

1 The health and safety risks for people who drive for work in the gig economy

3 1. Introduction

4 In Great Britain it is estimated that a third of fatalities on the road occur where someone has been driving as part of
5 work (Helman et al 2014). Factors related to the elevated collision risk for driving for work include higher mileages
6 (Lynn and Lockwood, 1998; EU-OSHA 2010), fatigue (Road Safety Analysis 2014; Robb et al 2008), being more
7 likely to talk on a mobile phone, feeling time pressured (O'Dolan and Stradling, 2006) and driving at higher speeds
8 (Clarke et al 2005; Coegnet, et al, 2013). People who drive for work are also more likely to be considered at fault for
9 the collisions they are involved in (Clarke, et al 2005).

10
11 The gig economy involves people who do not get paid a salary but get paid per gig or a 'piece rate' whereby service
12 providers are linked to service users via an app. Examples of this type of employment are Uber and Deliveroo. Drivers
13 who earn money in this way are often referred as lifestyle workers or flex couriers or workers because they can choose
14 when they work to fit in with other commitments. These workers are currently regarded as self-employed and are not
15 covered by employment law. Such workers can provide taxi services using their own car or deliver parcels or food by
16 car, van, moped or motorbike or pedal cycle.

17
18 Official statistics (Department for Business, Energy and Industrial Strategy, 2018) estimated that 4.4% of the GB
19 population had done some work in the gig economy in last 12 months (about 2.8 million people), about a quarter live
20 in London, were generally young (56% were 18-34 years), with the majority in transport services, such as parcel and
21 food delivery.

22
23 Little research has been published that has explored the road safety risks associated with working in the gig economy
24 (Christie et al 2017). The aim of this study was to explore the experience of risk and risk management amongst
25 drivers and their managers engaged in the gig economy.

26 2. Methodology

27 This was a mixed methods study. Firstly, we carried out 48 in-depth interviews with people who used their own cars,
28 vans, mopeds/motorbikes or pedal cycles to deliver parcels or food or provide taxi service. In addition, where possible,
29 we also interviewed managers. Topic guides for workers and managers were developed to explore:

- 30 • the context in which they work (hours of work, time of day, number of deliveries, mileage, how driving fits in
31 with other work etc),
- 32 • the extent to which they are aware of, create or experience risks,
- 33 • what they perceive as the roles and responsibilities for safety when they drive or ride for work,
- 34 • how they or their employer help manage safety.

35 We aimed to carry out a diverse range of interviews among people who manage them or the systems that provided
36 them with work. As people in the gig economy use their own cars, vans, mopeds/motorcycles or bicycles we varied
37 our sample to represent these different modes as some, by definition, are more vulnerable (cyclists/ motorbikes etc.)
38 road users than others (car/vans).

39 A field work company was used to achieve the sample through a combination of scouring recruiter networks, targeted
40 advertising and posting on social media forums. Since some segments of workers or managers could be described as
41 'hard to reach' we knew that we would not be able to source all of the participants through traditional methods so we
42 budgeted to supplement network recruitment with PPC (pay per click) advertising and regular posting on industry
43 forums. PPC adverts were used where we only show ads to those who we think work in the gig economy based on
44 their search history and online behaviours and interests. Advertisements were distributed via Google, Facebook,
45 Instagram, Twitter etc. We also posted the opportunity to online groups that cater specifically to gig economy
46 workers. Participants were paid an incentive to compensate for their time. All interviews were administered over the
47 telephone and transcribed. The number of qualitative interviews required to explore an issue which has little research
48 is a contested area but it is generally agreed that around 6-12 interviews are appropriate and often as few as six will
49 provide enough data to identify meta themes (Guest et al 2006). The qualitative data were analysed using thematic
50 content analysis. The aim of the qualitative analysis was to identify the key themes across the data set and provide an
51 'analytic' or 'interpretative' story of how the themes or ideas in the data inform our understanding of the health and
52 safety risks experienced by transport based gig workers (Braun and Clarke,2013). Verbatim quotes are used to

53 illustrate the narrative or story and are drawn from across the sample. Finally, a thematic map was developed. This
 54 was created by considering how the themes or ideas were linked to what we know about collision risk and what were
 55 the potential underlying mechanisms of risk generation related to gig work. It provides an illustration of the key
 56 concepts and how they are related (Braun and Clarke, 2006).

57
 58 Secondly, we developed a questionnaire based on the themes that were identified from the interview data and
 59 delivered it online via social media forums for couriers and courier organisations. The study was given ethical
 60 approval by UCL Research Ethics Committee (number 4129/002)

61 3. Results

62 63 3.1 Qualitative interviews

64 65 3.1.1 Participant characteristics

66 We interviewed 48 participants working in the gig economy: six managers, 15 food couriers on two wheels, 10 taxi
 67 couriers and 17 parcel couriers, (see Table 1). Most of the participants were male (n=40), with most had worked in the
 68 gig economy for less than two years (n=33). In terms of average driving hours per week of the drivers in the sample
 69 (n=42) a third (n=14) reported that they worked for over 50 hours a week which is against GB regulations on driving
 70 hours with 6 of these drivers working more 60 hours per week.
 71
 72

73 **Table 1: Interview survey participant characteristics**

Pseudonym	Gender	Job description	How long worked for (= indicates previous employment as courier)	Average hours per week	Urban, Suburban, rural
David	Male	Bike courier	4 months	15	Suburban
Andrew	Male	Bike courier	4 months	20	Urban
Liam	Male	Bike courier	8 months	20	Urban
Victor	Male	Bike courier	3 weeks	30 – 40	Urban
James	Male	Bike courier	3 months	10	Urban
Paul	Male	Bike courier	4 months	20 - 40	Urban
Sally	Female	Bike courier	14 months	35 - 40	Urban
John	Male	Car courier	1 year	20	All
Peter	Male	Car courier	18 months	0 - 24	Urban
Rachel	Female	Car courier	5 months	6 - 24	Rural / Suburban
Frank	Male	Car courier	1 year +	40	All
Ryan	Male	Car courier	9 months	0 - 12	Urban / Suburban
Mark	Male	Car courier	Not known	50 - 60	Urban
Gary	Male	Car courier	8 months	20 - 24	All
Carol	Female	Car courier	4 months	6 - 8	Suburban / Rural
Stuart	Male	Car courier	8 months	24	Urban / Suburban
Jamie	Male	Car courier	4 months	42 – 50	All
Craig	Male	Manager	3 years	60 – 70	All
Martin	Male	Manager	2 1/4 years	60 - 70	All
Richard	Male	Manager	3 months (3 years)	40 – 45	Urban
Ray	Male	Manager	1 year (3+)/	35	Rural
Vivian	Female	Manager	14 years	70	All
Oliver	Male	Motorbike courier	2 years	10	Urban
Louis	Male	Motorbike courier	7 months	30 - 35	Urban / Suburban
Jack	Male	Motorbike courier	18 months	25 - 30	Urban
Neil	Male	Motorbike courier	1 year	50 - 60	Urban
Tomas	Male	Motorbike courier	1+ year	35	Urban
Mary	Female	Motorbike courier	4 months	30	Urban
Jon	Male	Motorbike courier	9 months	60+	Urban / Suburban

Silvio	Male	Motorbike courier	18 months	30 – 40	Urban / Suburban
Mark	Male	Manager	7 months (previously worked as courier)	45	Urban
Harry	Male	Taxi Driver	2 years	10 - 40	Urban
Dion	Male	Taxi Driver	1 - 2 years	60 - 80	Urban
Edward	Male	Taxi Driver	1 year	60 - 70	Urban / Suburban
Andy	Male	Taxi Driver	18 months	20 – 45	All
Alan	Male	Taxi Driver	18 months	70 - 80	All
Alex	Male	Taxi Driver	2+ years	45 – 50	All
Toby	Male	Taxi Driver	2 years	60	Urban
Arnab	Male	Taxi Driver	2 years	40 – 50	Urban
Gabriel		Taxi Driver	almost 1 year	50 – 60	Urban
Nathan	Male	Taxi Driver	1 year	25 -45	All
Sarah	Female	Van courier	15 years	46+	All
Will	Male	Van courier	18 months	60+	Urban / Suburban
Brian	Male	Van courier	2.5 years	60	All
Anne	Female	Van courier	3+ years	40	All
Dan	Male	Van courier	Not known	48	All
Ben	Male	Van courier	8 months	20	All
Kate	Female	Van courier	2 years	72	Suburban

74
75 All participants have a pseudonym and we refer to the companies involved as A, B, C followed by an indication of
76 the type of work. We have used a selection of verbatim quotes to illustrate emerging themes and after each quote
77 indicated participant type. We present the data for all participants exploring their responses in relation to factors
78 associated with taking risks such as working under pressure, being distracted by the work interface and how this leads
79 to violating traffic laws and collisions. In addition we present the responses of managers to the health and safety
80 challenges of this type of work environment.
81

82 3.2 Key themes related to the health and safety of people who work as drivers in the gig economy

83 3.2.1 Pressure

84
85 This section shows how the people who use their own vehicles to deliver food or parcels or provide taxi services felt
86 that the work was intrinsically pressured and this often led to violations. It was clear from the participants that parcel
87 courier work on a self-employed basis was intrinsically pressurised because it is based on a piece rate, the more they
88 delivered the more they earned:
89

90 *We only get paid on what we deliver. The pressure is on you to deliver because if you don't deliver you don't*
91 *earn.* (Anne, Van courier Company D parcel delivery)
92

93 Unlike car/van parcel couriers taxi drivers seemed less pressured because they could work to their own schedule by
94 signing on and off for the work when they wanted to. Taxi drivers working in the gig economy did not express many
95 concerns about pressure despite the whole system being designed to put them under pressure. Participants
96 acknowledged that the intrinsic pressure of the job led to speeding on occasions:
97

98 *what tends to happen, is the driver limits their time they are not making money by speeding up a little bit. I*
99 *don't do that now because too many points on your licence, and it means your insurance costs go through the*
100 *roof anyway, so it's not worth it to be fair.* (Andy, taxi driver Company B)
101

102 The moped/motorbike workers who delivered food felt that the faster you go the more you earn which led to risk
103 taking and road traffic violations especially with regard to speed and a view that this behaviour was endemic among
104 gig workers:
105

106 *Participant: "It's all about yourself and getting paid more. Nobody puts any pressure on you, nobody asks*
107 *you to go faster or anything. You don't get messages or anything. It's basically the faster you are, the more*
108 *you earn*
109

Interviewer: Do you think that has any impact on your safety on the roads?

110 *Participant: Absolutely .You want me to be honest?*

111 *Interviewer: I do want you to be honest. It's all confidential. I want you to be honest.*

112 *Participant: You ignore all the road signs and you just speed all the time. I got 2 tickets for running through*
113 *a red light. I got a ticket for illegal parking, I've got 2 of them.*

114 *Interviewer: Sounds like it might get quite expensive?*

115 *Participant: Basically, you're trying to do as many hours as possible. If you do 50 orders today, you will get*
116 *£250, so it's nothing. (Louis, Motorbike courier multiple companies)*

117
118 Many of the participants had signed up to work for multiple companies to secure a good income. But this led one
119 courier to feeling under pressure and causing them to rush in what they considered to be dangerous environments:
120

121 *.... it does stress me out to be honest, but that's my fault because I don't think I should be overlapping jobs,*
122 *but I'd rather do that to have a secure and nice income especially as I'm commuting there and then paying for*
123 *places to stay while I'm there and that. I think it does sometimes because I will get a delivery on my app. I*
124 *will get a delivery with (Company H food delivery) and then it's very rare and I would have just picked it up,*
125 *so I will have to deliver that now and then I will get a delivery with (Company G food delivery) or something*
126 *and a few more in opposite directions and I will have to rush it, maybe do a little bit of speed, but to be*
127 *honest, I think with (Company H food delivery), even on its own, you've always got to filter through traffic,*
128 *you've always got to be quick for your destinations otherwise you're not going to make the normal target of*
129 *£10 an hour, £9 an hour, you've always got to filter especially in central London, I think it is dangerous..(Jon,*
130 *Motorbike courier multiple food delivery companies)*

131
132 There were mixed views on the pressures of the job among pedal cyclists who delivered food. Like the other couriers
133 we spoke to, pressure was seen by some as an intrinsic feature of courier work:
134

135 *The main pressure is the pay because you get paid per delivery, so if I'm waiting at a restaurant for food or*
136 *I'm waiting for the customer to come to the door, I don't get paid for any of that time because it's not an*
137 *hourly wage. I just want to deliver as quickly as possible, to get the food as quickly as possible so I can get*
138 *another delivery to make more money, that's kind of a positive pressure for me because if I work harder, I can*
139 *get paid more.(Andrew, bike courier for companies C and H food delivery)*

140
141 Many of these workers said they had to accept a minimum number of jobs (set by the company) and if they rejected
142 too many they would not be given any more work. Some felt they could self-regulate as long as they kept within
143 certain rejection rates:
144

145 *I don't feel any pressure at all. No, not at all. You have no one above you watch down on you. I've never*
146 *been told to be faster or anything doing my deliveries, literally I've got no pressure at all. The only thing I*
147 *know of, is that you have to keep your acceptance rate above 70% [i.e. accept at least 70% of jobs] (Liam,*
148 *bike courier Company C food delivery)*

150 3.2.2 Distraction

151
152 Many of our participants found the app a distraction because it beeped when jobs were offered and they were
153 continually looking down at it taking their eye off the road. Also because the app acted as a 'sat nav' it often caused
154 them to go in the wrong direction which was also regarded as a distraction:
155

156 *Participant: with it constantly going off at me when you're driving, it does become a distraction.*

157 *Interviewer: How many messages are they sending?*

158 *Participant: can have anything up to 10 a day. Some people are saying, where's our parcel, or telling me*
159 *where to deliver a parcel to or you tried to deliver to this address and the customer says you didn't give them*
160 *enough time to get to the door, or the customer is now back home, can you go back and deliver it. Stupid little*
161 *things.*

162 *Interviewer: It just dings and dings until you answer it?*

163 *Participant: Until you press the button to say, read, it's literally like a loud bell every 30 odd seconds.*

164 *Interviewer: Do you feel that has any impact on your safety?*

165 *It can be distracting, yes especially if you've got 10 minutes and you're going through school areas and what-*
166 *not and you've got 10 minutes until your next stop. (Jamie, car courier, Company E parcel delivery)*
167

168 Most of the motorbike, moped and scooter couriers we talked to received work via an app on a mobile phone and most
169 found it a distraction because there was a noise to alert them of a job and a fixed time window in which to accept a job
170 and also because they had to look down follow the directions to the job given by the 'sat nav' function:

171 *I must admit I just look down and swipe it with one hand whilst I am still going, probably isn't the safest thing*
172 *you could do. (Jack, motorbike courier, Company C food delivery)*

173
174
175 In GB it is against the law to handle and interact with a mobile phone whilst driving. However, many admitted
176 handling their phone whilst riding to accept jobs:

177
178
179 *Again, I always try and be as safe as possible, so the impact it has was I would be like, oh, for God's sake!*
180 *I'd look at it and then maybe my mind was taken off the road because I'm looking at the app and I would have*
181 *to take one of my hands off the steering wheel either to accept the job or decline the job, but most of the times*
182 *accept the job and you shouldn't have one hand on the steering wheel of a motorbike. You should have both.*
183 *The reason why you need to do it, very sharpish, is within a small window, I think it's a minute or 2 minutes, if*
184 *you don't accept it, it will take it away like as if you rejected it. (Neil, Motorbike courier, Company H food*
185 *delivery)*

186
187 The distraction caused by their phone was even greater when it was raining because it made it difficult to use:

188
189 *when it's raining and because it's a touch screen it sometimes doesn't work properly, so you must take out*
190 *your phone and you handle it while riding just to accept an order.(Louis, motorbike courier Companies C and*
191 *H food delivery)*

192
193
194 Few taxi drivers spoke of the distraction caused by the app (as it was like any other sat nav) but acknowledged they
195 only had a short time to accept a job.

196
197 The pedal cyclist couriers reported that they would handle their phone whilst cycling especially as they had a short
198 time window to respond and by not responding this would reduce their acceptance rate which could mean they would
199 not be offered further jobs:

200
201 **Participant:** *If I'm riding around and things, it would be whenever I get orders, so I would use my phone*
202 *which is obviously not very safe. I would use it with just one hand because I have good balance. If it's secure,*
203 *it's okay.....*

204 **Interviewer:** *Has it ever impacted your safety on the road, do you think?*

205 **Participant:** *I would say yes obviously because at the end of the day if I'm cycling through a junction or if I'm*
206 *cycling through something and the app is just going, 'ding, ding' and I can hear through my earphones, or*
207 *anything like that. (Peter, bike courier, Company C food delivery)*

210 3.2.3 Tiredness

211
212 This section explores the role of tiredness experienced by workers as this is a causal factors in collisions. Tiredness
213 was an overarching theme of the narratives of parcel couriers. Many of the parcel delivery couriers spoke of the
214 intense pressure of self-employed parcel delivery which impacted on their sense of wellbeing and level of tiredness:

215
216 *Tiredness just totally affects us in the fact that your reactions aren't as fast. You're not noticing things that*
217 *you would normally notice, albeit signs, kids stepping out, a car that's got a headlight out, easy to*
218 *misinterpret it as a bike, and before you know it, even road markings and especially on the rural rounds*
219 *where the road markings disappear. There have been a couple of times I've clipped kerbs, or you'll clip onto*
220 *the grass verges and what-not. That's just personal experience from my point of view and I know the areas I*
221 *drive in especially with the weather and the days where it's dark by 4 o'clock. I would rather be off the road*

222 *by then because you get tired in that state and on the roads, I work on, it's just an accident waiting to*
223 *happen.(Jamie, car courier, Company E parcel delivery)*

224
225 One driver admitted falling asleep at wheel:

226
227 **Interviewer:** *You're also working a lot of hours. Do you ever feel very tired whilst you're working?*

228 **Participant:** *Yes, especially when I'm driving home, and I feel myself snoozing off. I open the windows and*
229 *slap my face to wake myself. There was a time when I was very tired and kept waking myself up. I felt the*
230 *van going over bumps and that wakes you up. I slowed right down to about 50 mph on the motorway and*
231 *trying not to go too fast. If you do crash, it's not going to be very good if you're going too fast. (Will, van*
232 *courier, Company F parcel delivery)*

233
234 The mental and physical workloads were described as fatiguing:

235
236 *... by the time I get home I would be worn out because it's not just delivery driving because you're having to*
237 *know where you are going every time and when you jump out the car, and as soon as I'm out the car, I'm on*
238 *the app, you have to scan your parcel, check your parcel, make sure it's the right one, make sure you're in the*
239 *right area, so your head's in gear all the time, so it's more mental tiredness, it's not physical, you do a bit of*
240 *walking, but physically, no problems, but mentally, I think you can get mentally tired, yes.(Frank, Car*
241 *courier, Company A parcel delivery)*

242
243 Many couriers spoke of excessive demands at Christmas combined with dark nights affecting their level of tiredness
244 and this led to feeling impaired, easily distracted and experiencing a conscious need to concentrate more with some
245 relying on stimulants such as caffeine drinks to keep going, though this potentially masked their impairment:

246
247 **Participant:** *We've just gone through what we call peak which are Christmas deliveries. I worked 33 days*
248 *solid without a break and the majority of those days were anything between 12 and 14 hours. It was a case of*
249 *get up, have a coffee, go to work, come home, have a cup of tea, go to bed. I was exhausted.*

250 **Interviewer:** *What kind of impact did you find that having on you, your driving, your safety?*

251 **Participant:** *I tried to take regular breaks. I was working up until 9 o'clock at night and I was drinking a lot*
252 *of energy drinks. (Sarah, van courier Company E parcel delivery)*

253
254
255 Some couriers felt that could take a break when they wanted in other words they had they freedom to self-regulate and
256 avoid tiredness:

257
258 *No, I don't think it has. It hasn't for me anyway, no. For me, it's only something that I'm doing because I*
259 *choose to. It's not something I have to. It's not my daily bread and butter if you know what I mean, so if I*
260 *were feeling tired, or off it, or it was dark, I just simply wouldn't do it.(Carol, Company A parcel delivery)*

261
262
263 Participants who used motorcycles or mopeds to deliver food are particularly vulnerable in collisions and felt that
264 tiredness impacted their safety:

265 *You're literally non-stop, you're tired and what was happening there were times when I was riding a bike and*
266 *I could just feel myself so exhausted. I just wanted to close my eyes and when you reach that stage, you're*
267 *just like, you know what, you need to stop. I have seen people that don't, they just carry on. They will go and*
268 *do a load of Red Bulls, loads of Pro Plus tablets and they carry on..... I knew other riders¹ [drivers] that*
269 *would literally be there from 7am and finish at 2am. Yes, they are making shit loads of money, shit loads, but*
270 *you know what, they are probably going to die very soon. (Neil, motorbike courier, Company H food delivery)*

271
272 Other couriers also admitted working long hours which would be in breach of commercial driver working hours
273 regulations:

274
275 *When I'm flat out working which is all I do when I'm down in London, like recently I've had a few other*
276 *things going on as well, so I've been doing 12-hour shifts, but I work every day and I'll get out for 9 in the*

¹ In GB a rider is a term used to describes someone who drives a two wheeled vehicle

277 *morning and finish at 12 o'clock usually, so I get up at 8, start work at 9, so usually at least 15-hour*
278 *shifts.(Jon, Motorbike courier-multiple companies food delivery)*

279
280
281 Most of the cyclists we talked said that they self-regulated and took breaks or signed off if they were exhausted. They
282 acknowledged that they could work long hours without breaks and there was no regulation on hours worked:

283 **Interviewer:** *Do they mandate breaks or anything like that?*

284 **Participant:** *No. If you wanted to work 12 hours a day, 7 days a week you could*

285 *...If you are knackered, you can just sign out and will have to accept to be penalised. You will have to accept*
286 *to maybe losing a few hours the next week or something. (Liam, bike courier, Company C food delivery)*

287 One courier had clearly felt the effect of tiredness which was a warning to her to stop working – she later described
288 how being tired was a factor in a collision she had:

289 *I think it's been something simple as in the end of the night and I've done quite a few deliveries and I was*
290 *tired and I closed my eyes for a little bit too long and just went a bit too close to the kerb and swerve. It*
291 *wasn't anything major, but it happens sometimes, and I felt that's when I know it's bed time. Go home.....I*
292 *was tired and just forgot to brake. I wasn't going fast. I was going at 2 mph, but I just didn't stop and went*
293 *straight into a pole, straight over the handlebar. (Sally, bike courier Company C Food delivery)*

294
295 The theme of tiredness did not come through as strongly for taxi drivers compared to the other participants as they
296 tended to choose their own hours and self-regulate when they felt tired:

297 **Interviewer:** *Do you ever feel very tired whilst you're working?*

298 **Participant:** *No, because I choose my own hours. (Alex, Taxi driver, Company B)*

299
300 Some participants suggested that long hours may contribute to tiredness and that these long hours were caused by long
301 commutes for some drivers into a city to work and the fact that they were incentivised to drive late at night because
302 the rates of pay increased:

303 *I can see why drivers were carrying on even if they're feeling tired because it's busy and then the later it goes*
304 *on into the night, as (Company B taxi) have a surge so that's when the price goes up, so obviously the later*
305 *you work into Friday night, Saturday night, the prices go up so I can see why drivers would be tempted to stay*
306 *out even if they're tired because that £20 job may be £50 or £60 with surge.(Harry, Taxi driver Company B)*

307 308 **3.2.4 Risks and risk taking**

309
310 Risk taking seemed an endemic part of the narratives of our participants. The key themes that arose were speeding
311 because of the innate pressure of the work, violating traffic signals to save time, covering high mileages in complex
312 and busy urban areas and, especially for those on two wheels, coping with poor weather conditions. Most participants
313 who drove motorised vehicles reported that the pressurised nature of the work led them to speed or take other risks to
314 save time.

315
316 *There are times where yes, you will, go faster than the speed limit, or you will gamble on an amber light just*
317 *to get through it. Just to save that bit of time, so yes, most definitely. (Peter, Car courier, Company A parcel*
318 *delivery)*

319
320 One parcel who courier worked six 11 hour days per week already had six points for speeding:

321 **Interviewer:** *Is speeding something you have to do to get the job done, or you just did it?*

322 **Participant:** *Yes, very much.*

323 **Interviewer:** *You feel like it is, you feel like you must speed?*

324 **Participant:** *You must stay within your time windows. The customer gets a delivery window when the parcel*
325 *will be delivered and if you go out of those windows, you get fined for it. You get a service charge fine. (Will,*
326 *van courier, Company F parcel delivery)*

328
329 Some did not feel the need to take risks and wanted to avoid getting points on their licence:
330

331 *I just drive at my normal pace because that's what I do anyway, and I know the roads around here. I will just*
332 *drive at a good steady pace everywhere. It's not worth getting a ticket, it's not worth me getting any points. I*
333 *might go 35 in a 30 without realising, but I mean I am not flying around everywhere. (Frank, Car courier*
334 *Company A parcel delivery)*
335

336 The long hours of courier work and the exposure to risk (high mileage) were identified as the key risks associated with
337 their work:
338

339 *Six days a week, we can't work 7 and I probably do 12 hours a day roughly. That's a 9-hour route and I've*
340 *got travelling time to and from the depot to where I live and leaving the depot to the first drop and from the*
341 *last drop back to the depot.(Brian, van courier, company A parcel delivery)*
342

343 These on two wheel motorised vehicles described risks related to safety riding in busy traffic, poor weather conditions
344 and on poorly maintained roads and also that they were doing high mileages and therefore more exposed to these
345 risks:
346

347 *You must watch out for other riders [drivers], the other drivers, you also have to watch out for potholes and if*
348 *it's raining and anything metal, you're slipping on it and the yellow paint work on bus stations and all that*
349 *shit, you need to watch out as well. You've got to watch everything. (Neil, motorbike courier, Company H*
350 *food delivery)*
351

352 Weather conditions clearly posed a risk for participants on motorised two wheels. The companies they worked for
353 incentivised carrying out work in such conditions by paying a higher than normal rate:
354

355 **Interviewer:** *Do you ever feel any pressure to go out if conditions are bad?*

356 **Participant:** *Yes, I do, if it's light rain, if it's heavy rain, storm or very windy, I don't go out, even though they*
357 *give you monetary incentives, they up the deliveries and you get an extra £1 or 50p or whatever per drop, so*
358 *they do try and encourage, but personally, I don't feel comfortable to do it, but a lot of drivers have a lot of*
359 *experience and they do feel comfortable and they do go out. It's down to the drivers to assess themselves. If*
360 *you don't feel confident, then you shouldn't go and do it. (Mary, motorbike courier Company C food delivery)*
361

362 Like other types of couriers we spoke to cyclists were incentivised by their company to deliver in risky conditions:

363 *We get 100% of all the tips we get as well and (Company C food delivery) offer bonuses as well in the rain. If*
364 *it's terrible weather, they will text you and say you're going to get an extra £1 per delivery tonight due to the*
365 *weather which is brilliant. £5.50 for delivery in the rain is brilliant. (Liam, bike courier, Company C food*
366 *delivery)*

367 However, rain was seen as the main risk factors endangering their safety:

368 *Falling off happens all the time when it rains. (Sally, bike courier, Company C food delivery)*
369

370 The equipment they used was also seen as causing a risk by obstructing their vision when looking behind:

371 *The bag on your back actually stops you from seeing directly behind you (James, bike courier, Companies C*
372 *and I food delivery)*
373

374 **3.2.5 Collisions and near misses** 375

376 Many participants admitted to experiencing near misses regularly and damaging their own and others vehicles:
377

378 *I've had a couple of near misses where I've been reversing around, you do an awful lot of U-turns and it's*
379 *quite tough on the vehicle, as I said, sometimes you might get in the car, drive 100 yards and then realise*

380 you've gone the wrong way, so you have to stop on a country lane, do a U-turn and turn around. (Ryan, car
381 courier, Company A parcel delivery)
382

383 Nearly every day. You never know, anytime. It is mostly cyclists or motorbikes because they come so fast.
384 They have a better view than us because they can see all around from the car because it's an open space, they
385 can see much better, but they put more pressure on us that we have to look everywhere than them having to
386 look everywhere. When you're driving you're surrounded by them at rush hour time. There should be some
387 rules for them as well, rules are there, but nobody follows. (Arnab, Taxi driver Company B)
388
389

390 Those working on two wheels seemed more likely to report that they had been injured as a result of a crash:
391

392 *I couldn't walk for 2 weeks because when I crashed, my ankle twisted around, so fire brigade came because I*
393 *was stuck between the scooter and between the car. The police came and then the GP's and stuff like that.*
394 *Company not interested just asked why I had not delivered the order.... It's not my first accident with a car.*
395 *It's probably my third or fourth, so I'm used to it. (Louis, motorbike courier for Companies C and H food*
396 *delivery)*
397

398 Most of the cycling couriers we talked to had experienced a collision either as a result of a fall or by being involved in
399 a collision with a vehicle:
400

401 *It was at night and I thought the kerb was lower than it was, and I just hit it at the wrong angle. I scraped my*
402 *knee and ripped my pants, ripped my gloves (Andrew, bike courier Company C and H food delivery)*
403
404

405 3.2.6 Training and safety checks 406 407

408 The theme of training came through particularly strongly for those who worked on two wheels. Most participants felt
409 that there was a tokenistic approach to training for the couriers and whilst document checks were carried out little
410 attention was paid to raising awareness about safety or checking the roadworthiness of vehicles:
411

412 **Participant:** *Yes, they checked everything. Also, background checks, driver licence check, insurance check,*
413 *safety equipment, your bike and stuff like that. In my case, my scooter.*

414 **Interviewer:** *So, they checked over your scooter, did they to make sure it was safe?*

415 **Participant:** *Not really. I think my front brake was not working while they were checking.*

416 **Interviewer:** *They didn't spot it?*

417 **Participant:** *No*

418 *I think it was poor training, so we were with a guy, some sort of team leader and he sort of did one order with*
419 *you to see if you can cycle safely. To see if you're capable for the job. It was hard to fail. (Louis, Motorbike*
420 *courier Companies C and H food delivery)*
421

422 Several participants observed that the companies they worked for were actually recoiling from providing any form of
423 safety training because they did not want to be perceived as acting like an employer (which meant having to give them
424 employment rights):
425

426 *I think now because they make it clear that they are not employers and we are self-employed, they are very*
427 *careful to not tell us what to do and not regulate us. It's good in a way as it gives us more freedom, but*
428 *obviously, it's bad. The downside to this is they don't feel able to dictate safe terms for safety, they advise us.*
429 *(Jack, motorbike courier, Company C food delivery)*
430

431 Unlike the other couriers we spoke to, most pedal cyclists felt that their managers were strict about giving basic safety
432 advice and tips:
433

434 *They did cover some things about checking your bike, make sure there is air in your tyres before you go out*
435 *and that sort of thing. It wasn't anything that anybody who rides a bike doesn't already know. It's basic. It*
didn't get too complex or anything.... They did give good tips like if you're turning left, don't get in front of the

436 vehicle as it might cut across you or whatever, that's always a good tip to give a bike rider [driver]. (Andrew,
437 bike courier Companies C and H food delivery)

438 However, one participant felt the induction was farcical:

439 *They don't check out your bike to make sure it's safe enough.It's a farce the induction. They used to*
440 *give you quite a few little things like lights for your bike from what I've heard just from the older riders*
441 *[drivers] on the Facebook group. They don't give you anything these days. They used to take you out for a*
442 *short run on your bike² and show you how that worked and how it all comes together to presumably see what*
443 *you're like on the bike as well, but I assume now with the amount of people that apply, all they're doing are*
444 *inductions (Victor, bike courier Company C food delivery)*

445 3.3 Managers views on the challenges of courier work

446
447 Managers were candid about the challenging work for couriers and describing some as 'super couriers' delivering 800,
448 900 parcels a day for six days a week and some being out for 12 hours a day. Managers acknowledged the intense
449 pressure that self-employed couriers were under and the risks they experienced:

450
451 *They're rushing too much because it's piece work, they are trying to get as many done as quickly as possible,*
452 *so they're likely to cut corners and put themselves and others at danger. A lot of drivers also cut corners by*
453 *not putting their seat belts on, etc. They also leave the van running and unlocked while they're out of it and if*
454 *you're in an urban area, is the risk to yourself from people trying to steal your parcels, you've got the risk*
455 *from animals and the risk from customers. (Martin, Company E parcel delivery)*

456
457 They acknowledged the pressure that they and their couriers were under to deliver to parcels irrespective of whether a
458 courier felt unwell or had other pressures and wanted not to work:

459
460 *We do have what we call cover couriers who are available, but officially, my response to that should be*
461 *who's your help? Who's your cover? If they haven't got one, or they haven't got somebody who could help*
462 *them, they can't be guaranteed that when they are feeling better, they will have work. (Vivian, Company E*
463 *parcel delivery)*

464
465 Some managers felt there was no interest in or compassion for the driver with the overriding concern being the
466 delivery of the parcels:

467
468 *Just the general policy is the parcels must get out no matter what. You would get phone calls saying I am*
469 *very sick today, and I've only done 5 of them, and it's like well, go to bed for an hour or 2, get up and then try*
470 *and do your parcels. That's the company line, the parcels must be delivered. (Richard manager Company E*
471 *parcel delivery)*

472
473 Managers clearly felt uncomfortable about supporting the company ethos that parcel delivery comes first and 'at all
474 costs' and the implicit bullying undertones in instructions to drivers that if they did not deliver the parcels then they
475 would not be given any more work or lose a shift:

476
477 **Interviewer:** *How did you feel about giving out that company line?*

478 **Participant:** *Not very good to be honest because if you're feeling ill and we're employed so we could take the*
479 *day off, but these guys don't have that luxury, if they didn't work, they didn't get any pay and the chances are*
480 *if you didn't deliver the parcels for the following day or 2, we would have to take the work off of you, or if*
481 *you've got 2 rounds, we'll take one round off you.*

482 **Interviewer:** *Even if it wasn't company policy, did you personally feel like you had any responsibility for the*
483 *safety of your workers?*

484 **Participant:** *Yes, you do because you get to know these people, these couriers, and there are lot out there that*
485 *have been there for quite a while, so you do realise it's their livelihood, so you don't want anything nasty to*
486 *happen. Just be friendly and approachable as you can, but it's at the back of your mind the (Company E*
487 *parcel delivery) policy, get out at all costs. It was hard act to separate yourself if you had a friendship with*

488 *some of the couriers. Some are old guys who had been there for 50 odd years. They are doing the best, but it*
 489 *was never good enough for (Company E parcel delivery). (Richard manager Company E parcel delivery)*
 490

491 We asked managers what driver behaviours they monitored such as hours worked, mileage, speed, number of drops,
 492 time between drops or collisions they were involved in, most managers said “ We only monitor the life of a parcel”.
 493 However, they were concerned about the risks inherent in a highly pressured courier role:
 494

495 *...couriers at [Company E parcel delivery) are on a parcel rate, they tend to think the faster they go,*
 496 *obviously the more parcels they can deliver, and therefore the more money they can earn. That is the case*
 497 *with most parcel companies to be honest with you. Craig Company E parcel delivery)*
 498

499 3.4 Online survey

500 3.4.1 Respondent characteristics

501
 502 Our online survey achieved 231 responses from couriers working with over 12 different companies. Participant’s
 503 characteristics are shown in Table 2 below. Our sample was predominantly male, people mainly drove cars and vans
 504 though nearly a third (29%) were bicycle couriers. Over three quarters had been working in the gig economy for less
 505 than three years and over one third were relatively new entrants to this emerging business. Most worked 35 hours or
 506 less per week. Our survey showed that all couriers worked flexible hours and most (80%) were paid per delivery with
 507 20% paid per time block. The survey showed that 47% of the couriers said they delivered food, 41% said they
 508 delivered parcels and 21% provided taxi services. In terms of hours most of the survey sample worked between 15 -
 509 35 hours (38%), a quarter worked fewer than 15 (24%) but over one third (37%) worked longer hours than this with
 510 15 people admitting to working over 60 hours a week.
 511

512 **Table 2: Characteristics of participants in online survey of gig workers (N=231)**

Main type of vehicle used:	
Cars	100
Two wheel motorised bikes	27
Bicycles	66
Vans	38
How long gig working:	
Under 1 year	84
1-2 years	71
2-3 years	21
More than 3 years	55
Hours per week:	
Under 15 hrs	56
15-35 hours	89
35-60 hours	71
More than 60 hours	15
Gender:	
Male	194
Female	37

513 3.4.2 Risk factors

514
 515 Our survey showed that a large proportion (42%) of lifestyle couriers had experienced a collision where their vehicle
 516 had been damaged and 10% of the total sample said someone (usually themselves) had been injured. Three quarters of
 517 respondents (75%) agreed/agreed strongly that there had been occasions while working when they have had to take
 518 action to avoid a collision. In terms of distraction we asked if their work is app based had this ever caused a distraction
 519 when they are driving – 40% said “yes”. In terms of effects of fatigue, a minority of respondents (16%) agreed/agreed
 520 strongly that they sometimes struggled to stay awake when driving or riding.
 521

522 Nearly half (47%) of respondents agreed/agreed strongly with the statement that “The time pressure of gig work can
523 make you travel over the speed limit”. Most respondents (63%) agreed/agreed strongly that they sometimes have to
524 park illegally to make a delivery and nearly a third (30%) agreed/agreed strongly that they had driven/ridden through
525 a red light when they've been under pressure. A small minority of the survey respondents (8%) said they had received
526 licence points while working as a gig driver.

527
528 We asked respondents whether the company suggested that they should have rest breaks. The majority of the sample
529 (67%) said “No”. Most of the respondents said that they were not told not to use their phone when driving or riding.
530 Only 26% of respondents agreed/agreed strongly that the gig company they worked for cared about their safety. We
531 asked respondents whether the responsibility for their safety should be their own, the company’s or shared – most
532 (68%) said it should be shared.

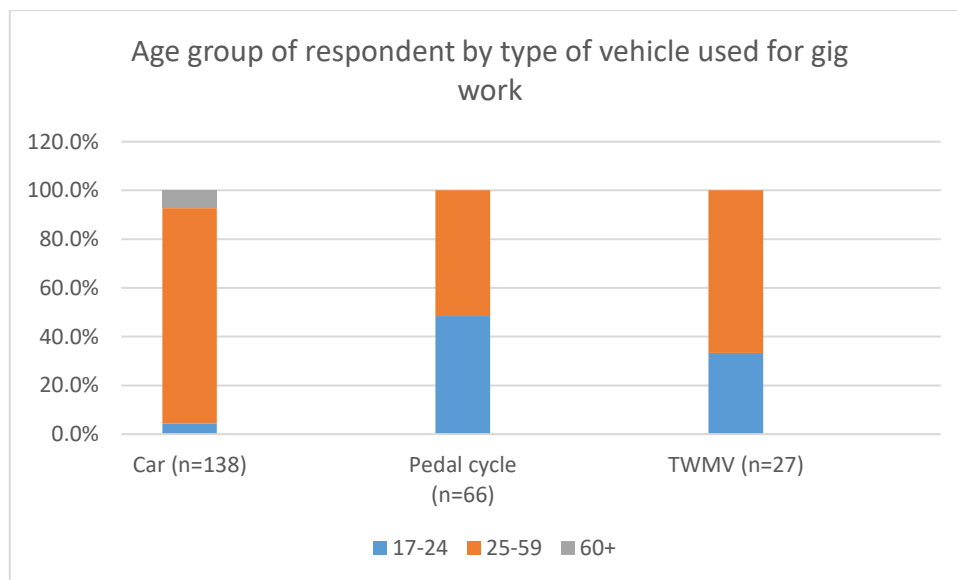
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535 3.4.3 Risk factors by type of vehicle used for gig work

536
537 Of the total sample 40% were vulnerable road users i.e. two wheeled motorised vehicles (TWMVs) (n=66) or pedal
538 cyclists (n=27). Chi-squared analysis was conducted on cross-tabulated data using a 5% significance level. Whilst
539 there were no significant differences in the proportions of males and females in different groups vulnerable road users
540 were significantly ($p < 0.001$) more likely to be younger (figure 1), and to have worked in the gig economy for less
541 time than car/van drivers ($p < 0.001$) (Figure 2).

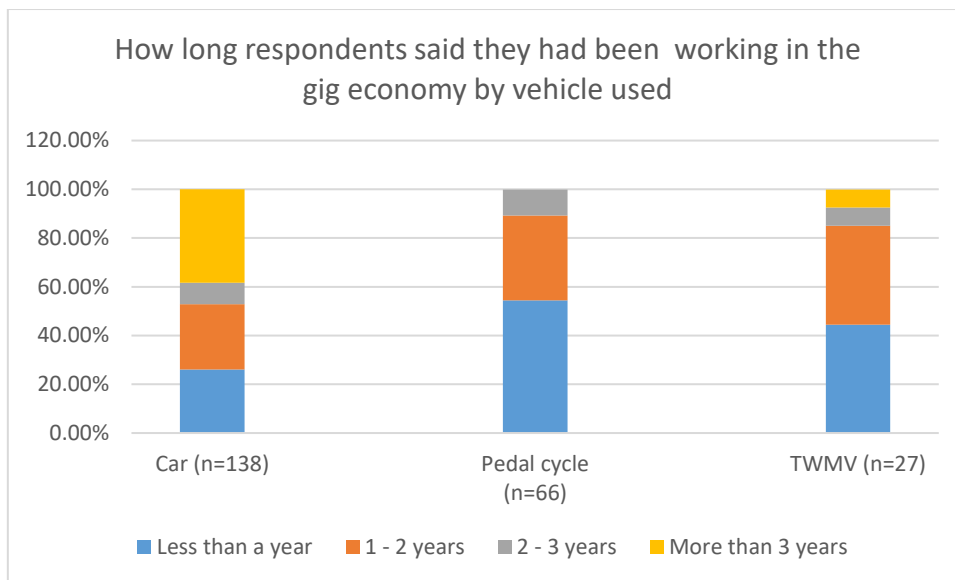
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Figure 1



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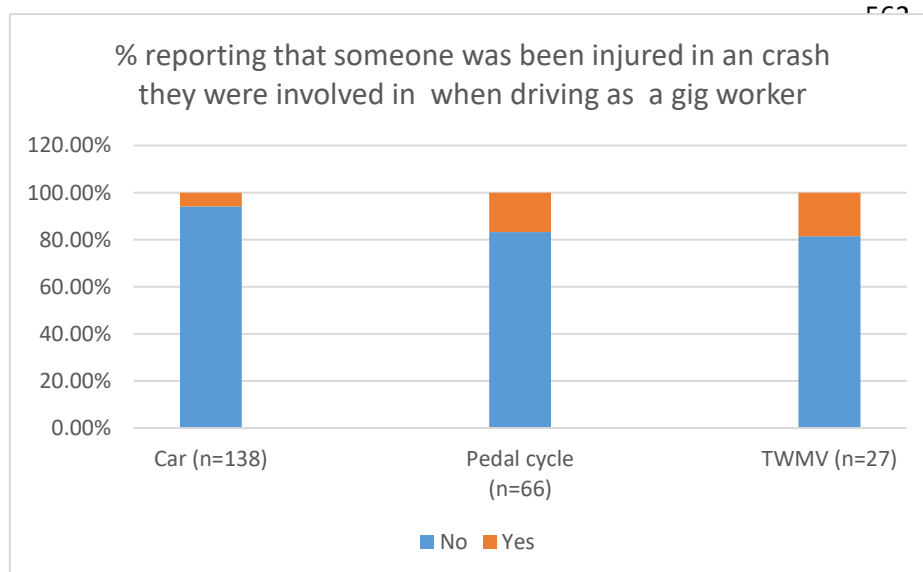
Figure 2



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In terms of risk factors there were no significant differences between the groups in terms of licence endorsement (excluding pedal cyclists), or experiencing damage to their vehicle. However, there was a significant ($p = 0.020$) difference between groups in terms of reported collision involvement with those on two wheels more likely to report someone had been injured (usually themselves) (Figure 3).

Figure 3

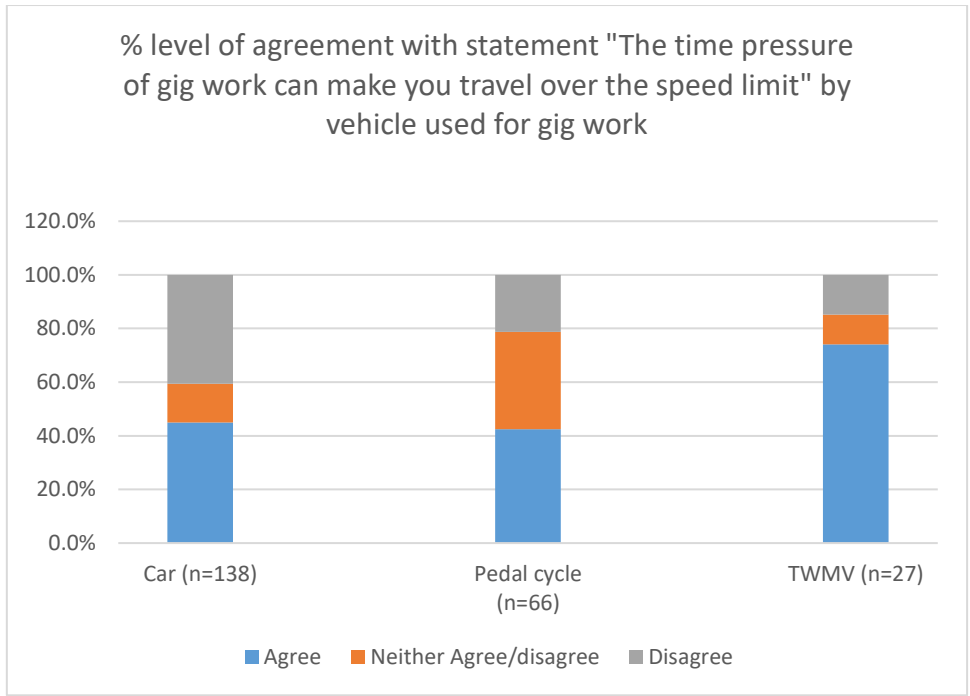


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There were no significant differences between groups in responses to statements about staying awake whilst working, distraction or experiencing near misses. However, TWMV drivers were significantly ($p < 0.001$) more likely to agree that they travelled over the speed limit because of time pressure (Figure 4). Those on two wheels were significantly ($p < 0.001$) more likely to agree they went through red lights because of the pressure of work (Figure 5), whilst car/van and TWMV drivers were significantly ($p < 0.001$) more likely to agree that they parked illegally compared to pedal cyclists (Figure 6).

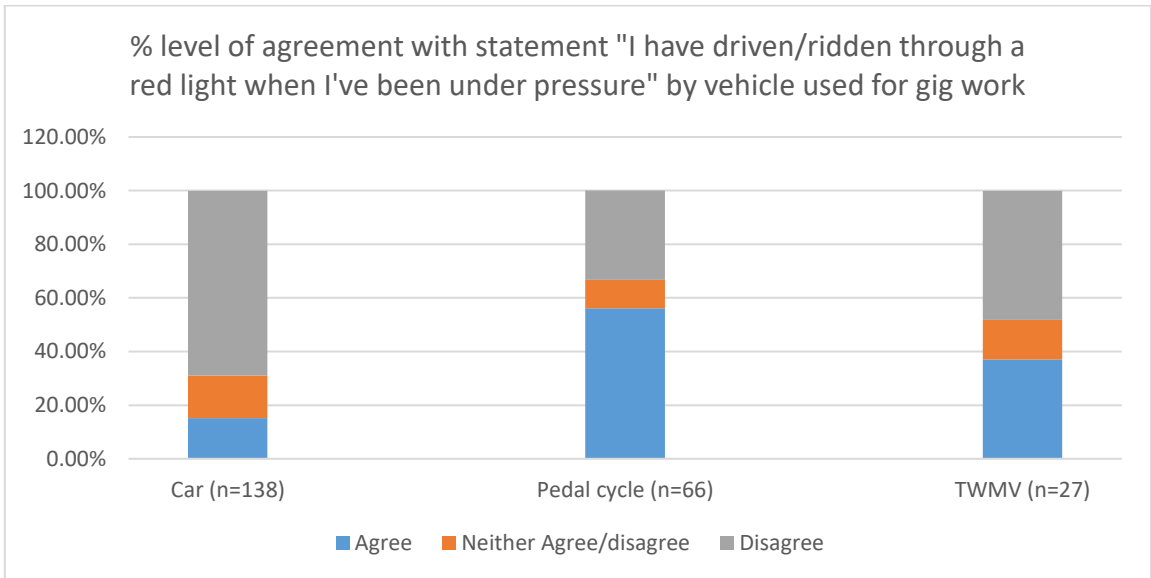
Figure 4

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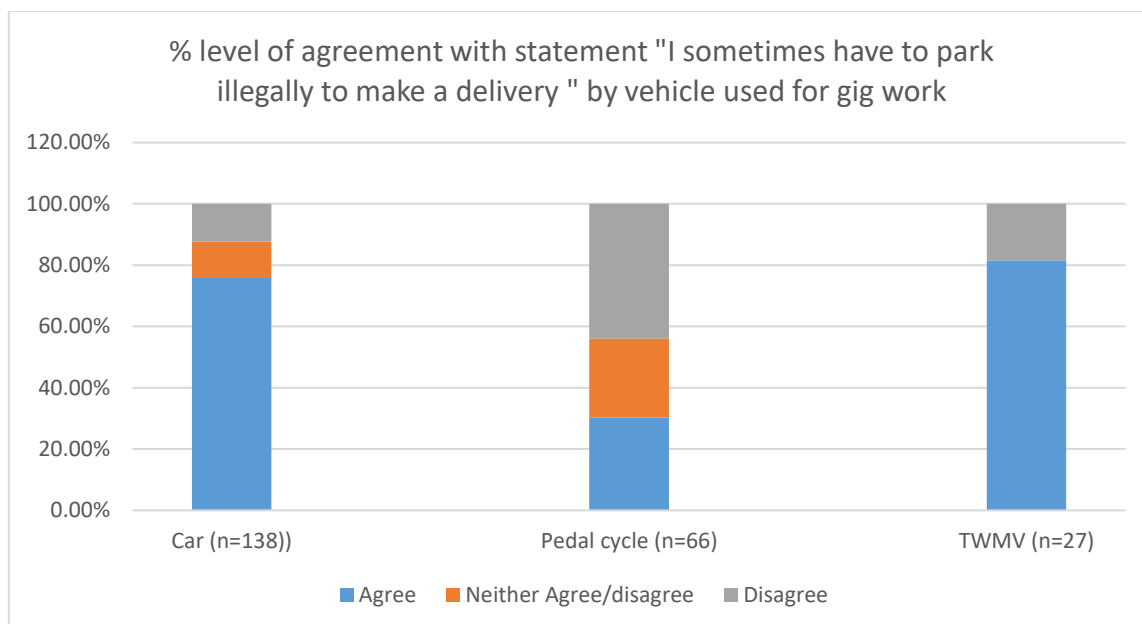
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Figure 5



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Figure 6



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613 4. Discussion

614 The business model of gig companies works on incentivising people to drive or ride in ways which, from a road risk
615 perspective, are most dangerous for example at night and in dangerous weather conditions, using a distracting work
616 interface in an intrinsically pressured environment. We found evidence of participants being fatigued through
617 working long hours, having high physical and mental demands, covering high mileages, long commutes and working
618 at circadian lows. The couriers we spoke to reported that they felt pressured and this often led to speeding, with some
619 admitting going through red lights. They reported being distracted especially by their phones and exposed to risk in
620 terms of high work load situations such as busy urban centres and in poor weather conditions.

621 Similar results were found in our online survey. Nearly half of the online survey respondents admitted speeding, two
622 thirds said they often parked illegally and nearly a third had driven or ridden through a red light. Of the survey
623 respondents 40% said that the app had distracted them whilst driving or riding and 8% said they had received points
624 on their licence whilst working. In terms of fatigue our question was phrased to detect severe fatigue i.e. struggling to
625 stay awake whilst driving or riding - still 16% agreed that this had happened to them. In our interviews it was clear
626 that some gig workers could self-regulate and just sign off on they were tired but others felt the pressure intensely
627 clearly working from necessity and this affected their wellbeing.

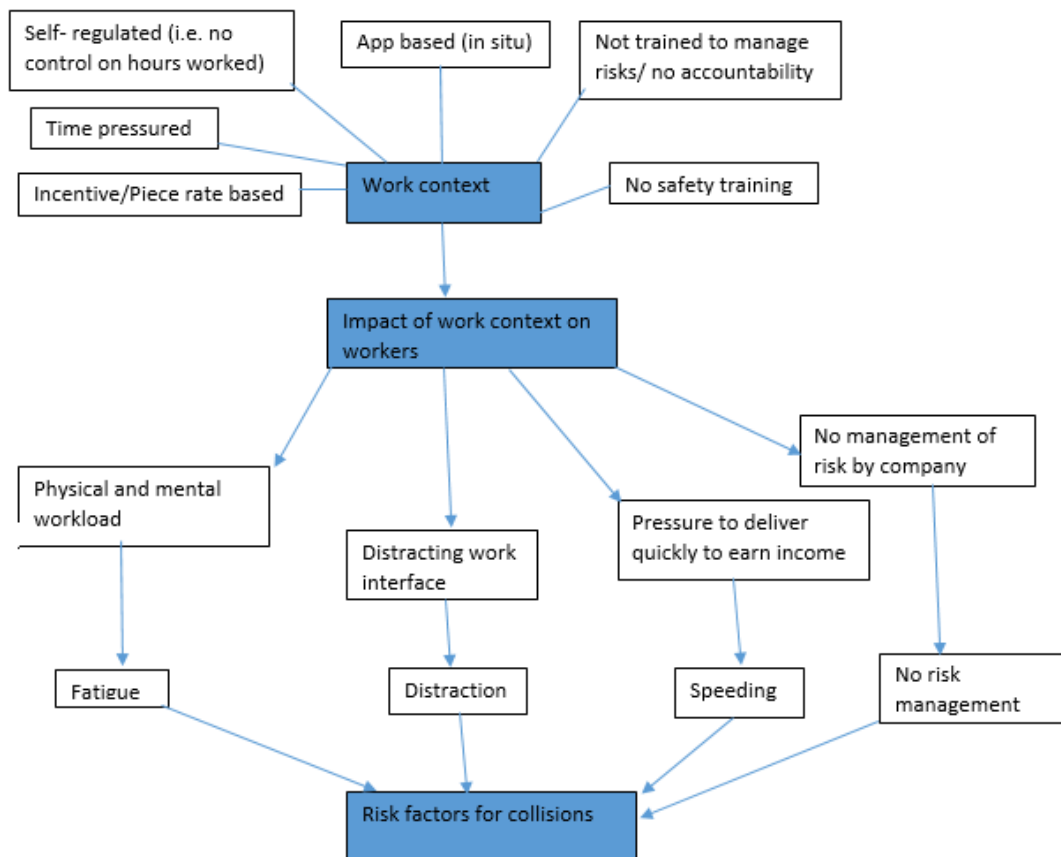
628 Many of the couriers we interviewed admitted to having a collision and experienced near misses several times each
629 day. From our online survey 42% said they had been involved in a collision where their vehicle had been damaged
630 and 10% of the total sample said that someone had been injured as a result and this was usually themselves. Three
631 quarters of respondents (75%) said that there had been occasions while working when they have had to take action
632 to avoid a collision. Worryingly, vulnerable road users (those on two wheels) were more likely to report being in an
633 injury collision and agreed that they performed risky behaviours compared to car/van drivers. Those who worked on
634 two wheels were generally younger than those driving cars/vans with half of pedal cyclists and a third of TWMV
635 drivers being 17-24 years old and generally represent a high risk group in terms of crashes. Furthermore, this high risk
636 group may also be incentivised by the companies to ride in poor weather conditions.

637
638 Many of the managers we talked to clearly felt the company ethos of being only interested in the life of the parcel and
639 not the life of the person who delivers it clearly conflicted with their own views of how to manage people and have
640 regard for their safety. Most survey respondents (67%) reported that the company did not suggest they had rest breaks
641 and did not give advice about using their phone whilst driving or riding. This lack of care was evident in our online
642 survey with only a round a quarter agreeing that the company cared about their safety but most (68%) feeling that the
643 responsibility for their safety should be shared by between them and the company. We have summarised the key
644 themes emerging from our study in the thematic map in Figure 7

645

Figure 7

Key road safety themes which emerge from research among gig economy drivers



4.1 Strengths and weaknesses

This study is one of the first to explore the road safety risks of people working as drivers in the gig economy. Arguably they were a hard to reach group as they work as individuals and not in work places and tend to organise themselves informally via social media forums – so our sample may represent a biased group because of wanting to join a forum to share grievances and experiences so may not be typical. We also do not know how different this group of drivers is to those actually employed by companies or compared to other drivers who do not drive for work.

4.2 Recommendations for policy and practice

Given the risks associated with the gig economy business model the company owners could consider adapting their model in a number of ways to improve the safety of workers. They should consider allowing couriers to sign up for a time block and be paid for their time not for a drop rate to depressurise the work. In addition they could consider establishing an acceptable drop rate which takes into account the time it takes to travel to the destinations within the speed limit and also the time it takes to perform administrative functions such as getting signatures and scanning/taking photographs of where the parcel has been left.

Mobile phones should not be allowed to cause a distraction and require handling to accept or reject jobs whilst driving or riding. Provided the driver and vehicle are compliant with mobile phone legislation when using the app, this could have a 'now stationary button' which would then allow jobs to be allocated and accepted. Less distracting interfaces need to be developed by the industry. Alternatively, if workers sign up for time blocks with a set number of jobs and pay this would reduce the need for sporadic messaging about available jobs.

Companies should consider appointing a person responsible for managing the safety of the people who provide an income for them. This should be provided at a local level to ensure that vehicles are road worthy with an up-to-date MoT where applicable, and properly insured for the job being done. This person should also be responsible for monitoring crashes and learning lessons from them. They should also ensure that workers are not be able to breach the current driving hour's restrictions applicable to other commercial drivers – this could be done by companies sharing data on driving and riding time via the licence number of the driver with built in alerts if time is exceeded on a

675 separate digital platform. Companies should consider the safety implications of incentivising vulnerable road users
676 (those on two wheels) to take additional risks by paying a higher rate to ride in poor weather conditions.

677 Companies should consider the free provision of equipment such as hi-vis jackets (fluorescent/reflective) and the
678 health and safety implications of carrying large back packs on two wheeled vehicles.

679 At a national level the monitoring of crash data on people who drive for work needs to be strengthened in order to
680 understand the real scope of the problem.

681

682 **5. Conclusions**

683 The nature gig work clearly led some couriers to experience impairment caused by fatigue and pressure to violate
684 speed limits and to use their phones whilst driving or riding. Many of these workers are high risk in terms of road
685 crashes as they are young, male and using vulnerable modes such as TWMV's and pedal cycles.

686 The emergence of the gig courier as a way to work to satisfy the public's appetite for fast delivery of goods, food and
687 people could give rise to a perfect storm of risk factors affecting the health and safety not just of the people who work
688 in the economy but for other road users.

689 Pressure from Government should make these service providers more aware of their employment obligations and
690 provide safeguards for people who generate income for them.

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693 participants for giving interviews and completing the online survey.

694

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