conduct.

Ethics & GDPR

The study was approved by Sheffield Hallam University's ethics board prior to the study commencing. The ethics review also ensures that data collected and stored is GDPR compliant. Qa also have their own GDPR procedures in place, to ensure that all data collected was stored correctly and met the ethical standards set-out by the university.

4. Participants

In total 1,120 participants were recruited from eight locations within Doncaster. Six of these locations were identified as priority areas based on the findings of the MOSAIC conducted prior to the commencement of this project:

- Balby
- Balby Bridge
- Denaby
- Edlington
- Intake
- Wheatley

Two comparator areas were chosen in discussions with the team at Doncaster. These were:

- Carcroft
- Stainforth

Table 1 below displays the number of responses from each area; gender of participants, and whether a participant identified as being disabled. The intention was to recruit 130 participants from each of the six MOSAIC areas, however, despite efforts to achieve this only 90 participants could be recruited from Balby Bridge. The number of responses from neighbouring Balby was therefore increased to compensate for this lower number of respondents. There were slightly more female participants than male in most of the areas. Denaby had the highest proportion of participants with a disability while Stainforth had the lowest proportion.

Table 2 presents the number of responses from each area by age which indicates that the participants reflected a wide spread of ages.

Table 3 presents the ethnic groups identified by the participants of the survey. While the vast majority of participants were white British, the sample was more ethnically diverse than that for Doncaster as a whole (according to 2011 census data), with some variation by community. Participants recruited from Wheatley were more ethnically diverse than those from other areas with a large proportion of participants being Other White and Asian/Asian British.

Table 1. Respondent gender and disability by area

	Number of Responses	Gender		Disability
		Male	**Female**	**Disabled**
Balby	166	71 (42.8%)	95 (57.2%)	49 (29.5%)
Balby Bridge	90	43 (47.8%)	47 (52.2%)	25 (27.8%)
Denaby	130	69 (53.1%)	61 (46.9%)	62 (47.7%)
Edlington	131	59 (45.0%)	72 (51.7%)	40 (30.5%)
Intake	133	63 (48.2%)	70 (52.8%)	43(33.1%)
Wheatley	126	62 (49.2%)	64 (50/8%)	22 (17.5%)
Carcroft	172	83 (48.3%)	89 (51.7%)	33(19.2%)
Stainforth	172	76 (44.2%)	96 (55.8%)	27 (15.7%)
TOTAL	*1120*	*526*	*594*	*301*

Table 2. Respondent age categories by area

	16-24 years	**25-34 years**	**35-44 years**	**45-54 years**	**55-64 years**	**65-74 years**	**75+ years**
Balby	19 (11.4%)	34 (20.5%)	23 (13.9%)	29 (17.5%)	30 (18.1%)	16 (9.6%)	15 (9.0%)
Balby Bridge	8 (8.9%)	8 (8.9%)	25 (27.8%)	11 (12.2%)	12 (13.3%)	15 (16.7%)	11 (12.2%)
Denaby	22 (16.9%)	22 (16.9%)	9 (6.9%)	20 (15.4%)	26 (20.0%)	16 (12.3%)	15 (11.5%)
Edlington	16 (12.2%)	29 (22.1%)	17 (13.0%)	19 (14.5%)	21 (16.0%)	21 (16.0%)	8 (6.1%)
Intake	15 (11.3%)	20 (15.0%)	16 (12.0%)	27 (20.3%)	21 (15.8%)	19 (14.3%)	15 (11.3%)
Wheatley	21 (16.7%)	40 (31.7%)	21 (16.7%)	16 (12.7%)	7 (5.6%)	20 (15.9%)	1 (0.8%)
Carcroft	29 (16.9%)	24 (14.0%)	27 (15.7%)	27 (15.7%)	20 (11.6%)	35 (20.3%)	10 (5.8%)
Stainforth	19 (11.0%)	44 (25.6%)	35 (20.3%)	28 (16.3%)	20 (11.6%)	18 (10.5)	8 (4.7%)
TOTAL:	**149 (13.3%)**	**221 (19.7%)**	**173 (15.4%)**	**177 (15.8%)**	**157 (14.0%)**	**160 (14.3%)**	**83 (7.4%)**

Table 3. Respondent ethnic groups by area

	White British	Other White Background	Mixed	Asian or Asian British	Chinese	Black or Black British	Other Ethnic Group	Prefer Not to Say
	Number of Responses (%)	Number of Responses (%)	Number of Responses (%)	Number of Responses (%)	Number of Responses (%)	Number of Responses (%)	Number of Responses (%)	Number of Responses (%)
Balby	119 (71.7%)	30 (18.1%)	6 (3.6%)	7 (4.2%)	0 (0%)	3 (1.8%)	0 (0%)	1 (0.6%)
Balby Bridge	63 (70%)	15 (16.7%)	0 (0%)	2 (2.2%)	0 (0%)	7 (7.8%)	3 (3.3%)	0 (0%)
Denaby	119 (91.5%)	0 (0%)	0 (0%)	4 (3.1%)	0 (0%)	6 (4.6%)	1 (0.8%)	0 (0%)
Edlington	120 (91.6%)	7 (5.3%)	2 (1.5%)	0 (0%)	0 (0%)	2 (1.5%)	0 (0%)	0 (0%)
Intake	113 (85.0%)	9 (6.8%)	2 (1.5%)	5 (3.8%)	1 (0.8%)	2 (1.5%)	0 (0%)	1 (0.8%)
Wheatley	58 (46.0%)	39 (31.0%)	5 (4.0%)	20 (15.9%)	0 (0%)	2 (1.6%)	2 (1.6%)	0 (0%)
Carcroft	157 (91.3%)	9 (5.2%)	0 (0%)	4 (2.3%)	0 (0%)	2 (1.2%)	0 (0%)	0 (0%)
Stainforth	160 (93.0%)	1 (0.6%)	2 (1.2%)	2 (1.2%)	0 (0%)	2 (1.2%)	5 (2.9%)	0 (0%)
TOTAL	**909 (81.2%)**	**110 (9.8%)**	**17 (1.5%)**	**44 (3.9%)**	**1 (0.1%)**	**26 (2.3%)**	**11 (1.0%)**	**2 (0.2%)**
Doncaster's 2011 Census Data	**91.8%**	**3.4%**	**1.1%**	**2.1%**	**0.4%**	**0.8%**	**0.4%**	

Table 4. Respondent annual income by area

	£0-5,199	£5,200-10,399	£10,400-15,599	£15,600-20,799	£20,800-25,999	£26,000-31,199	£31,200-36,399	£36,400-51,999	£52,000+	Don't Know	Prefer not to say
	Number of Responses (%)	*Number of Responses (%)*	*Number of Responses (%)*	*Number of Responses (%)*	*Number of Responses (%)*	*Number of Responses (%)*	*Number of Responses (%)*	*Number of Responses (%)*	*Number of Responses (%)*	*Number of Responses (%)*	*Number of Responses (%)*
Balby	0 (0%)	30 (18.1%)	33 (19.9%)	28 (16.9%)	23 (13.9%)	9 (5.4%)	0 (0%)	0 (0%)	0 (0%)	1 (0.6%)	42 (25.3%)
Balby Bridge	2 (2.2%)	20 (22.2%)	15 (16.7%)	3 (3.3%)	2 (2.2%)	2 (2.2%)	0 (0%)	0 (0%)	0 (0%)	7 (7.8%)	39 (43.3%)
Denaby	7 (5.4%)	44 (33.8%)	16 (12.3%)	4 (3.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	46 (35.4%)	13 (10.0%)
Edlington	5 (3.8%)	21 (16.0%)	23 (17.6%)	11 (8.4%)	6 (4.6%)	3 (2.3%)	1 (0.8%)	3 (2.3%)	0 (0%)	25 (19.1%)	33 (25.2%)
Intake	9 (6.8%)	18 (13.5%)	16 (12.0%)	5 (3.8%)	11 (8.3%)	3 (2.3%)	3 (2.3%)	7 (5.3%)	10 (7.5%)	31 (23.3%)	20 (15.0%)
Wheatley	3 (2.4%)	12 (9.5%)	17 (13.5%)	17 (13.5%)	12 (9.5%)	7 (5.6%)	2 (1.6%)	0 (0%)	0 (0%)	7 (5.6%)	38.9%)
Carcroft	3 (1.7%)	24 (14.0%)	19 (11.0%)	22 (12.8%)	13 (7.6%)	13 (7.6%)	1 (0.6%)	0 (0%)	0 (0%)	11 (6.4%)	66 (38.4%)
Stainforth	0 (0%)	7 (4.1%)	19 (11.0%)	22 (12.8%)	14 (8.1%)	16 (9.3%)	17 (9.9%)	15 (8.7%)	4 (2.3%)	7 (5.6%)	34 (19.8%)
TOTAL	**29 (2.6%)**	**176 (15.7%)**	**158 (14.1%)**	**112 (10.0%)**	**81 (7.2%)**	**53 (4.7%)**	**24 (2.1%)**	**25 (2.2%)**	**14 (1.3%)**	**152 (13.6%)**	**296 (26.4%)**

Table 4 presents the reported annual income of respondents by area. There were a large number of participants who didn't know their income (13.6%) or preferred not to say (26.4%). Where income was reported there were variations by area such that Denaby reported lower levels of income (up to £20,799) and Stainforth reported high incomes (up to £52,000+).

Table 5. Number of respondents in each area who reported a physical or mental disability and whether this impacted daily activities

	Physical or Mental Disability			Does the disability substantially effect normal daily activities		
	Yes	*No*	*Prefer Not to Say*	*Yes*	*No*	*Prefer Not to Say*
Balby	49	117	0	39	10	0
Balby Bridge	25	65	0	24	1	0
Denaby	62	68	0	59	3	0
Edlington	40	91	0	35	4	1
Intake	43	88	1	29	13	1
Wheatley	22	104	0	22	0	0
Carcroft	33	139	0	28	5	0
Stainforth	27	144	1	25	2	0
TOTAL	**301**	**816**	**2**	**261**	**38**	**2**

Table 6. Number of respondents of in each area who reported being in employment or education

	Number of Responses	Employed or in education[1]	Unemployed
Balby	166	77 (46.4%)	89 (53.6%)
Balby Bridge	90	28 (31.1%)	62 (68.9%)
Denaby	130	27 (21.1%)	101 (78.9%)
Edlington	131	45 (34.4%)	86 (65.6%)
Intake	133	66 (50.0%)	66 (50.0%)
Wheatley	126	70 (55.6%)	56 (44.4%)
Carcroft	172	79 (45.9%)	93 (54.1%)
Stainforth	172	91 (52.9%)	81 (47.1%)
TOTAL	**1120**	**483 (43.2%)**	**634 (56.8%)**

Table 5 presents the proportion of participants in each area who reported a physical or mental disability and whether this disability affected normal daily activities. The proportion of

---

[1] Employment includes full- or part-time employment, and full- or part-time education

people reporting having a disability was large, but varied widely by area. In Denaby almost half of respondents reported having a disability. Most people who reported a disability also reported that it affected their normal daily activities.

Table 6 presents the data on participants in employment or education (full or part-time). Unemployment rates in the communities were quite variable with very high rates in Denaby and Balby Bridge, and lower rates in Wheatley and Stainforth.

5. Physical Activity - Adults

Throughout the following sections we have classified adults and young people as active, fairly active, or inactive. These classifications are based on the Sport England classifications used with the Active Lives Survey and reflect the amount of moderate intensity activity an adult completes each week and the amount of moderate intensity activity a young person completes each day. Moderate activity is defined as activity that raises your breathing rate. Where appropriate the current Sport England Active Lives results for England are presented to provide a comparison to the physical activity results collected in the present survey[2]. The activity categories are as follows (table 7):

Table 7. The Sport England physical activity guidelines for adults & children

	Adult (per week)	Child (each day)
Inactive	0-29 minutes	0-29 minutes
Fairly Active	30-149 minutes	30-59 minutes
Active	150+ minutes	60+ minutes

Moderate-Intensity Physical Activity

The physical activity data for adults was collected using the short version of the Active Lives Survey. The mean amount of moderate physical activity time completed by an adult each week was **221 minutes.** When classifying participants based on Sport England's physical activity guidelines it was found that **30.6%** of adults met the physical activity guidelines.

Table 8 presents how participants were classified in terms of the physical activity guidelines and a comparison to Sport England's results for Doncaster and England from May 2018. This indicates that the proportion of people classified as inactive in Doncaster as a whole is slightly more than for England, but that in the communities included in this survey the levels of inactivity were substantially higher. Similar to Sport England data for Doncaster and England, very few people fell into the fairly active category suggesting that people are predominantly active or not active.

---

[2] https://www.sporten172gland.org/media/13563/active-lives-adult-may-17-18-report.pdf

Table 8. Number of responses classified as Active, Fairly Active, & Inactive

Physical Activity Classification	Number of Responses	Percentage	Sport England Data for Doncaster	Sport England Data for England
Inactive	646	57.7%	29.1%	25.2%
Fairly Active	131	11.7%	11.9%	12.5%
Active	342	30.6%	59.0%	62.3%

Table 9 shows the number of responses by area and the mean physical activity time reported by participants in each area. The physical activity time is the total amount of time a participant reports being moderately active each week in minutes.[3]

Table 9. Mean weekly moderate PA times by area[4]

|	Count	Mean (minutes) per week
Balby	166	137.65
Balby Bridge	90	139.17
Denaby	130	177.41
Edlington	131	243.78
Intake	133	491.83
Wheatley	126	172.14
Carcroft	172	136.42
Stainforth	172	273.99
TOTAL	1120	221.25

Figure 1 shows the percentage of people meeting physical activity guidelines within each area of the survey. This figure presents the percentages rather than the number of responses. Appendix B (table B1) presents the percentages of participants in each category by area, which were used to produce this figure.

Balby Bridge have the lowest proportion of active and the highest proportion of inactive participants while Intake have the highest proportion of active and lowest proportion of inactive. Notably Carcroft, which did not feature very highly in the MOSAIC analysis of areas with low levels of physical activity, had levels of inactivity on a par with Balby, Denaby, and Edlington.

---

[3] Participants who reported completing over 16 hours of physical activity, 7 days a week were removed from the data as it felt that these times were unrealistic and skewed the results. One participant was removed due to this.

[4] Table B9 in Appendix B provides additional relevant data.
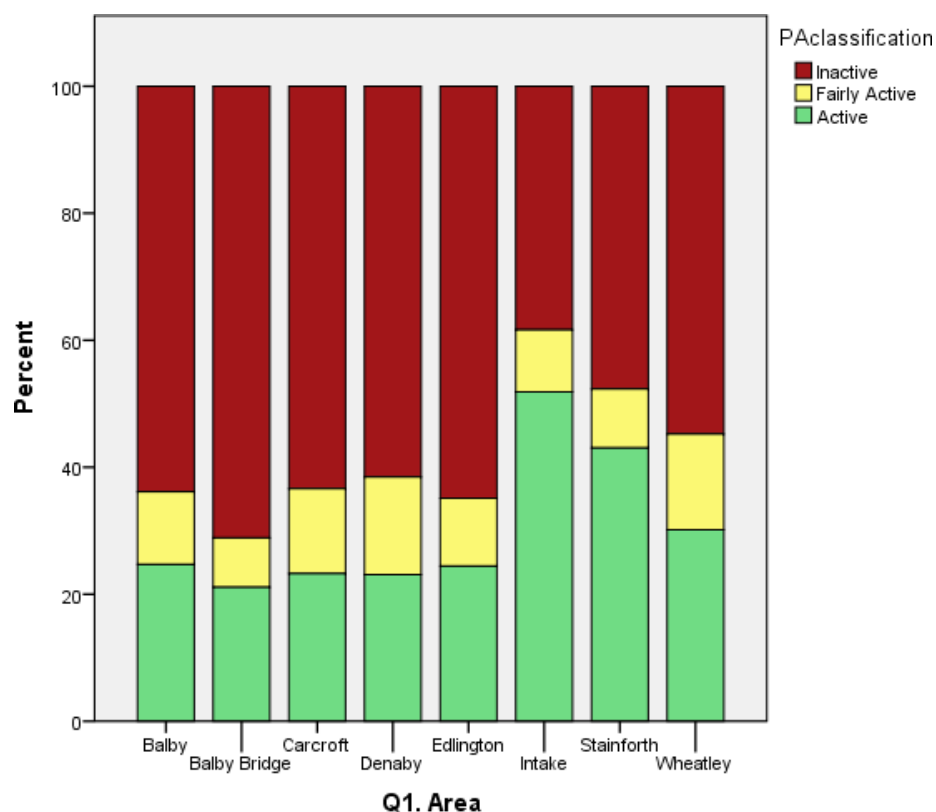
Types of Activity

The Active Lives Survey breaks down physical activity into weekly walking, cycling and sport activities. Very little time was reported cycling, around 30 minutes doing sport and a larger period of time walking (see table 10).

Table 10. The mean reported minutes for walking, cycling, and sport [6]

	Mean (minutes)
Walking (light & moderate intensity)	353.95
Cycling	9.88
Sport Activities	32.60

---

[5] Table B1 in Appendix B provides additional relevant data

[6] Table B10 in Appendix B provides additional relevant data.

Table 11. The mean reported minutes per week for walking, cycling, and sport reported by area[7]

	Mean minutes of light-intensity walking	Mean minutes of moderate-intensity walking	Mean minutes of cycling	Mean minutes of sport
Balby	298.86	112.56	5.45	19.64
Balby Bridge	286.94	118.06	12.44	8.67
Denaby	199.02	136.06	19.38	21.96
Edlington	396.64	222.25	10.08	11.45
Intake	574.33	400.46	16.86	74.51
Wheatley	336.15	93.57	2.70	75.87
Carcroft	381.58	107.41	8.02	20.99
Stainforth	343.02	237.21	7.27	29.51

The different types of activities varied quite considerable by area. Participants in Intake and Wheatley spent more time doing sport, Denaby and Intake spent more time cycling and Intake and Edlington spent more time walking.

Light-Intensity Walking

The Active Lives survey collects information relating to how much walking a person does a week, however this is only included in the overall physical activity calculation if the participant also reports that this activity gets them out of breath. Walking that does not result in being out of breath is classified as light walking. Research has begun to show the benefits of light-intensity activity on a person's health (Chastin et al, 2018).

In total 815 participants reported that they walked and 391 of these participants reported that this walking led to them getting out of breath, therefore it was moderate-intensity activity. Whereas 424 participants reported walking that did not lead to them getting out of breath. For the sample as a whole the mean amount of walking that people did was **354 minutes** a week. Focusing on just those people who did light walking, the mean amount of time they did it for was **488 minutes** a week.

---

[7] Table B11 in Appendix B provides additional relevant data.

Table 12. The mean number of minute's participants who reported doing light- intensity walking did each week[8]

Area	Light-Intensity Walking		
	Number of Responses	Mean minutes per week (those that report walking)	Mean Minutes per week (whole sample)
Balby	101	491.19	298.86
Balby Bridge	59	437.71	286.94
Denaby	77	336.01	199.02
Edlington	97	535.67	396.64
Intake	110	689.20	574.33
Wheatley	97	436.65	336.15
Carcroft	127	516.78	381.58
Stainforth	144	409.72	343.02

Sedentary Behaviour

Sedentary behaviour is typically defined as the amount of time a person spends sitting or lying during waking hours. Evidence has shown that sedentary behaviour can have negative health consequences independent of the amount of physical activity in which a person participates (Duvivier et al, 2017; Wilmot et al, 2012).

We used two questions from the IPAQ to assess the amount of time participants spend sitting on a working day and a non-working day (i.e. the weekend). The mean sedentary time reported on a **working day** was **256 minutes** each day. The mean reported sedentary time reported on a **non-working day** was **355 minutes** each day. Figure 2 below highlights how much of time a participant spent being sedentary during waking hours, which is typically 16 hours a day. [9]

Figure 2. The percentage of time spend sitting and being active each day

Working Day (n=460)

Sitting 26%
Active 73%
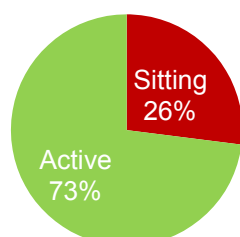
Non-Working Day (n=1033)

Sitting 37%
Active 64%

---
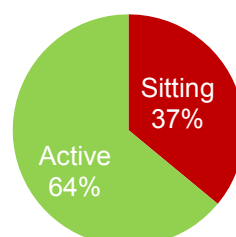
[8] Table B12 in Appendix B provides additional relevant data.
[9] Some participant's data (n=86) had to be removed due to them reporting unrealistically high daily sedentary time. Typically a person is awake for 16 hours, therefore any sedentary times that were over 16 hours (960 minutes) a day were treated as missing data and removed from this analysis.

Table 13. The mean number of minute's respondents reported being sedentary during a working and non-working day (by area) [10]

	Working Day	Non-Working Day
	Mean (minutes)	Mean (minutes)
Balby	294.26	343.31
Balby Bridge	256.67	437.83
Denaby	192.00	443.52
Edlington	242.56	364.43
Intake	279.43	336.19
Wheatley	323.85	348.33
Carcroft	239.80	373.58
Stainforth	180.51	273.70
TOTAL:	256.14	355.41

The amount of time spent sitting during the working day is likely to be partly related to the type of work that someone is doing. Differences by area may therefore reflect employment. Amount of time spent sitting during a non-working day is more easily comparable. This shows substantial variation by area with respondents in Stainforth being sedentary for the least amount of time and those in Denaby being the most sedentary.

Active Travel

Those participants who reported being employed or in education were asked about how they travelled to their place of work or study. In total 484 participants (43.3%) reported being employed or in education, with **203 (44.9%)** reporting to actively travel some or their entire journey to their place of work or study.

The mean time a participant spent actively travelling each day was **16 minutes** (standard deviation = 17.04 minutes), which accounted for **69%** of their commute to work.

---

[10] Table B13 in Appendix B provides additional relevant data.

Physical Activity by Ethnic Group

People from different ethnic groups showed some variation in the amount of moderate physical activity that they did, and the proportion who were classified as inactive, fairly active and active.

Table 14. The mean reported moderate physical activity times and physical activity classifications based on ethnicity [11]

	Mean Physical Activity Time (minutes)	Inactive *Number of Responses (%)*	Fairly Active *Number of Responses (%)*	Active *Number of Responses (%)*
White British	218.66	522 (57.5%)	102 (11.2%)	285 (31.3%)
Other White Background	298.45	76 (69.1%)	9 (8.2%)	25 (22.7%)
Mixed	158.53	8 (47.1%)	3 (17.6%)	6 (35.3%)
Asian or Asian Background	173.64	21 (47.7%)	10 (22.7%)	13 (29.5%)
Black or Black British	124.81	13 (50.0%)	6 (23.1%)	7 (26.9%)
Other Ethnic Group[12]	211.25	5 (41.66%)	0 (0%)	7 (58.33%)
Prefer Not to Say	45.00	1 (0.2%)	1 (0.8%)	0 (0%)

Although the numbers of participants in some of these groups is small these data indicate that there is some variation in activity based on ethnic group. Other White British participants reported higher levels of activity than White British. Other ethnic groups (Mixed, Asian, Black or Black British and Other) reported somewhat lower levels of inactivity than participants that identified as having a white ethnicity. Further research should explore these differences and consider them in the development of interventions.

Physical Activity by disability

Table. 15 shows the number of participants that declared having a disability within the sample, and their physical activity times and the number of participants in each physical activity classification. The table also shows of those that report having a disability, whether or not they declare the disability to impact upon their daily activities. As you can see from the table 27% of participants (301 households) reported having a physical or mental disability, of which 87% reported that their disability affected their daily activities.

The majority of respondents that reported having a disability which affected their daily activity were classified as inactive (78.5%), reporting an average of 57 minutes of moderate-intensity activity each week. 196 of the participants reported doing no physical activity each week.

---

[11] Table B14 in Appendix B provides additional relevant data.
[12] The Chinese participant (n=1) was included in Other Ethnic Group due to the small number of respondents.

Participants that reported having a disability, but that did not affect their daily activities, interestingly reported doing 413 minutes of moderate-intensity activity each week. This is higher than the reported activity times of respondents which reported not having a disability. This is possible a surprising finding and something to explore further within Phase 2.

Table 15. Average moderate-intensity physical activity times and physical activity classification by disability[13]

Do you have a physical or mental disability?	Number of Responses (%)	Does the disability substantially effect normal daily activities	Number of Responses (%)	Mean Physical Activity Time (minutes)	Inactive Number of Responses (%)	Fairly Active Number of Responses (%)	Active Number of Responses (%)
Yes	301 (26.9%)	Yes	261 (86.7%	56.93	205 (78.5%)	30 (11.5%)	26 (10.0%)
		No	38 (12.6%)	413.11	18 (47.4%)	5 (13.2%)	15 (39.5%)
		Prefer Not to Say	2 (0.7%)	465.0	1 (50%)	0 (0%)	1 (50%)
No	817 (72.9%)			263.88	421 (51.6%)	96 (11.8%)	300 (36.6%)
Prefer Not to Say	2 (0.2%)			380.0	1 (50%)	0 (0%)	1 (50%)

---

[13] Table B15 in Appendix B provides additional relevant data.

Physical Activity by type of employment

Table 16. Average moderate-intensity physical activity times and physical activity classification by employment[14]

Employment	Number of Responses	Mean Physical Activity Time (minutes)	Physical Activity Classification		
			Inactive	*Fairly Active*	*Active*
Working full-time (30+ hours)	333 (29.8%)	336.23	154 (46.2%)	40 (12.0%)	139 (41.7%)
Working part-time (<30 hours)	120 (10.6%)	351.09	52 (43.7%)	14 (11.18%)	54 (44.5%)
Unemployed - less than 12 months	56 (5%)	262.05	31 (55.4%)	6 (10.7%)	19 (33.9%)
Unemployed - >12 months	77 (6.9%)	126.10	46 (59.7%)	10 (13.0%)	21 (27.3%)
Not working - retired	247 (22.1%)	121.11	160 (64.8%)	35 (14.2%)	52 (21.1%)
Not working - looking after house/child	111 (9.9%)	247.44	73 (65.8%)	9 (8.1%)	29 (26.1%)
Not working - long term sick or disabled	133 (11.9%)	25.60	114 (85.7%)	12 (9.0%)	7 (5.3%)
Student - full time	25 (2.2%)	204.80	9 (36.0%)	4 (16.0%)	12 (48.0%)
Student - part-time	6 (0.5%)	90.00	3 (50.0%)	0 (0%)	3 (50.0%)
Other	10 (0.9%)	240.00	4 (40.0%)	1 (10.0%)	5 (50.0%)
Prefer not to say	2 (0.2%)	300.00	0 (0%)	0 (0%)	2 (100%)

Under half of the participants (43%) reported being employed (i.e. in employment or education). The highest levels of unemployment were in Denaby (79%) and Balby Bridge (69%) (see table 6). Participants in full-time (336 minutes) or part-time (351 minutes) employment reported completing the most moderate-intensity activity each week. The least active employment classifications were; not working due to long-term sick/disability (25.60 minutes), part-time students (90.0 minutes), and retired respondents (121.11 minutes).

---

[14] Table B16 in Appendix B provides additional relevant data.

Physical Activity by Education Level

Table 17. Average physical activity scores and physical activity classifications by education level[15]

Qualification	Number of Responses (%)	Mean Physical Activity Time (minutes)	Physical Activity Classification		
			Inactive	Fairly Active	Active
Degree level of above	45 (4.0%)	602.89	18 (40.0%)	4 (8.9%)	23 (51.1%)
Other Higher education	45 (4.0%)	266.67	18 (40.0%)	6 (13.3%)	21 (46.7%)
A-levels, NVQ & equivalent	136 (12.2%)	263.27	61 (44.9%)	14 (10.3%)	61 (44.9%)
GCSE/O-level A*-C or NVQ level 2	411 (36.6%)	242.41	226 (55.1%)	54 (13.2%)	131 (31.7%)
Qualification at level 1 or below	57 (5.1%)	163.42	34 (59.6%)	9 (15.8%)	14 (24.6%)
Any type	86 (7.7%)	295.17	44 (51.2%0	10 (11.6%)	32 (37.2%)
No qualification	317 (28.3%)	104.17	231 (72.9%)	31 (9.8%)	55 (17.4%)
Prefer not to say	23 (2.1%)	240.43	14 (60.9%)	3 (13.0%)	6 (26.1%)

Table 17 shows the highest qualifications of the respondents. The majority of participants had a GCSE or equivalent (36.6%) or no qualification (28.3%). The least active respondents reported either having no qualification (104 minutes) or qualification at level 1 or below (163.42 minutes). The most active respondents reported having a degree (603 minutes) or any type of qualification (295 minutes). These findings seem to indicate that higher levels of education are related to being more active, with low levels of education being the least active. However this should be interpreted with caution due to the lower numbers of respondents with higher levels of educational attainment.

---

[15] Table B17 in Appendix B provides additional relevant data.
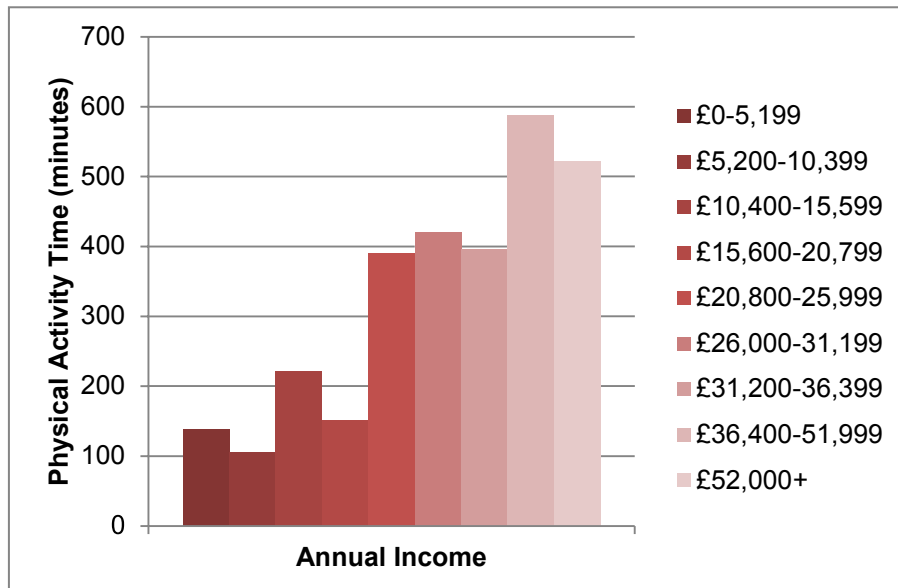
Physical activity by income

Table 18. Average activity times and the physical activity classifications of participants by income[16]

	Mean Physical Activity Times (minutes)	Inactive	Fairly Active	Active
		Number of Responses (%)	*Number of Responses (%)*	*Number of Responses (%)*
£0-5,199	138.62	21 (74.4%)	0 (0%)	8 (27.6%)
£5,200-10,399	105.86	118 (67.0%)	27 (15.3%)	31 (17.6%)
£10,400-15,599	220.51	104 (65.8%)	12 (7.6%)	42 (26.6%)
£15,600-20,799	151.07	70 (62.5%)	17 (15.2%)	25 (22.3%)
£20,800-25,999	389.38	36 (44.4%)	10 (12.3%)	35 (43.2%)
£26,000-31,199	419.83	20 (37.7%)	3 (5.7%)	30 (56.6%)
£31,200-36,399	395.83	7 (29.2%)	4 (16.7%)	13 (54.2%)
£36,400-51,999	588.20	10 (40.0%)	1 (4.0%)	14 (56.0%)
£52,000+	521.07	2 (14.3%)	1 (7.1%)	11 (78.6%)
Don't Know	282.93	81 (53.3%)	20 (13.2%)	51 (33.6%)
Prefer not to say	151.94	177 (59.8%)	36 (12.2%)	83 (28.0%)

Table 18 shows the physical activity levels and mean minutes of moderate physical activity broken down by household income. Physical activity times are higher for households that report earning over £20,800 a year. Average physical activity times appear to increase in relation to the income of households. This pattern is illustrated in Figure 3.

---

[16] Table B18n Appendix B provides additional relevant data.

6. Physical Activity - Young People

Young people's physical activity guidelines are different to that of adults, with a young person being classed as active if they achieve over 60 minutes of moderate intensity activity a day (420 minutes a week). Households were asked about the activity that their children do outside of school each week since they were unlikely to be able to answer with any accuracy about the amount of physical activity they did within the school day. In total there were 305 households with young people resident, with a mean of 1.85 young people per house (range of 1-6 young people per household).

As the questions focused upon the activity that they did outside of school, it may be that the young people in these households are more active than reported due to being active at school. The mean amount of physical activity a young person did outside of school is **160 minutes** per week.

Table 19 shows the mean physical activity times of young people in each area.

Area	Physical Activity	
	Number of Households with Young People	**Mean (minutes) per week**
Balby	46	78.91
Balby Bridge	12	30.83
Denaby	16	36.56
Edlington	41	162.11
Intake	29	206.98
Wheatley	38	84.37
Carcroft	45	173.89
Stainforth	78	261.38

These figures suggest significant variability in the amount of physical activity that children and young people are doing outside of school, and indicates that they are unlikely to be meeting guidelines.

This data is consistent with the findings of the Children and Young People's Active Lives survey findings (2018, Sport England) that showed that Doncaster school pupils were ranked in the bottom 10 for being the least active nationally for averaging less than 30 minute's activity per day. The overall Doncaster rate for young people's inactivity was 73.8% against a national average of 60.5%.

Similarly, the Pupil Lifestyle Survey conducted in Doncaster schools in 2015 and 2017, showed that in 2017 children were less active and taking part in less intense physical activity than they were in 2015.

These findings, taken together, emphases the need for work to understand and to address low physical activity levels in children and young people in these communities.

7. COM-B Results

The COM-B model aims to understand a person's **Capabilities** (physical and psychological), **Opportunities** (environmental and social), and **Motivation** (reflective and automatic) to be physically active. The questions asked about these factors in relation to being moderately physically active for 30 minutes a day. Understanding these factors will give us insight into the factors influencing physical activity and will help inform Phases 2 and 3 of the project.

In total there were six questions which were scored on an 11-point Likert scale of 0 (Strongly Disagree) to 10 (Strongly Agree). The mean responses for each question in relation to the

---

[17] Table B19 in Appendix B provides additional relevant data.

different aspects of the COM-B model are presented in Table 7 alongside the physical activity classification of adults. Questions 15-20 in the full survey ([Appendix A](#)) relate to the different aspects of COM-B.

Lower scores indicate that the participants disagreed that they had these factors. Higher scores indicate that participants felt that they had these factors.

The results indicate that participants classified as active reported higher levels of capability, opportunity, and motivational factors than those who were fairly active or inactive. Those who were fairly active also had higher ratings that those who were inactive. This suggests that interventions to increase capability, opportunity and motivation could result in high levels of physical activity.

Psychological capability scored quite highly across all three physical activity groups indicating that most participants, in all activity classifications, felt that they knew about the importance of physical activity and had the skills to make decisions and plans to be active. Although psychological capability was higher in the active group there was no difference between psychological capability between the inactive and fairly active groups (see appendix C).

The COM-B scores for each area will be explored further in the following section (see also Table C1).

Table 20. Average Capability, Opportunity and Motivation ratings by physical activity classification [18]

	Physical Activity Classification		
	Inactive	*Fairly Active*	*Active*
Ratings based on 0-10 scale	*Mean rating*	*Mean rating*	*Mean rating*
Having the physical skills and stamina to be physically active (*physical capability*)	5.40	6.68	8.71
Knowing about the importance of physical activity, and being able to make decisions and plans to be physically active (*psychological capability*)	7.81	8.18	9.22
Having sufficient time and the necessary resources to be physically active (*environmental opportunity*)	5.53	6.44	7.95
Having enough support from other people to be physically active (*social opportunity*)	5.45	6.50	7.94
Wanting to be physically active (*reflective motivation*)	4.52	6.12	8.24
Having routines and habits to be physically active (*automatic motivation*)	3.30	4.68	7.69

---

[18] Table B20 in Appendix B provides additional relevant data.

8. Results by Area

The following section shall present the findings of the survey for each area, starting with the priority areas.

Balby

Adult's Physical Activity

In Balby 166 responses were collected from different households. The mean amount of time adults reported being active each week was **138 minutes** which was the second lowest level across the eight communities. The physical activity classifications for Balby are presented below in figure 4.

Figure 4. The percentage of adults in each physical activity classification in Balby
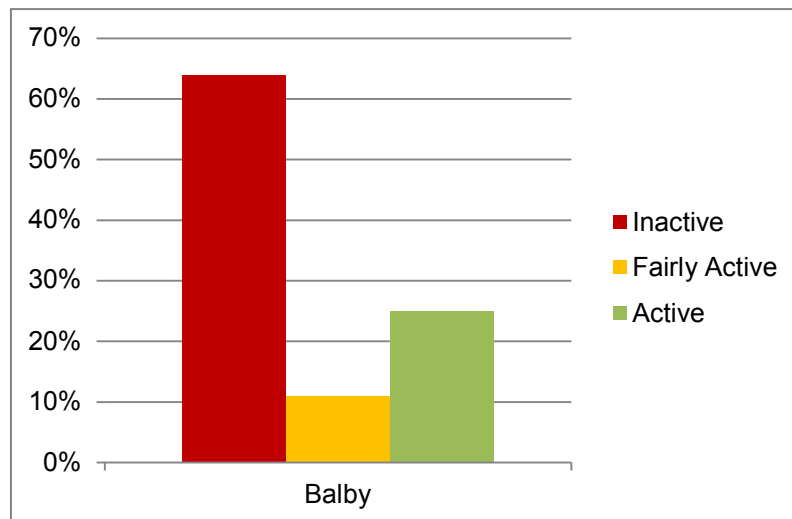
Sedentary Behaviour

In Balby the mean reported sitting time for participants was **294 minutes** on a working day. On a non-working day it was **343 minutes**, which was the 3rd lowest level of sedentary behaviour out of the eight communities.

Active Travel

In Balby 73 participants reported being employed or in education, 30 of those participants reported active travelling to their place of work or study. The mean time spent active travelling each day was **19 minutes** a day, which accounted for **82%** of their commute.

Young People's Physical Activity

In Balby 46 household's included young people and the mean reported physical activity time for them outside of school was **79 minutes** a week. This was the 3rd lowest amount of young people's activity over the eight communities

COM-B Results

Figure 5 presents the Capability, Opportunity, and Motivation scores for participants based on the physical activity classification they are in.

Figure 5. The COM scores for participants in each physical activity classification in Balby
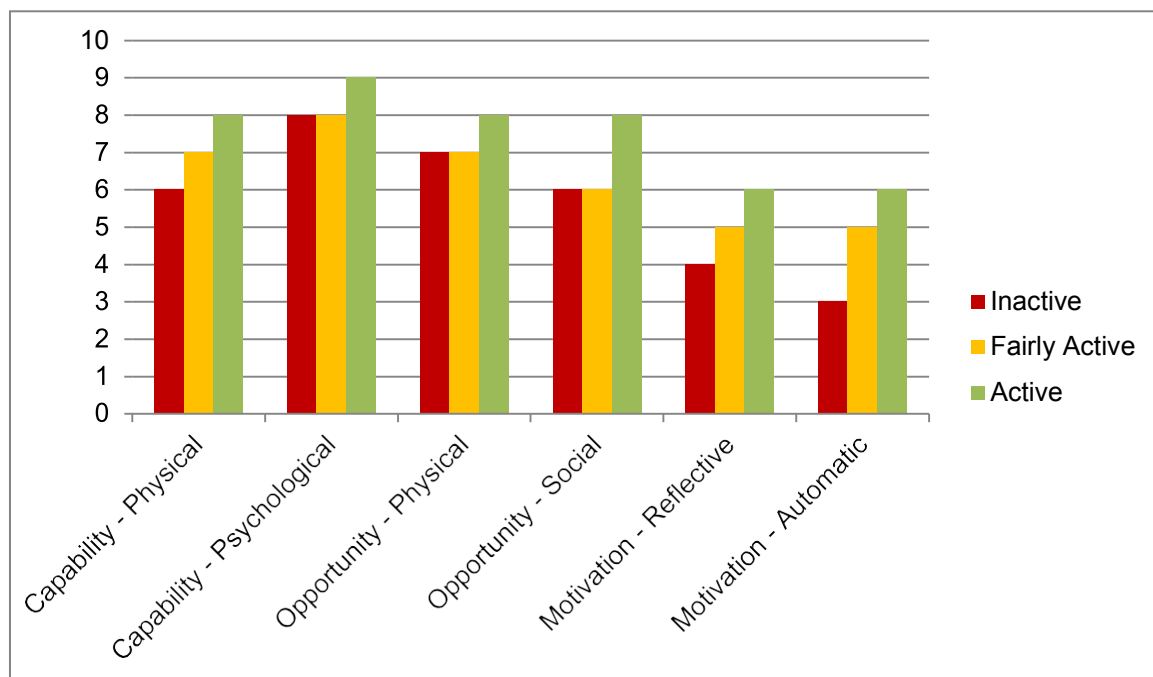
In Balby, as for the sample as a whole, participants who were active rated their capability, opportunity and motivation as being higher than those who were fairly active and inactive. Participants in Balby who were inactive gave particularly low ratings to automatic motivation (indicating that they did not have habits or routines for physical activity), and reflective motivation (indicating that they had lower intentions to be physical active). These might be particular areas to focus on in terms of future interventions

Balby Bridge

Adult's Physical Activity

In Balby Bridge 90 responses were collected from different households. The mean amount of time adults reported being active each week was **139 minutes** which was the 2nd lowest level across the eight communities. The physical activity classifications for Balby Bridge are presented below in figure 6.

Figure 6. The percentage of adults in each physical activity classification in Balby Bridge
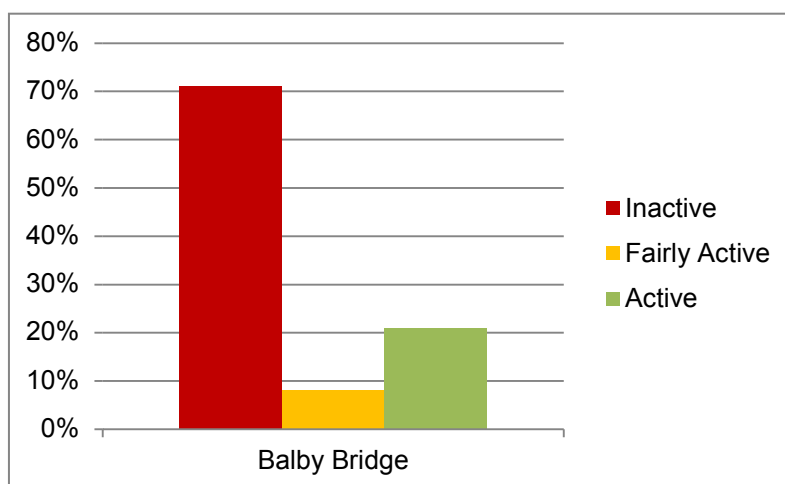
Sedentary Behaviour

In Balby Bridge the mean reported sitting time for participants was **257 minutes** on a working day. On a non-working day it was **438 minutes** which was the 2nd highest level of sedentary behaviour out of the eight communities.

Active Travel

In Balby Bridge 19 participants reported being employed or in education, 10 of those participants reported active travelling to their place of work or study. The mean time spent active travelling each day was **27 minutes** a day, which accounted for **90%** of their commute.

Young People's Physical Activity

In Balby Bridge 12 households reported having young people and the mean reported physical activity time outside of school was **31 minutes** a week. This was the lowest amount of young people's activity over the eight communities.

COM-B Results

Figure 7 presents the Capability, Opportunity, and Motivation scores for participants based on the physical activity classification they are in.

Figure 7. The COM scores for participants in each physical activity classification in Balby Bridge
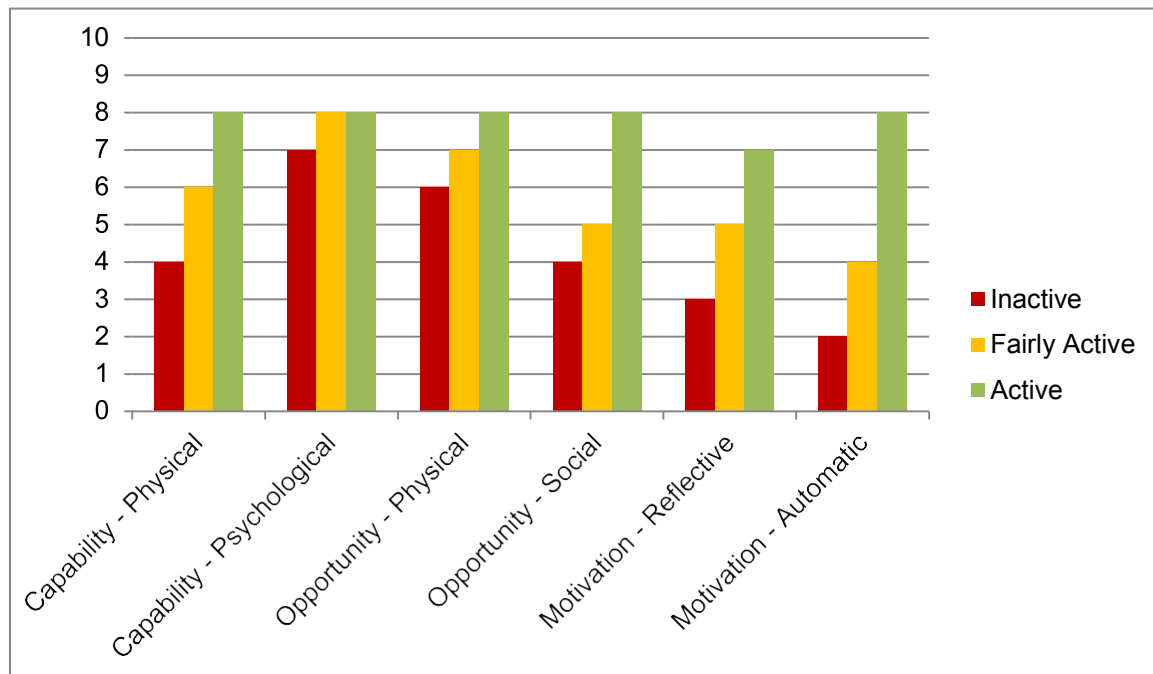

In Balby Bridge, as for the sample as a whole, participants who were active rated their capability, opportunity and motivation as being higher than those who were fairly active and inactive. Participants in Balby Bridge who were inactive gave particularly low ratings to automatic motivation (indicating that they did not have habits or routines for physical activity), reflective motivation (indicating that they had lower intentions to be physical active), physical capability (indicating that they perceived fewer skills and/or less stamina to be physically active), and social opportunity (indicating that they had less social support to be active). These might be particular areas to focus on in terms of future interventions.

Denaby

Adult's Physical Activity

In Denaby 130 responses were collected from different households. The mean amount of time adults reported being active each week was **177 minutes**, which was 4th highest out of the eight communities. The physical activity classifications for Denaby are presented below in figure 8.

Figure 8. The percentage of adults in each physical activity classification in Denaby
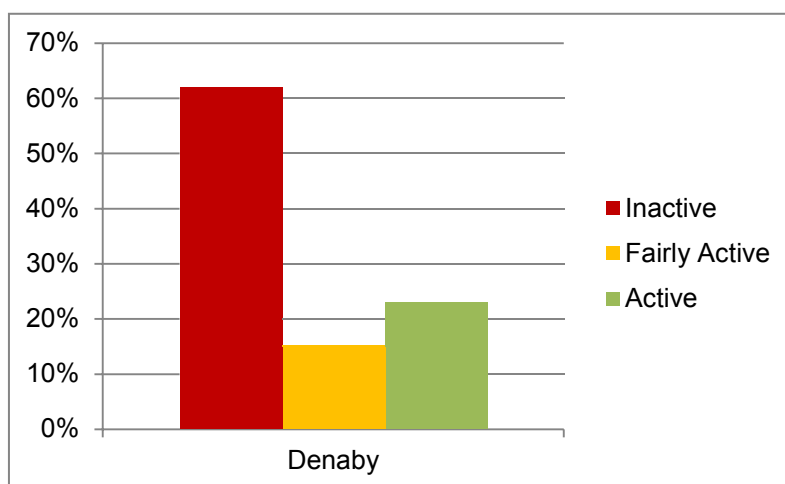
Sedentary Behaviour

In Denaby the mean reported sitting time for participants was **192 minutes** on a working day. On a non-working day it was **444 minutes** which was the highest level of sedentary behaviour out of the eight communities.

Active Travel

In Denaby 20 participants reported being employed or in education, 7 of those participants reported active travelling to their place of work or study. The mean time spent active travelling each day was **12 minutes** a day, which accounted for **54%** of their commute.

Young People's Physical Activity

In Denaby 16 households reported having young people and the mean reported physical activity time outside of school was **37 minutes** a week. This was the second lowest amount of young people's activity over the eight communities

COM-B Results

Figure 9 presents the Capability, Opportunity, and Motivation scores for participants based on the physical activity classification they are in.

*Figure 9. The COM scores for participants in each physical activity classification for Denaby*
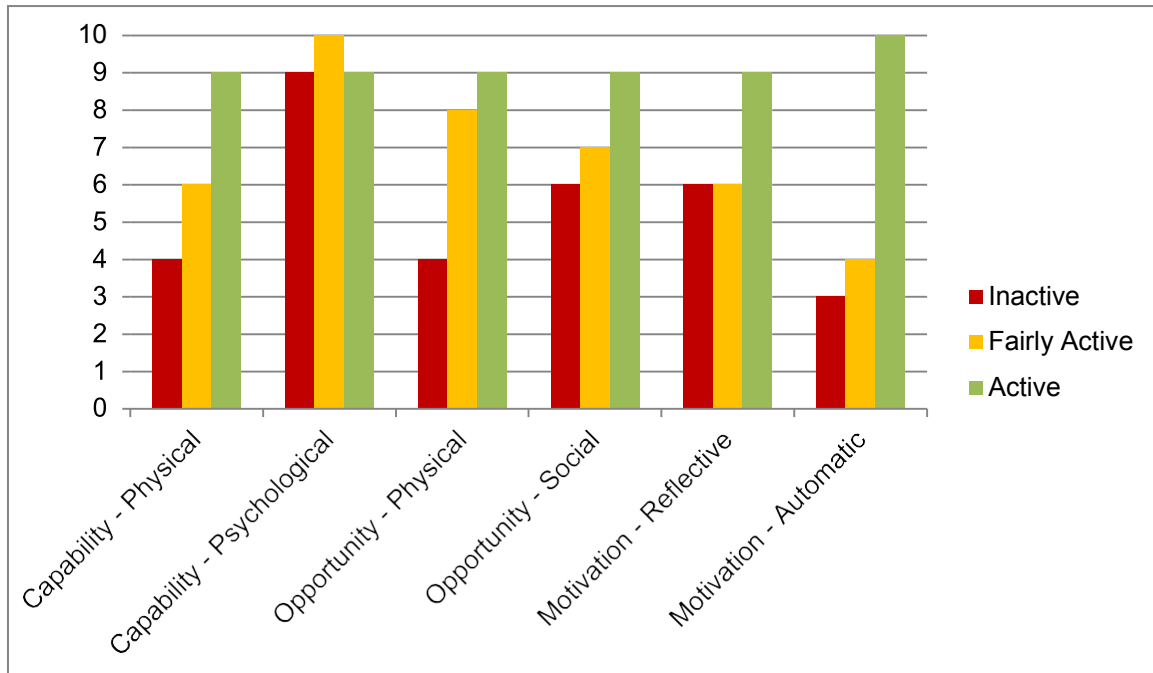
In Denaby, as for the sample as a whole, participants who were active generally rated their capability, opportunity and motivation as being higher than those who were fairly active and inactive. Participants in Denaby who were inactive gave particularly low ratings to automatic motivation (indicating that they did not have habits or routines for physical activity), physical opportunity (indicating that they perceived having less time and fewer resources to be active), and physical capability (indicating that they perceived fewer skills and/or less stamina to be physically active). These might be particular areas to focus on in terms of future interventions.

Edlington

Adult's Physical Activity

In Edlington 131 responses were collected from different households. The mean amount of time adults reported being active each week was **244 minutes** which was the third highest level out of the eight communities. The physical activity classifications for Edlington are presented below in Figure 10.

Figure 10. The percentage of adults in each physical activity classification in Edlington
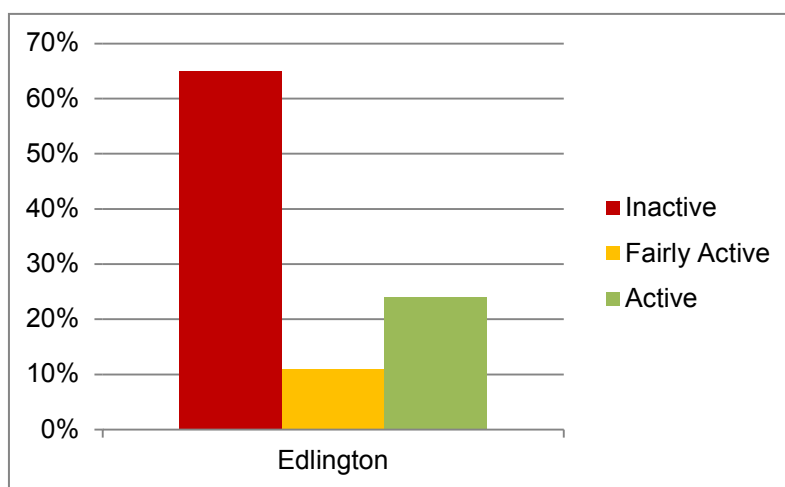
Sedentary Behaviour

In Edlington the mean reported sitting time for participants was **243 minutes** on a working day. On a non-working day it was **364 minutes** which was the 5th lowest level of sedentary behaviour out of the eight communities.

Active Travel

In Edlington 41 participants reported being employed or in education, 14 of those participants reported active travelling to their place of work or study. The mean time spent active travelling each day was **19 minutes** a day, which accounted for **85%** of their commute.

Young People's Physical Activity

In Edlington 41 households reported having young people and the mean reported physical activity time outside of school was **162 minutes** a week. This was the 4th lowest amount of young people's activity over the eight communities

COM-B Results

Figure 11 presents the Capability, Opportunity, and Motivation scores for participants based on the physical activity classification they are in.

Figure 11. The COM scores for participants in each physical activity classification for Edlington
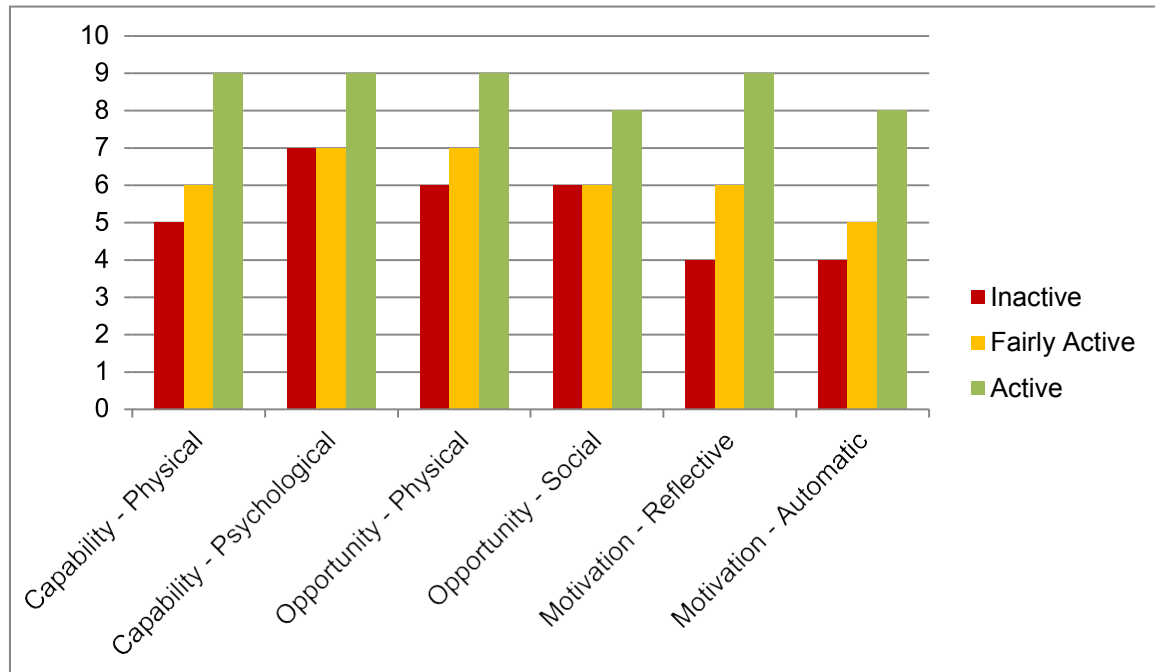

In Edlington, as for the sample as a whole, participants who were active rated their capability, opportunity and motivation as being higher than those who were fairly active and inactive. Participants in Edlington who were inactive gave particularly low ratings to automatic motivation (indicating that they did not have habits or routines for physical activity), reflective motivation (indicating that they had lower intentions to be physical active), and physical capability (indicating that they perceived fewer skills and/or less stamina to be physically active). These might be particular areas to focus on in terms of future interventions.

Intake

Adult's Physical Activity

In Intake 133 responses were collected from different households. The mean amount of time adults reported being active each week was **491 minutes** which was the highest level across the eight communities. The physical activity classifications for Intake are presented below in Figure 12.

Figure 12. The percentage of adults in each physical activity classification in Intake
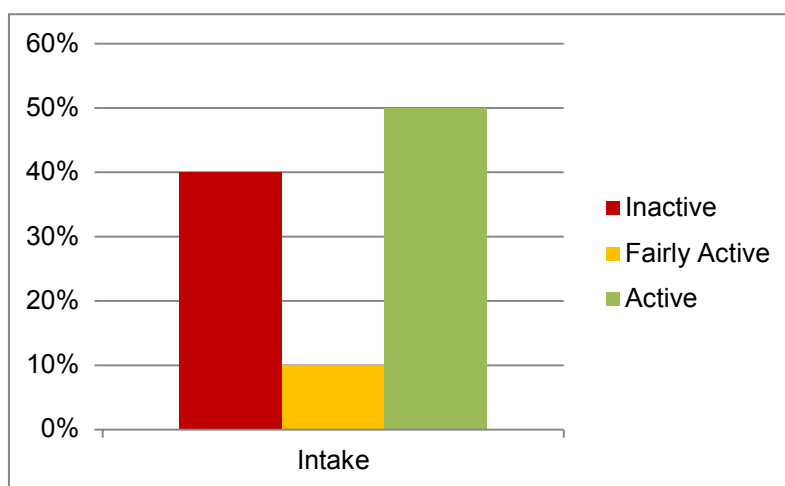
Sedentary Behaviour

In Intake the mean reported sitting time for participants was **279 minutes** on a working day. On a non-working day it was **336 minutes** which was the 2nd lowest level of sedentary behaviour out of the eight communities.

Active Travel

In Intake 62 participants reported being employed or in education, 21 of those participants reported active travelling to their place of work or study. The mean time spent active travelling each day was **17 minutes** a day, which accounted for **93%** of their commute.

Young People's Physical Activity

In Intake 29 households reported having young people and the mean reported physical activity time outside of school was **207 minutes** a week. This was the 2nd highest amount of young people's activity over the eight communities.

COM-B Results

Figure 13 presents the Capability, Opportunity, and Motivation scores for participants based on the physical activity classification they are in.
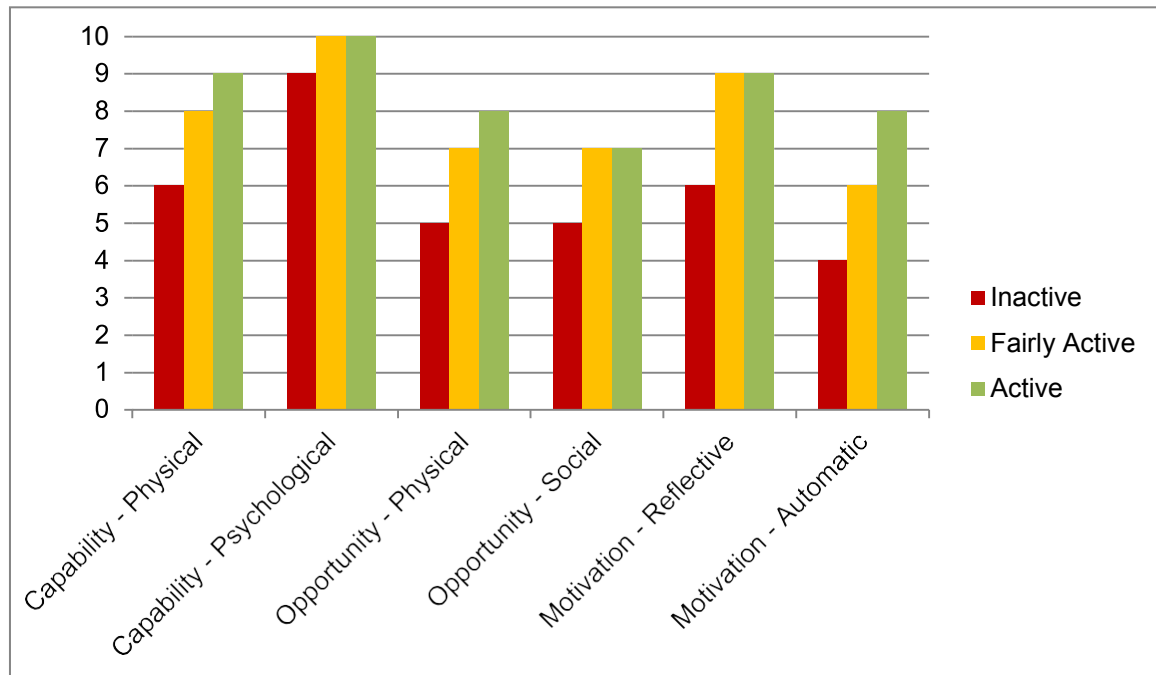
In Intake, as for the sample as a whole, participants who were active rated their capability, opportunity and motivation as being higher than those who were fairly active and inactive. Participants in Intake who were inactive gave particularly low ratings to automatic motivation (indicating that they did not have habits or routines for physical activity), physical opportunity (indicating that they perceived having less time and fewer resources to be active), and social opportunity (indicating that they had less social support to be active). These might be particular areas to focus on in terms of future interventions.

Wheatley

Adult's Physical Activity

In Wheatley 126 responses were collected from different households. The mean amount of time adults reported being active each week was **172 minutes** (standard deviation = 416.26 minutes) which was the 5th highest level out of the eight communities. The physical activity classifications for Wheatley are presented below in figure 14.

Figure 14. The percentage of adults in each physical activity classification in Wheatley
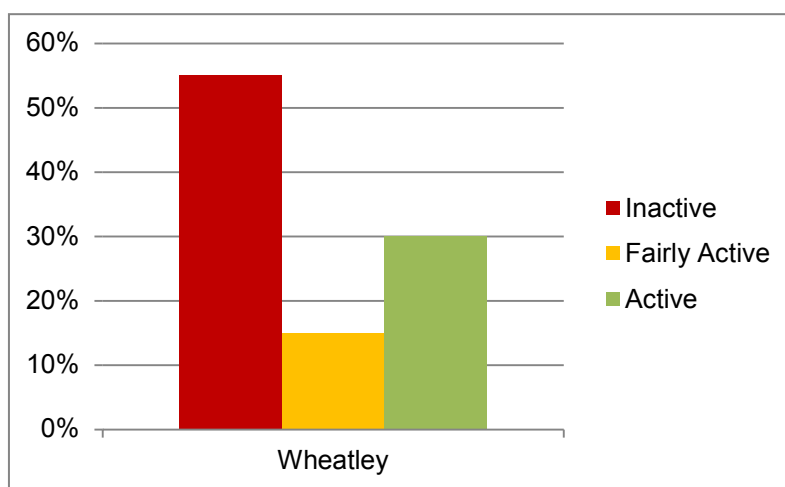
Sedentary Behaviour

In Wheatley the mean reported sitting time for participants was **324 minutes** on a working day. On a non-working day it was **348 minutes** which was the 4th lowest level of sedentary behaviour out of the eight communities.

Active Travel

In Wheatley 69 participants reported being employed or in education, 26 of those participants reported active travelling to their place of work or study. The mean time spent active travelling each day was **21 minutes** a day, which accounted for **71%** of their commute.

Young People's Physical Activity

In Wheatley 38 households reported having young people and the mean reported physical activity time outside of school was **84 minutes** a week. This was the 5^{5h} highest amount of young people's activity over the eight communities.

COM-B Results

Figure 15 presents the Capability, Opportunity, and Motivation scores for participants based on the physical activity classification they are in.

Figure 15. The COM scores for participants in each physical activity classification for Wheatley
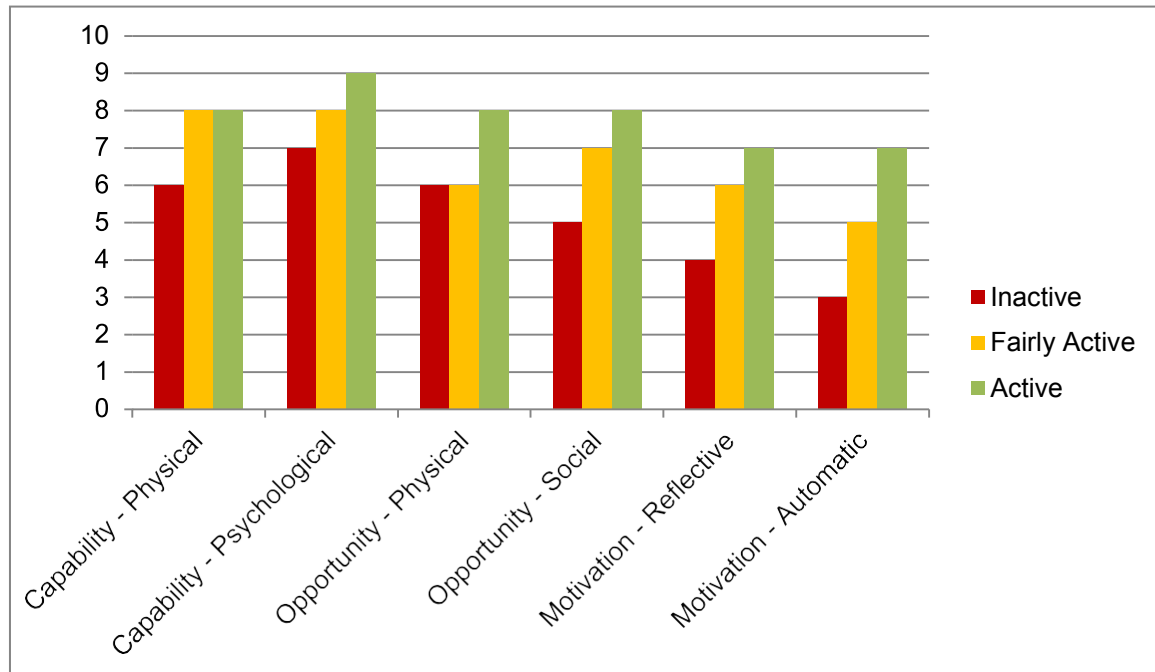

In Wheatley, as for the sample as a whole, participants who were active rated their capability, opportunity and motivation as being higher than those who were fairly active and inactive. Participants in Wheatley who were inactive gave particularly low ratings to automatic motivation (indicating that they did not have habits or routines for physical activity), reflective motivation (indicating that they had lower intentions to be physical active), and social opportunity (indicating that they had less social support to be active). These might be particular areas to focus on in terms of future interventions.

Carcroft

Adult's Physical Activity

In Carcroft 172 responses were collected from different households. The mean amount of time adults reported being active each week was **136 minutes** which was the lowest level of the eight communities. The physical activity classifications for Carcroft are presented below in Figure 16

Figure 16. The percentage of adults in each physical activity classification in Carcroft
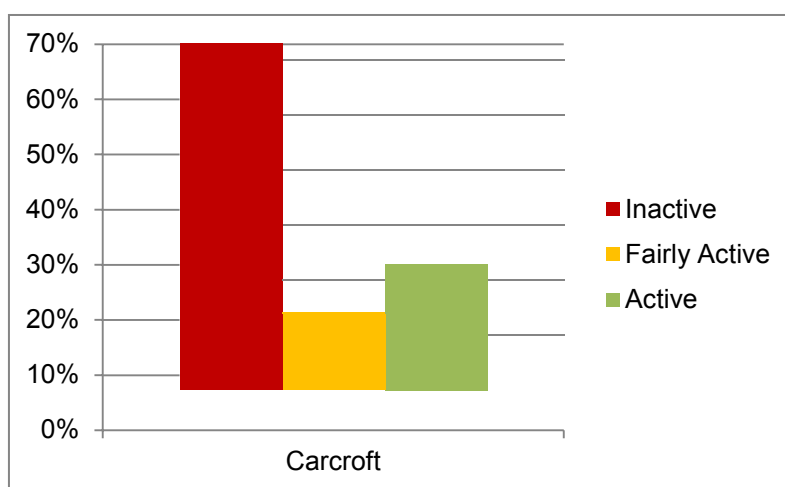
Sedentary Behaviour

In Carcroft the mean reported sitting time for participants was **240 minutes** on a working day. On a non-working day it was **374 minutes** which was the 3rd highest level of sedentary behaviour out of the eight communities.

Active Travel

In Carcroft 75 participants reported being employed or in education, 25 of those participants reported active travelling to their place of work or study. The mean time spent active travelling each day was **20 minutes** a day, which accounted for **67%** of their commute.

Young People's Physical Activity

In Carcroft 45 households reported having young people and the mean reported physical activity time outside of school was **174 minutes** a week. This was the 3rd highest amount of young people's activity over the eight communities, in contrast with adults activity which was the lowest over the eight communities.

COM-B Results

Figure 17 presents the Capability, Opportunity, and Motivation scores for participants based on the physical activity classification they are in.

Figure 17. The COM scores for participants in each physical activity classification for Carcroft
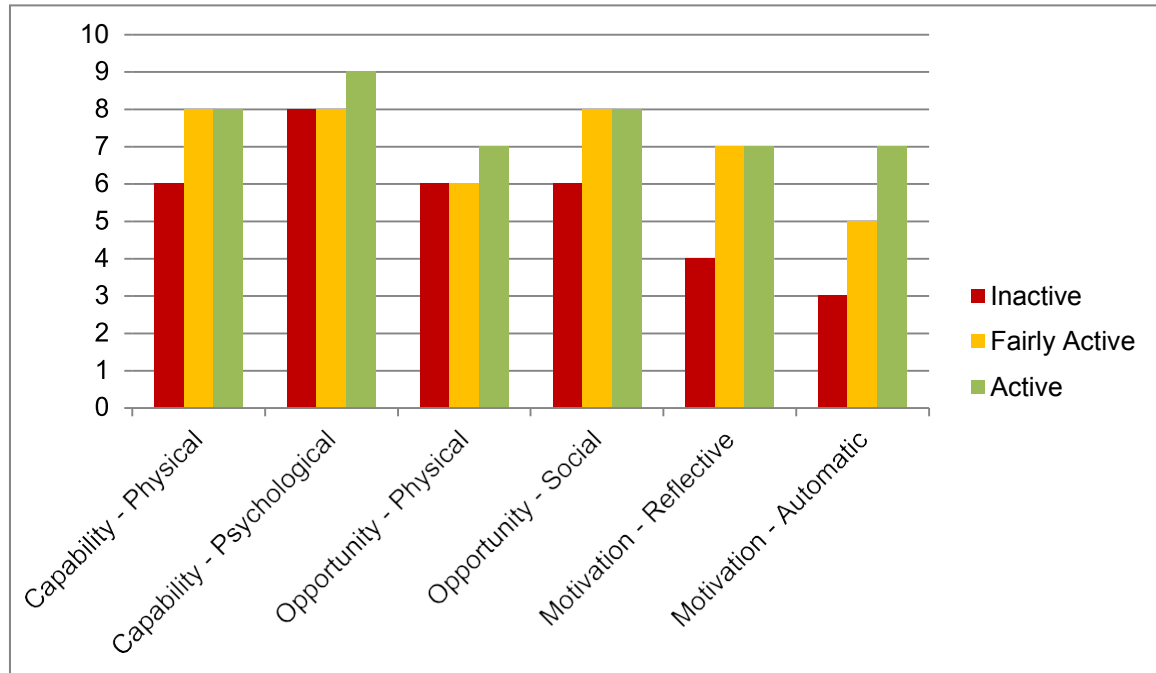
In Carcroft, as for the sample as a whole, participants who were active rated their capability, opportunity and motivation as being higher than those who were fairly active and inactive. Participants in Carcroft who were inactive gave particularly low ratings to automatic motivation (indicating that they did not have habits or routines for physical activity), and reflective motivation (indicating that they had lower intentions to be physical active). These might be particular areas to focus on in terms of future interventions.

Stainforth

Adult's Physical Activity

In Stainforth 172 responses were collected from different households. The mean amount of time adults reported being active each week was **274 minutes** (standard deviation = 523.00 minutes) which was the 2nd highest out of the eight communities. The physical activity classifications for Stainforth are presented below in figure 18.

Figure 18. The percentage of adults in each physical activity classification in Stainforth
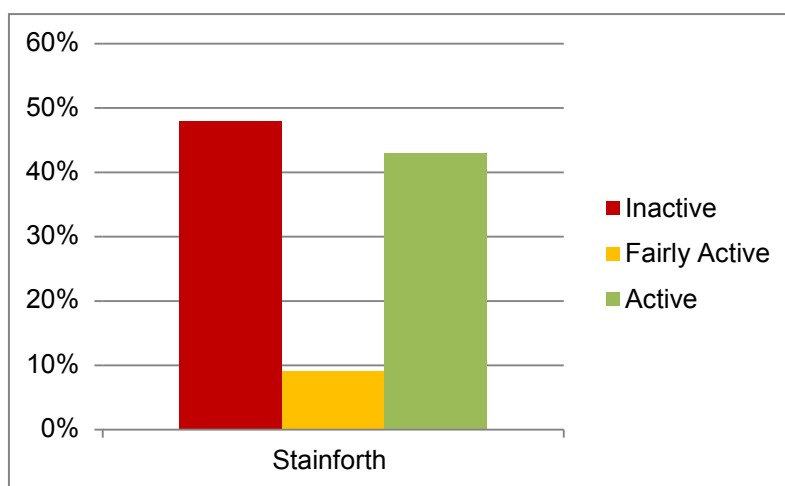
Sedentary Behaviour

In Stainforth the mean reported sitting time for participants was **181 minutes** on a working day. On a non-working day it was **274 minutes** which was the lowest level of sedentary behaviour out of the eight communities.

Active Travel

In Stainforth 90 participants reported being employed or in education, 56 of those participants reported active travelling to their place of work or study. The mean time spent active travelling each day was **9 minutes** a day, which accounted for **45%** of their commute.

Young People's Physical Activity

In Stainforth 78 households reported having young people and the mean reported physical activity time outside of school was **261 minutes** a week. This was the highest amount of young people's activity over the eight communities, consistent with the relatively high levels of activity in adults in Stainforth.

COM-B Results

Figure 19 presents the Capability, Opportunity, and Motivation scores for participants based on the physical activity classification they are in.

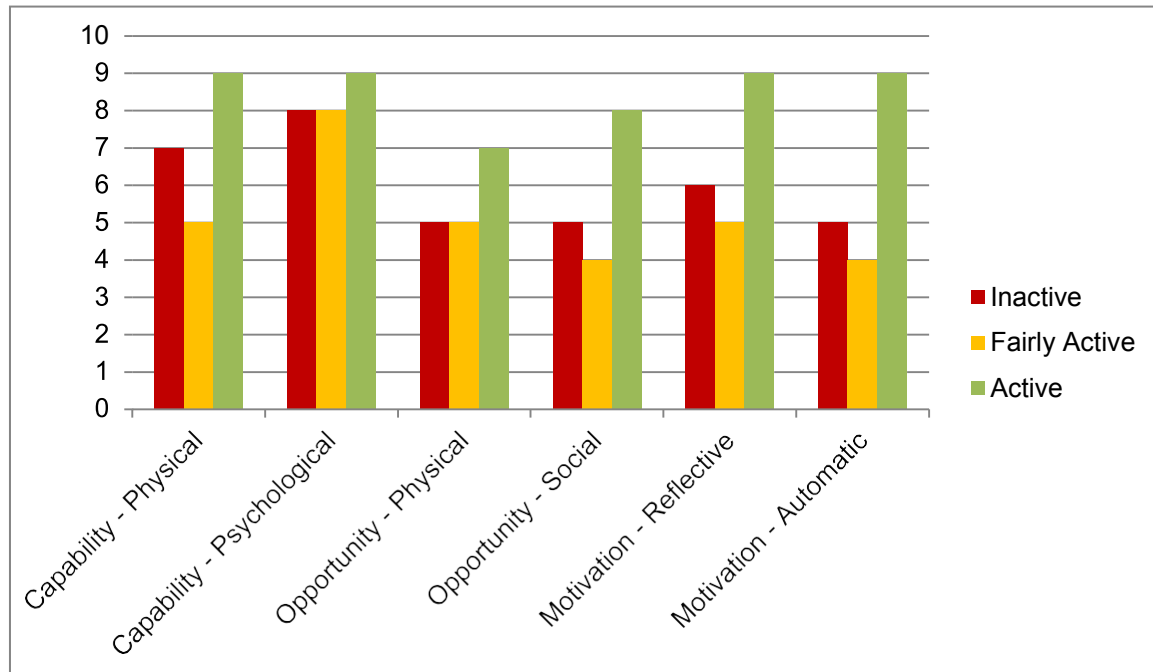*Figure 19. The COM scores for participants in each physical activity classification for Stainforth*

In Stainforth, while participants who were active rated their capability, opportunity and motivation as being higher than others there were fewer differences between those who were inactive and fairly active. In fact, contrary to expectation, and the findings in the other communities, some factors were rated higher by inactive participants than by fairly active participants. However, participants in Stainforth who were inactive gave quite low ratings to automatic motivation (indicating that they did not have habits or routines for physical activity), physical opportunity (indicating that they perceived having less time and fewer resources to be active), and social opportunity (indicating that they had less social support to be active). These might be particular areas to focus on in terms of future interventions.

9. Statistical Analysis Summary

Further statistical analysis was conducted to compare the differences between groups based on their levels of physical activity, allowing us to identify particular groups or areas which that may be inactive. The full details of the statistical analysis and results can be found in Appendix C.

Age

The mean age of participants who were classified as being active was significantly lower (mean = 42.2 years) than participants classified as fairly active (mean = 48.6 years) or inactive (mean = 48.5 years), but there were no significant differences in age between those who were inactive and fairly active.

Gender

There was a significant association between gender and activity level such that the proportion of women who were inactive was greater than that for men (61.4% compared to 53.4%).

Physical Activity & COM-B

Analysis was conducted to explore whether there differences in ratings of Capability (physical and psychological), Opportunity (physical and social), and Motivation (reflective and automatic), between people with different physical activity classifications. This showed that there were significant differences between COM ratings between physical activity levels for all 6 measures such that the lowest levels were in those who were categorised as inactive, moderate levels in fairly active and highest levels in active groups.

Figures 20-25 display the differences between the physical activity classifications based on the different COM-B questions. The statistical analysis is described and explained in appendix C.

Figure 20. Physical Opportunity (having sufficient time and to be physically active) mean ratings by activity classification
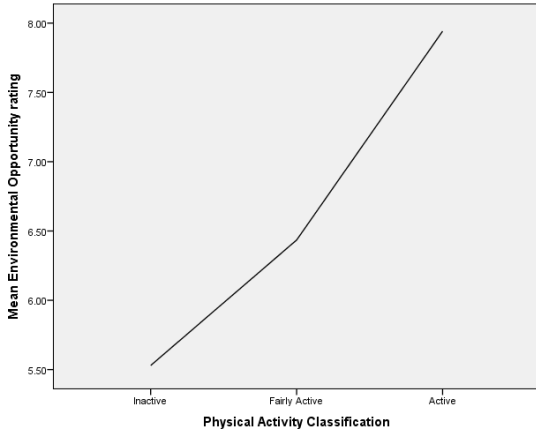

Figure 21. Social Opportunity (having support from other people to be physically active) mean ratings by activity classification
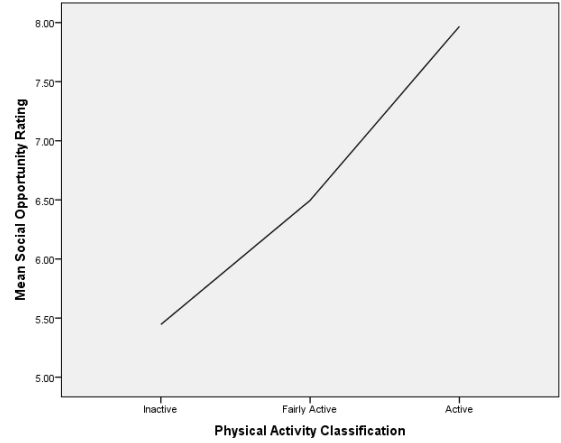

Figure 22. Reflective Motivation (having the intention to be physically active) mean ratings by activity classification
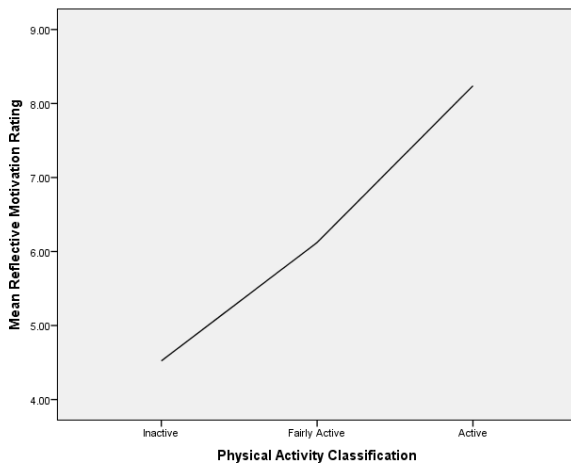

Figure 23. Automatic Motivation (being physically active without thinking about it) mean ratings by activity classification
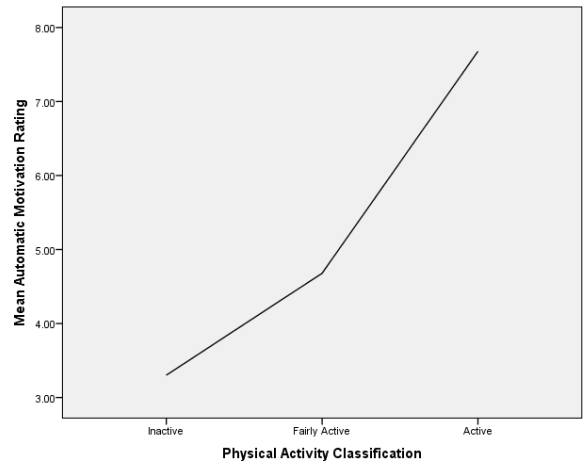
44

Figure 24. Physical Capability (having the skills and stamina to be physically active) means ratings by activity classification
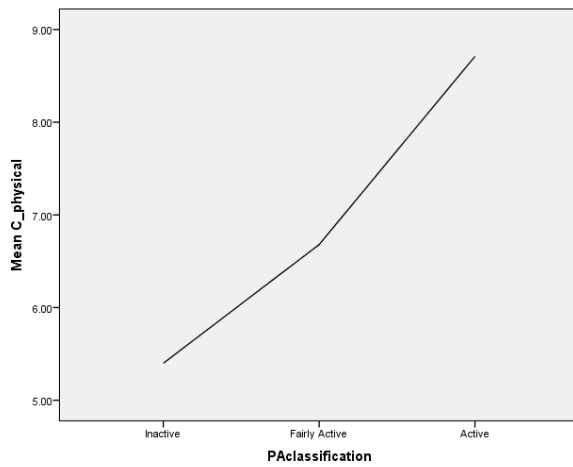
Figure 25. Psychological Capability: (knowing the importance of physical activity and decision-making) mean ratings by activity classification
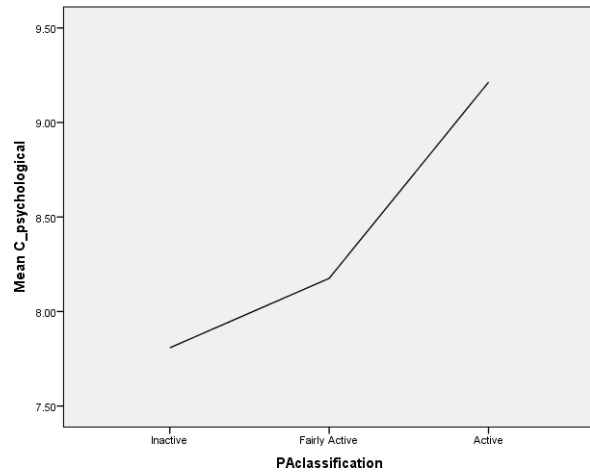
Each of these graphs (figures 20-25) shows the same overall pattern: Participants classified as inactive tend to rate their capability, opportunity and motivation as low, while those who were active rated them higher (with fairly active participants rating somewhere in between). This means that inactive participants have less motivation to be active i.e. they do not want to intend to be active and they have less routines and habits to be active. Inactive participants have (or at least perceive that they have) less capability to be active, i.e. they have fewer perceived skills, less stamina, less knowledge about the benefits of physical activity. Inactive participants perceive less opportunity to be active i.e. they have less social support and they perceive that they have less time and fewer resources (equipment and space) to be active.

The fact that all of the COM-B factors differed by active level is important because it suggests that, in the sample as a whole, inactivity is related to all of these factors. Potential solutions could therefore look to address these issues.

COM-B & Community Area

Analysis was conducted to explore whether there were differences in Capability (physical and psychological), Opportunity (environmental and social), and Motivation (reflective and automatic), between the different community areas (see Table B21 in Appendix B). The analysis showed that there were significant differences in COM-B ratings between areas and that there were some significant interactions in COM-B ratings between areas and physical activity classifications. These differences are explained in relation to graphical representations of these findings presented in figures 26-31. Appendix C reports this analysis in further detail.

Figure 26 illustrates differences in ratings of physical opportunity by area and physical activity category. Physical opportunity is having the time and resources (equipment and space) to be physically active. Analysis showed there were significant differences in physical opportunity by community area and a significant interaction between area and physical activity category i.e. there were different patterns of means across the physical activity classifications for different community areas.

Figure 26. Physical opportunity mean ratings by physical activity classification and community area

Figure 27 illustrates differences in ratings of social opportunity by area and physical activity category. Social opportunity is having sufficient support from other people to be physically active, Analysis showed there were significant differences in social opportunity by area.
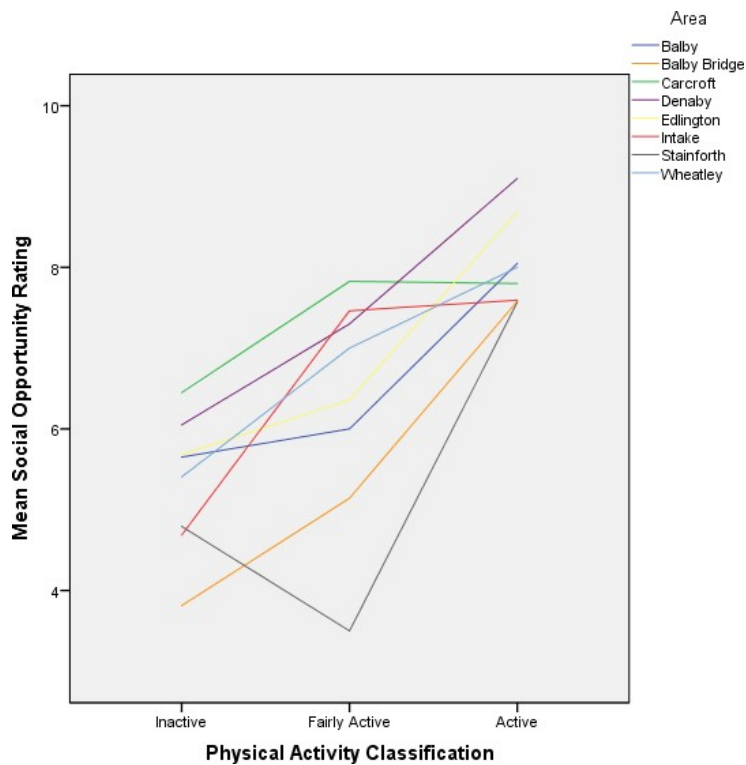
Figure 28 illustrates differences in ratings of reflective motivation by area and physical activity category. Reflective motivation is having the intention to or wanting to be physically active. Analysis showed there were significant differences in reflective opportunity by area.

Figure 29 illustrates differences in ratings of automatic motivation by area and physical activity category. Automatic motivation is being physically active without thinking about it (having a habit for physical activity). Analysis showed there were significant differences in automatic opportunity by area and a significant interaction between area and physical activity category i.e. there were different patterns of means across the physical activity classifications for different community areas.

Figure 28. Reflective motivation mean ratings by physical activity classification and community area
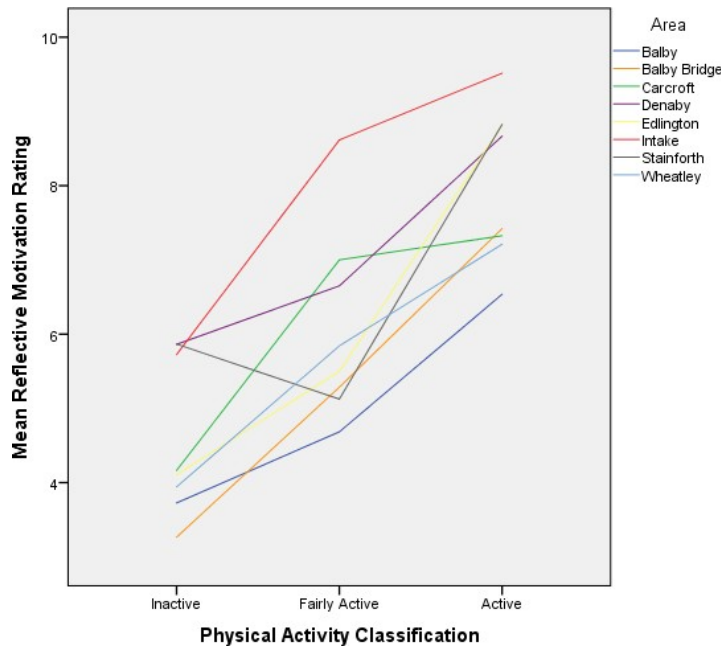
Figure 29. Automatic motivation ratings by physical activity classification and community area
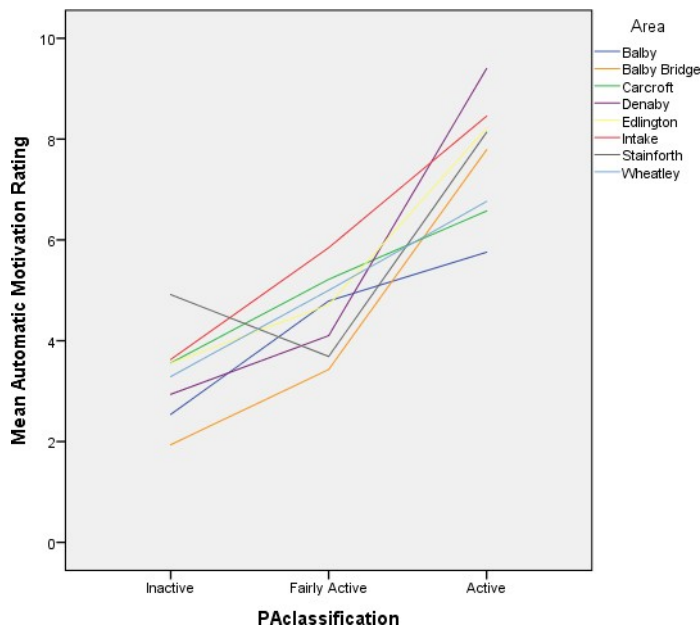
Figure 30 illustrates differences in ratings of physical capability by area and physical activity category. Physical capability is the skills and stamina that someone has to be physically active. Analysis showed that there were not significant differences in physical capability by area but there was a significant interaction between area and physical activity category i.e.

there were different patterns of means across the physical activity classifications for different community areas.

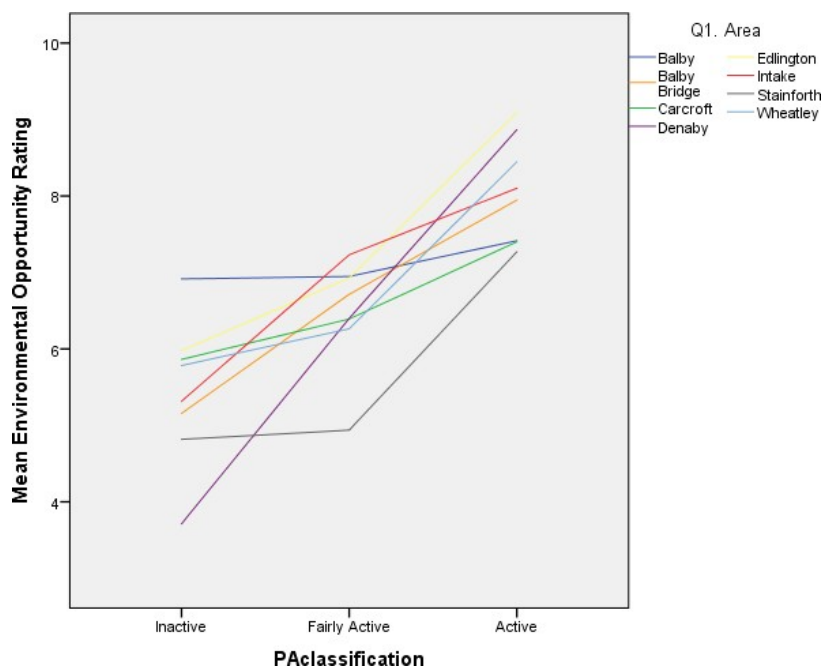*Figure 30. Physical capability mean ratings by physical classifications and community area*
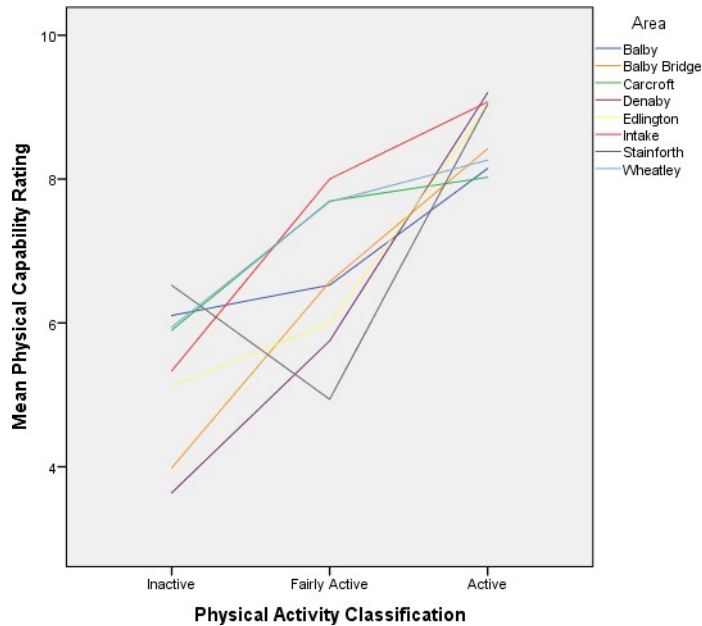
Figure 31 illustrates differences in ratings of psychological capability by area and physical activity category. Psychological capability is knowledge about the benefits of physical activity and planning and decision making ability. Analysis showed there were significant differences in psychological capability by area.

Figure 31. Psychological capability mean ratings by physical activity classification and community area
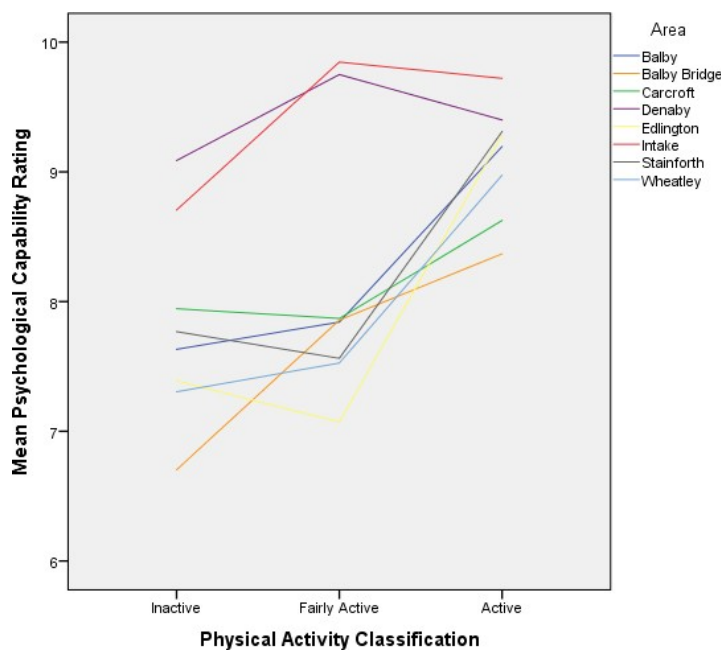
COM-B as a predictor of physical activity

Additional statistical analysis was conducted to further examine the relationship between the 6 COM-B factors and the amount of physical activity that participants reported (minutes). Linear regression analysis revealed that the key predictors of minutes of physical activity were automatic motivation, physical capability, and psychological capability. Although this analysis is based on cross-sectional data and we are not able to determine cause and effect, this suggests that interventions that increase automatic motivation, physical capability and psychological capability may be particularly effective in promoting increases in physical activity. Such interventions could seek to:

- increase knowledge about the benefits of physical activity
- promote skills to make decisions and plan physical activity
- increase confidence that people have the skills and stamina to be physically active
- promote habit formation by facilitating consistent routines for physical activity.

11. Next Steps

This survey clearly identified some communities within Doncaster with very high levels of inactivity and highlights key factors that might influence those levels of activity. More in-depth work is now required within those communities to explore these issues further (Phase 2) and to identify potential changes within those communities that could address inactivity (Phase 3).

Phase 2 involves collecting detailed qualitative data from participants of 3 of the target communities. The emphasis of phase 2 is to gain greater understanding of peoples' opportunities, capabilities and motivation to engage in physical activity. Gaining this deeper understanding of the influences upon physical inactivity within the communities will allow us to better understand differing barriers and facilitators. This can then support future interventions to be tailored to the needs of the communities.

To conduct the interviews we have trained Community Explorers in interview techniques, so that they have the skills and confidence to go and interview fellow community members. The Community Explorers are currently working or volunteering within community organisations in these areas, meaning they already understand their communities and will allow them to connect better with their participants. The intention is that the Community Explorers will also continue to engage with their communities and to promote physical activity, potentially leaving a lasting change.

Following on from the results of Phase 2, co-design workshops will be conducted within different communities to discuss how physical activity could be promoted within their community, and to design potential physical activity interventions. Again these sessions will be driven by the members of the communities and will involve some of the Community Explorers, as well as other community members.

12. References

Booth, M.L. (2000). Assessment of Physical Activity: An International Perspective. Research Quarterly for Exercise and Sport, 71 (2): s114-200 http://www.sdp.univ.fvg.it/sites/default/files/IPAQ_English_self-admin_long.pdf

Buckley, J. P., Hedge, A., Yates, T., Copeland, R. J., Loosemore, M., Hamer, M., . . . Dunstan, D. W. (2015). The sedentary office: An expert statement on the growing case for change towards better health and productivity. *British Journal of Sports Medicine, 49*(21), 1357. doi:10.1136/bjsports-2015-094618

Chastin, S. F. M., De Craemer, M., De Cocker, K., Powell, L., Van Cauwenberg, J., Dall, P., . . . Stamatakis, E. (2018). *How does light-intensity physical activity associate with adult cardiometabolic health and mortality? systematic review with meta-analysis of experimental and observational studies* BMJ Publishing Group Ltd and British Association of Sport and Exercise Medicine. doi:10.1136/bjsports-2017-097563

Duvivier, B., Schaper, N., Hesselink, M., Kan, L., Stienen, N., Winkens, B., . . . Savelberg, H. (2017). Breaking sitting with light activities vs structured exercise: A randomised crossover study demonstrating benefits for glycaemic control and insulin sensitivity in type 2 diabetes. *Diabetologia, 60*(3), 490-498. doi:10.1007/s00125-016-4161-7

Keyworth, C., Epton, T., Goldthorpe, J., Calam, R., & Armitage, C. J. (unpublished manuscript). Reliability, validity, and acceptability of a brief measure of capabilities, opportunities, and motivations.

Michie, S., van Stralen, M.,M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science, 6*, 42-42. doi:10.1186/1748-5908-6-42

Sport England (2018). *Active Lives Survey (short form).* Retrieved from https://www.sportengland.org/media/13169/short-active-lives-recommendation.pdf

Wilmot, E. G., Edwardson, C. L., Achana, F. A., Davies, M. J., Gorely, T., Gray, L. J., . . . Biddle, S. J. H. (2012). Sedentary time in adults and the association with diabetes, cardiovascular disease and death: Systematic review and meta-analysis. *Diabetologia, 55*(11), 2895-2905. doi:10.1007/s00125-012-2677-z

Appendix B: Additional tables

Please note that the table number relate to the table numbers in the main report, so for example, Table B9 provides additional detail for Table 9 in the main text (see p. 13)

Table B1: The percentage of participants in each physical activity classification based on area (presented in Figure 1).

Area	Physical Activity Classification		
	Inactive	*Fairly Active*	*Active*
Balby	106 (64%)	19 (11%)	41 (25%)
Balby Bridge	64 (71%)	7 (8%)	19 (21%)
Denaby	80 (62%)	20 (15%)	30 (23%)
Edlington	85 (65%)	14 (11%)	32 (24%)
Intake	50 (40%)	12 (10%)	61 (50%)
Wheatley	69 (55%)	19 (15%)	38 (30%)
Carcroft	109 (63%)	23 (14%)	40 (23%)
Stainforth	82 (48%)	16 (9%)	74 (43%)

Table B9. Mean weekly moderate physical activity times by area

	Count	Mean (minutes)	Range	Standard Deviation
Balby	166	137.65	0-5220	459.81
Balby Bridge	90	139.17	0-3920	461.06
Denaby	130	177.41	0-3360	479.93
Edlington	131	243.78	0-5040	667.15
Intake	133	491.83	0-6005	970.49
Wheatley	126	172.14	0-2760	416.26
Carcroft	172	136.42	0-2400	317.38
Stainforth	172	273.99	0-3360	523.00
TOTAL	1120	221.25	0-6005	570.74

Table B10. The mean reported minutes for walking, cycling, and sport

	Mean (minutes)	Range	Standard Deviation
Walking (light & moderate intensity)	353.95	0-5915	677.46
Cycling	9.88	0-2100	85.17
Sport Activities	32.60	0-2400	131.41

Table B11. The mean reported minutes per week for walking, cycling, and sport reported by area

	Light-intensity walking			Moderate-intensity walking			Cycling			Sport		
	Mean (minutes)	Range	Standard Deviation	Mean (minutes)	Range	Standard Deviation	Mean (minutes)	Range	Standard Deviation	Mean (minutes)	Range	Standard Deviation
Balby	298.86	0-5040	638.45	112.56	0-5040	433.02	5.45	0-360	36.02	19.64	0-480	66.26
Balby Bridge	286.94	0-3920	485.34	118.06	0-3920	456.49	12.44	0-420	58.55	8.67	0-240	40.23
Denaby	199.02	0-3360	414.91	136.06	0-3360	388.27	19.38	0-2100	187.55	21.96	0-400	79.17
Edlington	396.64	0-5040	709.36	222.25	0-5040	661.56	10.08	0-1260	110.17	11.45	0-280	44.01
Intake	574.33	0-5915	1000.18	400.46	0-5915	924.40	16.86	0-420	66.06	74.51	0-2460	226.75
Wheatley	336.15	0-3360	637.74	93.57	0-2520	329.70	2.70	0-120	14.61	75.87	0-2400	248.15
Carcroft	381.58	0-4320	744.00	107.41	0-2400	301.45	8.02	0-600	57.11	20.99	0-360	64.42
Stainforth	343.02	0-3360	539.93	237.21	0-3360	504.69	7.27	0-360	41.14	29.51	0-600	96.43

Table B12. The mean number of minute's participants who reported doing light- intensity walking did each week

Area	Light-Intensity Walking						
	Number of Responses	*Mean minutes per week (those that report walking)*	Range	Standard Deviation	*Mean Minutes per week (whole sample)*	Range	Standard Deviation
Balby	101	491.19	15-5040	759.71	298.86	0-5040	638.45
Balby Bridge	59	437.71	20-3920	542.52	286.94	0-3920	485.34
Denaby	77	336.01	10-3360	495.55	199.02	0-3360	414.91
Edlington	97	535.67	10-5040	778.57	396.64	0-5040	709.36
Intake	110	689.20	15-5915	1059.42	574.33	0-5915	1000.18
Wheatley	97	436.65	10-3360	696.59	336.15	0-3360	637.74
Carcroft	127	516.78	15-4320	825.11	381.58	0-4320	744.00
Stainforth	144	409.72	10-3360	566.65	343.02	0-3360	539.93

Table B13. The mean number of minute's participants reported being sedentary during a working and non-working day (by area)

	Working Day			Non-Working Day		
	Mean (minutes)	Range	Standard Deviation	Mean (minutes)	Range	Standard Deviation
Balby	294.26	0-720	192.62	343.31	0-720	171.32
Balby Bridge	256.67	0-660	128.11	437.83	0-840	188.41
Denaby	192.00	0-480	141.99	443.52	0-900	231.75
Edlington	242.56	0-840	254.08	364.43	0-840	194.47
Intake	279.43	0-720	176.78	336.19	0-960	231.06
Wheatley	323.85	0-960	230.77	348.33	0-960	210.94
Carcroft	239.80	0-720	173.94	373.58	0-840	194.85
Stainforth	180.51	0-840	176.92	273.70	0-840	159.74
TOTAL:	**256.14**	**0-960**	**197.72**	**355.41**	**0-960**	**202.24**

Table B14. The mean reported moderate physical activity times and physical activity classifications based on ethnicity

	Mean Physical Activity Time (minutes)	Range	Standard Deviation
White British	218.66	0-5250	530.06
Other White Background	298.45	0-6005	950.22
Mixed	158.53	0-1170	282.72
Asian or Asian Background	173.64	0-2400	400.75
Black or Black British	124.81	0-840	198.21
Other Ethnic Group[19]	211.25	0-780	250.29
Prefer Not to Say	45.00	0-90	63.64

Table B15. Mean moderate-intensity physical activity times and physical activity classification based on disability

Do you have a physical or mental disability?	*Number of Responses (%)*	*Does the disability substantially effect normal daily activities*	*Number of Responses (%)*	Mean Physical Activity Time (minutes)	Range	Standard Deviation
Yes	301 (26.9%)	*Yes*	261 (86.7%	56.93	0-1800	201.20
		No	38 (12.6%)	413.11	0-5250	949.60
		Prefer Not to Say	2 (0.7%)	465.0	0-930	567.61
No	817 (72.9%)			263.88	0-6005	616.22
Prefer Not to Say	2 (0.2%)			380.0	0-760	537.40

---

[19] The Chinese participant (n=1) was included in Other Ethnic Group due to the small number of respondents.

Table B16. The mean moderate-intensity physical activity times of respondents and their physical activity classification

Employment	Number of Responses	Mean Physical Activity Time (minutes)	Range	Standard Deviation
Working full-time (30+ hours)	333 (29.8%)	336.23	0-6005	736.92
Working part-time (<30 hours)	120 (10.6%)	351.09	0-5220	781.20
Unemployed - less than 12 months	56 (5%)	262.05	0-3360	556.79
Unemployed - >12 months	77 (6.9%)	126.10	0-1260	230.29
Not working - retired	247 (22.1%)	121.11	0-2506	305.88
Not working - looking after house/child	111 (9.9%)	247.44	0-5040	669.09
Not working - long term sick or disabled	133 (11.9%)	25.60	0-780	94.66
Student - full time	25 (2.2%)	204.80	0-780	233.69
Student - part-time	6 (0.5%)	90.00	0-210	100.40
Other	10 (0.9%)	240.00	0-840	332.57
Prefer not to say	2 (0.2%)	300.00	180-420	169.71

Table B17. Presents the mean physical activity scores and physical activity classifications based on participants highest level of education

Qualification	Number of Responses (%)	Mean Physical Activity Time (minutes)	Range	Standard Deviation
Degree level of above	45 (4.0%)	602.89	0-6005	1276.75
Other Higher education	45 (4.0%)	266.67	0-2055	433.14
A-levels, NVQ & equivalent	136 (12.2%)	263.27	0-2400	450.20
GCSE/O-level A*-C or NVQ level 2	411 (36.6%)	242.41	0-5040	599.33
Qualification at level 1 or below	57 (5.1%)	163.42	0-2880	440.41
Any type	86 (7.7%)	295.17	0-5220	754.05
No qualification	317 (28.3%)	104.17	0-2760	323.33
Prefer not to say	23 (2.1%)	240.43	0-180	505.38

Table B18. Mean physical activity times of participants and the physical activity classifications of participants in each income category

	Mean Physical Activity Times (minutes)	Range	Standard Deviation
£0-5,199	138.62	0-1260	310.57
£5,200-10,399	105.86	0-3360	335.63
£10,400-15,599	220.51	0-5040	612.83
£15,600-20,799	151.07	0-3360	431.31
£20,800-25,999	389.38	0-6005	868.35
£26,000-31,199	419.83	0-2400	603.59
£31,200-36,399	395.83	0-3360	734.74
£36,400-51,999	588.20	0-5250	1159.28
£52,000+	521.07	0-3150	820.28
Don't Know	282.93	0-4200	664.06
Prefer not to say	151.94	0-5220	404.14

Table B19. Mean weekly physical activity time (in minutes) of young people outside of school hours by area

| Area | Physical Activity | | | |
	Number of Households with Young People	Mean (minutes) per week	Range	Standard Deviation
Balby	46	78.91	0-480	100.63
Balby Bridge	12	30.83	0-105	35.73
Denaby	16	36.56	0-1680	290.02
Edlington	41	162.11	0-360	93.43
Intake	29	206.98	0-2160	347.91
Wheatley	38	84.37	0-1240	275.11
Carcroft	45	173.89	0-2025	291.03
Stainforth	78	261.38	0-600	143.06

Table B20. The mean Capability, Opportunity and Motivation ratings by physical activity classification

Barrier/Facilitator	Physical Activity Classification								
	Inactive			Fairly Active			Active		
Ratings based on 0-10 scale	*Mean*	*Range*	*Standard Deviation*	*Mean*	*Range*	*Standard Deviation*	*Mean*	*Range*	*Standard Deviation*
Having the physical skills and stamina to be physically active (*physical capability*)	5.40	0-10	3.96	6.68	0-10	3.24	8.71	0-10	2.00
Knowing about the importance of physical activity, and being able to make decisions and plans to be physically active (*psychological capability*)	7.81	0-10	2.61	8.18	0-10	2.49	9.22	0-10	1.58
Having sufficient time and the necessary resources to be physically active (*environmental opportunity*)	5.53	0-10	3.68	6.44	0-10	3.14	7.95	0-10	2.58
Having enough support from other people to be physically active (*social opportunity*)	5.45	0-10	3.75	6.50	0-10	3.24	7.94	0-10	2.63
Wanting to be physically active (*reflective motivation*)	4.52	0-10	3.73	6.12	0-10	3.24	8.24	0-10	2.54
Having routines and habits to be physically active (*automatic motivation*)	3.30	0-10	3.69	4.68	0-10	3.32	7.69	0-10	2.92

Table B21: Mean ratings by physical activity classification and community area

		Balby (a)	Balby Bridge (b)	Carcroft (c)	Denaby (d)	Edlington (e)	Intake (i)	Stainforth (s)	Wheatley (w)
Physical Capability (mean rating)	*Inactive*	6.10	3.98	5.90	3.64	5.12	5.33	6.52	5.94
	Fairly Active	6.53	6.57	7.70	5.75	6.00	8.00	4.93	7.68
	Active	8.15	8.42	8.03	9.20	9.00	9.09	9.04	8.26
	Total	6.66	5.12	6.63	5.25	6.16	7.54	7.46	6.90
Psychological Capability (mean rating)	*Inactive*	7.63	6.70	7.95	9.09	7.39	8.71	7.77	7.30
	Fairly Active	7.84	7.86	7.87	9.75	7.07	9.85	7.56	7.53
	Active	9.20	8.37	8.63	9.40	9.28	9.72	9.31	8.97
	Total	8.04	7.14	8.09	9.26	7.82	9.35	8.41	7.84
Physical Opportunity (mean rating)	*Inactive*	6.91	5.15	5.86	3.71	5.98	5.31	4.82	5.78
	Fairly Active	6.95	6.71	6.39	6.40	6.93	7.23	4.94	6.26
	Active	7.47	7.95	7.40	8.87	9.09	8.10	7.27	8.45
	Total	7.04	5.87	6.29	5.32	6.84	6.95	5.88	6.66
Social Opportunity (mean rating)	*Inactive*	5.65	3.81	6.45	6.05	5.68	4.69	4.79	5.41
	Fairly Active	6.00	5.14	7.83	7.30	6.36	7.46	3.50	7.00
	Active	8.05	7.58	7.80	9.10	8.69	7.59	7.57	8.00
	Total	6.28	4.71	6.95	6.95	6.49	6.47	5.87	6.43
Reflective Motivation (mean rating)	*Inactive*	3.73	3.27	4.17	5.86	4.11	5.73	5.87	3.94
	Fairly Active	4.68	5.29	7.00	6.65	5.50	8.62	5.13	5.84
	Active	6.54	7.42	7.33	8.67	8.81	9.52	8.82	7.21
	Total	4.53	4.30	5.23	6.63	5.40	7.98	7.07	5.21
Automatic Motivation (mean rating)	*Inactive*	2.54	1.94	3.56	2.94	3.55	3.63	4.91	3.29
	Fairly Active	4.89	3.43	5.13	4.10	4.71	5.85	3.69	5.00
	Active	5.76	7.79	6.58	9.40	8.22	8.48	8.14	6.76
	Total	3.59	3.29	4.48	4.61	4.82	6.36	6.19	4.60