

# HEALTHY, HAPPY WORKERS? THE CONSEQUENCES OF COMMUTING BETWEEN NORTHERN IRELAND AND GREAT BRITAIN

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The recent economic downturn has seen many construction companies in Northern Ireland look to secure work in Great Britain to maintain their operations. A direct consequence of this has been an increase in the number of workers, both professionals and trades, who are now commuting to Great Britain for work; that is, spending at least five consecutive days away from home as part of their regular work schedules. Here, ten exploratory, in-depth semi-structured interviews were held with Northern Ireland construction workers currently travelling to Great Britain for work. Data was transcribed and analysed using cognitive mapping software. Findings revealed that workers struggle with tiredness and fatigue, suffer from depression and loneliness, missing family and friends, which can lead to increased drug and alcohol consumption, and use of prostitutes. The use of hotels also limits workers ability to cook for themselves and so eat healthily, as well as reducing social interaction, encouraging workers into hotel bars and pubs as shared social spaces, again influencing levels of alcohol and type of food consumption. Recommendations are made for the care of those on such schedules, to mitigate such negative impacts on worker health and wellbeing.

Keywords: commuting, health, NI, wellbeing, workers

## INTRODUCTION

Despite the fact that there have been considerable improvements in safety on United Kingdom (UK) construction sites in recent years, worker health and wellbeing remains cause for concern. In addition to physical occupational health risks, such as musculoskeletal disorders, lung problems and occupational cancers, the wider health consequences of construction work are becoming more apparent. For example, stress, depression or anxiety has now become a reporting category in its own right for construction worker health, with around 6,000 workers reporting problems each year (Health and Safety Executive 2017); making up 15% of all reported health issues. More worrying is the recently released statistics around male suicide, which found

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that males working in skilled construction trades, had more than double the risk of suicide than the male national average (Office of National Statistics 2017).

Although health and wellbeing is directly affected by work carried out on sites, the way construction work is structured also influences how workers live their lives outside of work: the now familiar concept of 'work-life balance' (Turner and Lingard 2016). Organisational factors such as unsocial work patterns, long travel and abnormal shifts (Miller *et al.*, 2007), remote job locations (Pinto *et al.*, 2011), short term employment and job insecurity (Frone 2013) not only indirectly affect worker wellbeing, they are also closely linked to the 'social determinants of health'; the reasons why people smoke, drink, take drugs or eat to excess (Wilkinson and Marmot 2003), which further contribute to poor health amongst the construction workforce (Sherratt 2017).

One of the more unavoidable aspects of construction work is the need to move its people to the physical places where the projects are being built, which results in an inevitably nomadic workforce (Fellini *et al.*, 2007). Long travel times to work frequently characterise the working day or, when the distance is too great for this to be sustainable, the use of temporary accommodation or 'lodge' for workers close to the work site is utilised. The ongoing negative economic situation in Northern Ireland has resulted in an increase in such commuting for Northern Ireland construction workers, as companies have looked towards Great Britain for work opportunities. In 2015, an average of 43% of Northern Ireland (NI) construction companies' workload was taking place outside of the country, mainly in England and Scotland (Price Waterhouse Coopers 2015). As a consequence, there has been a considerable increase in Northern Ireland workers, both professionals and trades, commuting for the purpose of work (Price Waterhouse Coopers 2015) and regularly living away from home; that is, on a weekly basis. This context provides a good opportunity to empirically explore the experiences of commuting construction workers, and better illuminate the specific ways in which commuting affects their health and wellbeing.

## Context

The consequences of long-term commuting and lodge on construction workers have been explored within country contexts other than the UK, where sheer scale and size of the landmasses often dictates such work patterns and shifts. For example, there is a considerable body of work from both Australia and Canada, where construction workers spend an extended period of time at the worksite, followed by a period of time on leave at home. In Australia such arrangements are known as Fly-In-Fly-Out (FIFO) (Blackman *et al.*, 2014), and work is organised using rotational schedules, often associated with longer durations of work and company paid transportation and accommodation. This work structure also enables 24hr/7-day working, and is usually typified by workers undertaking 12hr shifts in a 7-day on/7-day off rotation. Although most frequently adopted in mining and oil and gas industries, the increase in infrastructure projects in remote locations and the need for companies to secure work outside of their local regions or countries, as is now occurring in Northern Ireland, has seen an increase in such approaches within the global construction industry.

It must be recognised that some workers pro-actively opt to take on FIFO working arrangements, not least because they are usually better paid than normal, local work (van Ommeren *et al.*, 2000), where often the further the commute meaning the greater the salary (TUC 2015). The arrangement can also be seen as beneficial, because the extended time off that follows a demanding work period, can be used to spend more

time with families and friends (Houghton 1993), which can also be an attractive option.

### **Negative Impacts on Worker Health and Wellbeing**

However, such work patterns have been found to negatively affect worker health and wellbeing outside of the worksite. Traditional long working hours as found in construction, have already been determined to have a negative effect on workers' work-life experiences (Lingard *et al.*, 2010), and when commuting and living away from home are added to this, the consequences can become magnified (Oswald and Turner 2017).

With regard to work-life balance, research has shown that lodge arrangements can have negative impacts on worker's personal relationships (Yuk King *et al.*, 2012; Lingard and Turner 2017), as their time to spend with family and friends and ability to engage in social activities, such as sports teams or other social clubs, is significantly curtailed (Blackman *et al.*, 2014). When this is coupled with disrupted sleep patterns and other factors, it is perhaps unsurprising that issues around mental health, depression (Driesen *et al.*, 2011), and stress, emerge (Collinson 2008) as workers are subjected to loneliness, segregation from family and friends, and a lack of belonging within their immediate temporary community materialise (Clifford 2009).

Indeed, mental health issues are frequently raised as a concern for such workers, as the risks of such issues have been found to increase in workers undertaking overseas placements (Lockton 2015). Stress and tiredness are commonly reported consequences of such arrangements (Sullivan 2007; Lyons and Chatterjee 2008; Hanoa *et al.*, 2011), with stress a significant consequence of commuting for work, that despite better pay as a result of travel, the increase in stress is so significant that workers still have a lower life satisfaction, than those who do not travel for work (Stutzer and Frey 2008; Fults 2010). Given that the industry is male dominated, and that men are generally less aware of mental health issues (Cotton *et al.*, 2006) and so are more vulnerable to mental health concerns (WHO 2012), this should be cause for considerable concern.

Such work patterns also have negative impacts on workers' physical as well as their mental wellbeing (Hansson *et al.*, 2011; Karlström and Isacsson 2009; Lingard and Turner 2017), with research suggesting specific consequences as increases in the risk of ulcers, cardiovascular diseases, type 2 diabetes (Li *et al.*, 2011), gastrointestinal problems (Hanoa *et al.*, 2011), along with high blood pressure and obesity (Hansson *et al.*, 2011; Hoehner *et al.*, 2012). This could be linked to the fact that such workers have also been found to experience reductions and changes in their fitness routines, relaxation opportunities and social interactions (Hanoa *et al.*, 2011), which may in turn affect their eating and drinking habits, and so over time, lead to the development of physical problems highlighted.

This challenging work environment unfortunately also finds good fit with the social determinants of health (Wilkinson and Marmot 2003), and it is therefore unsurprising that commuting construction workers have been found to be substantially more likely to smoke and drink excessive alcohol and be overweight or obese (Yuk King *et al.*, 2012). Indeed, alcohol and drug use is a significant concern amongst construction workers, as it then has further impacts on family relationships (Storey 2001; Cunradi *et al.*, 2009; Oswald and Turner 2017).

Whilst the above does not paint a particularly pleasant picture of the potential consequences for Northern Ireland workers having to commute to Great Britain on a regular basis, it must be acknowledged that the industry is making efforts to mitigate and improve the mental and physical health of its workforce. For example, initiatives such as *Mates in Mind* (2018), which aims to raise awareness and improve mental health in the UK construction industry, are growing in scale and scope, in attempt to counter these issues within the workforce.

## **METHOD**

In order to begin to empirically explore the consequences for the health and wellbeing of those who commute from Northern Ireland to Great Britain for construction work, a purposive sample of those participating in such a process was secured through a snowball approach. All participants were construction workers based in Northern Ireland, who commute to Great Britain as part of their work for a period of five working days (one working week), or more, at a time, before returning to Northern Ireland for their leave. This sampling strategy resulted in the participation of ten construction workers, eight professionals (two project managers, one quantity surveyor, two health and safety officers, three engineers) and two skilled trades (a crane operator and a machine operator). All but one of the sample were male, and all but one were employed by a main contractor, the other being an agency worker. Although no claim is therefore made to generalisability from this sample, due to the nature of the phenomenon under examination and the exploratory nature of the research, it is considered acceptable and able to make a contextually relevant contribution to the growing body of knowledge in this field.

The exploratory nature of the work supports the use of qualitative data, therefore in-depth semi-structured interviews (Gillham 2005) were carried out with the ten participants, either face-to-face or via Skype, depending on the participants' location and availability. Questions were developed from the literature, taking themes from work carried out in other countries as key starting points, yet enabling the participants to lead the discussions to topics they felt were of significance. The interviews were recorded and data subsequently transcribed. A cognitive mapping software package was used in the analytical process. This software (*Decision Explorer V3.3.2*) is used to organise and assemble the data into clusters of relationships, producing a systematically organised map of linked concepts, which can then be evaluated using central, domain and cluster analysis, supporting further exploration through the lens of the literature.

## **FINDINGS AND ANALYSIS**

Once the map was developed, three methods of analysis were deployed: Central, Domain, and Cluster analysis. Domain analysis is where the content of the cognitive map is analysed to identify the concepts with the most links deriving from it; thus, indicating their prominence throughout the data as a whole. Central analysis identifies concepts with the highest number of networks evolving from them, these are known as central concepts and are the most influential within the model. Cluster analysis is where groups of concepts (or clusters) are identified which seem to stand alone, forming sub-themes within the data, the higher the number of clusters within a map, the greater its complexity.

### Central Analysis

Data from the ten interviews was initially analysed in turn, and developed into one cognitive map per interview, from which central analysis could be carried out; where the higher the 'score' the more influential the concept on the entire model. Central analysis was carried out on each map to generate the top five concepts as emerged from within the data. Following individual analysis, a combined cognitive model was generated from the data as a whole, to reveal the concepts throughout the sample. From this combined model, domain and cluster analysis could then be carried out. For reasons of replicability, the models are not included here, however the key data findings can be found in Table 1 below.

Table 1: Top 5 Concepts from the Combined Cognitive Map

Rank	Score	Concept
1	25 from 62	Accommodation
2	21 from 48	Loneliness
3	17 from 38	Regularly going to the gym provides workers with an alternative to going to the pub
4	17 from 35	Early morning flights to site
5	16 from 36	Activities and exercise help alleviate stress

### Domain Analysis

Results of the Doman analysis can be found in Table 2 below.

Table 2: Top 4 Concepts from the Combined Cognitive Map

Rank	No of Links	Concept
1	7	Increase in alcohol consumption and big drinking culture among workers
2	6	Accommodation
	6	Workers benefit from regular communication
3	5	Early morning flights to site
	5	Regularly going to the gym provides workers with an alternative to going to the pub
	5	Loneliness
4	4	Often Working Late
	4	NI companies competing with companies in GB without the additional overheads
	4	Reports of ulcers
	4	Male dominated industry with much bravado
	4	Poor sleep

### Cluster Analysis

Cluster analysis was also run on the combined cognitive model, but due to the large number of themes linked together, the Cluster 1 model was not able to reduce or focus the data further when interrogated. Due to the prominence of the concept of 'accommodation' within the two previous analyses, this concept was selected to create Cluster 2 and 3 models, grounded in 'Hotels' and 'Rented Accommodation', found in Figures 1 and 2. The type of accommodation used was frequently discussed by interviewees, and the Cluster analysis was able to demonstrate that this was also an

influential factor in respect of the habitual traits that workers had while working away from home - be they negative or positive to the individuals' routines.

Figure 1: Cluster 2 Analysis from the Combined Cognitive Map: Hotel Accommodation

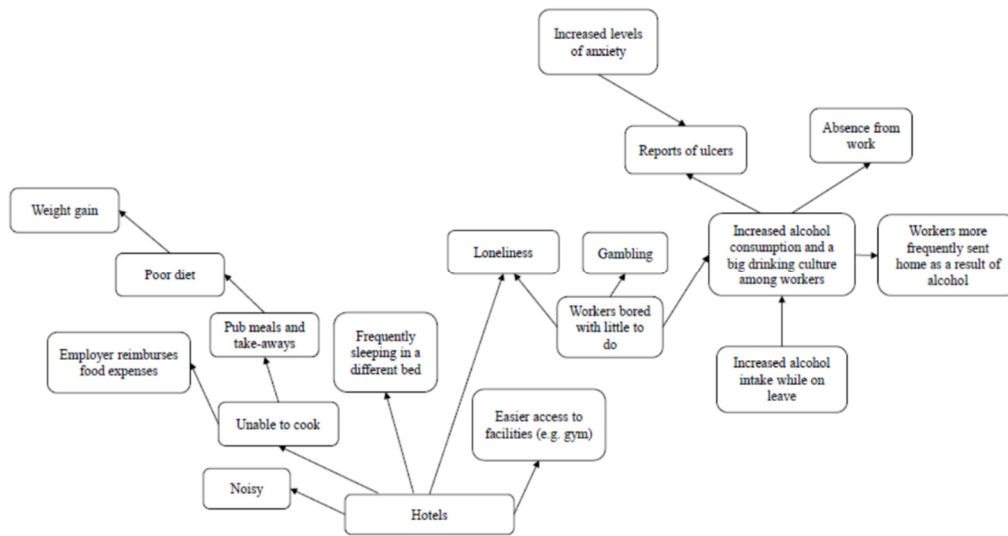
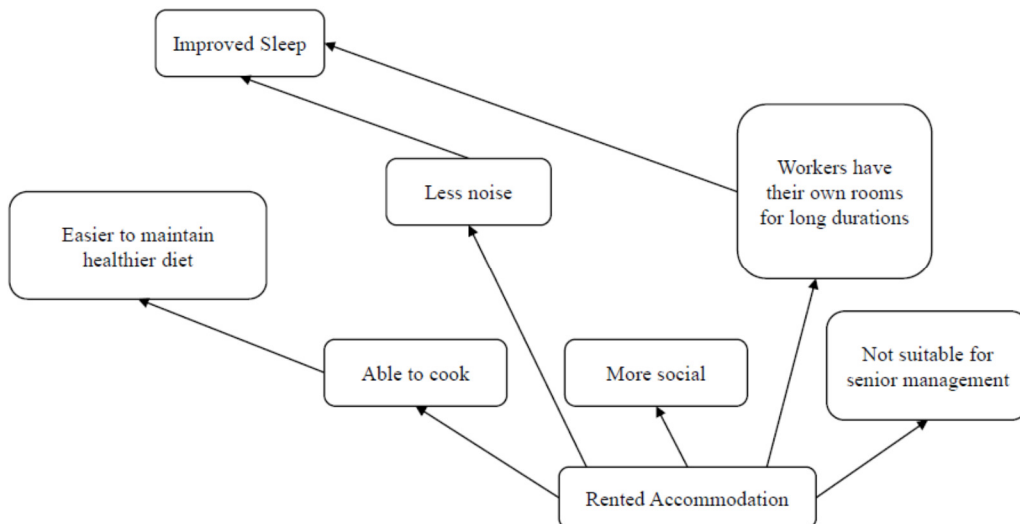


Figure 2: Cluster 3 Analysis from the Combined Cognitive Map: Rented Accommodation



## DISCUSSION

The data and subsequent analysis has been able to begin to empirically explore the experiences of construction professionals and trades who regularly commute between Northern Ireland and Great Britain for their work. Despite the fact that much of the existing literature in this area comes from countries other than the UK, the data generated in this study was able to find correlation and fit with concerns that have been generated elsewhere, and are now being felt by workers in this specific context. As the cluster analysis demonstrated, there is a high level of interconnectivity between the themes and concepts, as they emerged from both the literature and data.

Mentally, Northern Ireland workers felt they suffered from several indicators of poor mental health, including stress, fatigue and loneliness. Stress is a known consequence of such commuting patterns (Hanao *et al.*, 2011), and was associated by these workers with the early morning flights, including the need to manage and resolve frequent cancellations and delays, and the need to be able to fit quickly into the worksite team

on their first day back. Problems of fatigue, again caused by the exertions of travel and from poor sleep when away from home, were commonplace within the data, again as suggested by the literature (Stutzer and Frey 2008; Lyons and Chatterjee 2008). For this sample of workers, problems again arose on the first day of work following early morning flights, and increased as a consequence of poor sleep during the following consecutive days of work. As fatigue can have significant consequences, in terms of slower reaction times and decreased mental performance (Di Milia 2006) for construction workers who face high-hazard, this should arguably be avoided rather than built into workers' schedules.

Loneliness was a more complex concept, again prominent in the data and supported by the literature (Clifford 2009). This factor was developed through workers missing their family and friends, including important events and milestones in family life. Such feelings of isolation and loneliness are also likely to compound other mental health issues, with the potential for stress, fatigue and loneliness, potentially leading to depression (Driesen *et al.*, 2011). Despite the potential for virtual communication to 'keep in touch', issues of poor internet connection and long hours of work, created barriers to this potential mitigating solution.

Two distinct 'responses' to the issue of loneliness could be identified, and both were also associated with the type of accommodation workers were allocated, perhaps explaining its prominence in the data. For many workers, feelings of loneliness were overcome by spending time with workmates; however, hotel accommodation often lack social spaces that are not also a bar serving alcohol. Compounded by issues of boredom, workers felt they had little to do but drink with colleagues, and many felt their drinking had increased significantly since starting this work pattern. They had also experienced changes such as increased gambling and also the use of prostitutes; again, to alleviate both boredom and loneliness in the evenings. Hotel accommodation was also frequently associated with poor sleep and disturbances throughout the night, which in turn also compounded issues of fatigue and stress. The alternative to hotel accommodation was rented accommodation, shared with other workers, and this was seen by many as preferable, enabling workers to interact in a space without drink, often providing a better night's sleep in a quieter environment. Furthermore, in rented accommodation, workers were able to cook their own, healthier, food, rather than rely on hotel or bar meals.

Workers also suffered from a number of physical health complaints, with several noting they had put on weight since starting this pattern of work, because of their diets and lifestyles. Other health issues such as ulcers and gastrointestinal problems were also noted by the respondents. Going to the gym was seen as a positive response to poor health, and a good alternative to drinking in the evenings; however being able to secure short-term memberships was at times problematic, and membership of sports teams was often difficult to maintain and the costs attributable to the workers directly.

## **CONCLUSIONS**

This exploratory study has begun to reveal that many of the potential problems that are associated with FIFO patterns of work are being experienced by Northern Ireland workers as they commute to Great Britain for work. The consequences of such work are myriad, complex and interrelated, but do not help create healthy and happy workers. Issues around mental and physical health are compounded by the management of such working arrangements, and a key finding of this study is the importance of accommodation within this situation. Workers' accommodation can

either help them to manage the situation positively, by providing quiet rooms, shared social spaces and a kitchen for food preparation, or negatively, by encouraging drinking and poor food choices, as well as disturbed sleep.

It is recommended that organisations with a regularly commuting workforce acknowledge the importance of accommodation selection for their workers and make arrangements accordingly. Furthermore, robust provision should be made for mental health support systems, the potential for subsidised gym memberships to encourage healthier lifestyles, and a measure of flexibility in the work patterns themselves, to avoid additional stress over the commute and suitable periods of rest and time with family at home.

Further research is also recommended to better illuminate these issues and provide additional empirical support for such recommendations, to influence practice and ensure the impacts of such patterns of work on worker wellbeing are mitigated as much as possible.

## REFERENCES

- Blackman, A, Welters, R, Murphy, L, Eagle, L, Pearce, M, Price, J, Lynch, P and Low, D (2014) Workers perceptions of FIFO work in North Queensland, Australia. *Australian Bulletin of Labour*, 40(2), 180-200.
- Clifford, S (2009) *The effects of Fly-in/Fly-Out Commute Arrangements and Extended Working Hours on the Stress, Lifestyle, Relationships and Health Characteristics of Western Australian Mining Employees and Their Partners*. PhD thesis, School of Anatomy and Human Biology, The University of Western Australia, Perth.
- Collinson, D L (2008) Shift-ing Lives': Work-home pressures in the north-sea oil industry. *Canadian Review of Sociology*, 35(3), 301-324.
- Cotton, S M, Wright, A, Harris, M G, Jorm, A F and McGorry, P D (2006) Influence of gender on mental health literacy in young Australians. *Australian and New Zealand Journal of Psychiatry*, 40(9), 790-796.
- Cunradi, C B, Todd, M, Duke, M and Ames, G (2009) Problem drinking, unemployment and intimate partner violence among a sample of construction industry workers and their partners. *Journal of Family Violence*, 24, 63-74.
- Di Milia, L (2006) Shift work, sleepiness and long distance driving. *Transportation Research Part F: Traffic Psychology and Behaviour*, 9(4), 278-285.
- Driesen, K, Jansen, N, Van Amelsvoort, L and Kant, I (2011) The mutual relationship between shift work and depressive complaints - a prospective cohort study. *Scandinavian Journal of Work, Environment and Health*, 37(5) 402.
- Fellini, I, Ferro, A and Fullin, G (2007) Recruitment processes and labour mobility: The construction industry in Europe. *Work, Employment and Society*, 21(2), 277-298.
- Frone, M R (2013) *Workplace Interventions I: Drug Testing Job Applicants and Employees. Alcohol and Illicit Drug Use in the Workforce and Workplace*. Washington DC: American Psychological Association. 143-175.
- Fults, K K (2010) *A Time Perspective on Gendered Travel Differences in Sweden*. Licentiate Thesis, Department of Transport and Economics, Royal Institute of Technology, Stockholm.
- Gillham, B (2005) *Research Interviewing: the Range of Techniques*. Maidenhead: Open University Press.



- Hanao, R, Baste, V, Kooij, A, Sommervold, L and Moen, B E (2011) No difference in self-reported health among coalminers in two different shift schedules at Spitsbergen, Norway, a two years follow-up. *Industrial Health*, 49(5), 652-657.
- Hansson, E, Mattisson, K, Björk, J, Östergren, P O and Jakobsson, K (2011) Relationship between commuting and health outcomes in a cross-sectional population survey in southern Sweden. *BMC Public Health*, 11(1), 834.
- Health and Safety Executive (2015) *Health and Safety in Construction Sector in Great Britain 2014/15*. Available from <http://bit.ly/Sgu84d> [Accessed 27 February 2017].
- Hoehner, C M, Barlow, C E, Allen, P and Schootman, M (2012) Commuting distance, Cardiorespiratory fitness and metabolic risk. *American Journal of Preventive Medicine*, 42(6), 571-578.
- Karlström, A and Isacsson, G (2009) *Is Sick Absence Related to Commuting Travel Time? Swedish Evidence Based on the Generalized Propensity Score Estimator*. Working Paper No. 2010:3, *Swedish National Road and Transport Research Institute* (VTI).
- Lingard, H C, Francis, V and Turner, M (2010) The rhythms of project life: A longitudinal analysis of work hours and work life experiences in construction. *Construction Management and Economics*, 28(10), 98.
- Lingard, H C and Turner, M (2017) Promoting construction workers' health: A multi-level system perspective. *Construction Management and Economics*, 35(5), 239-253.
- Lockton (2015) *Our Analysis of Reporting and Related Employee Wellbeing Programmes across the FTSE 100*. Available from [http://s3-us-west-2.amazonaws.com/lockton-corporate-website/Images/Lockton\\_Mental\\_Health\\_Presentation\\_8.pdf](http://s3-us-west-2.amazonaws.com/lockton-corporate-website/Images/Lockton_Mental_Health_Presentation_8.pdf).
- Lyons, G and Chatterjee, K (2008) A human perspective on the daily commute: Costs, benefits and Trade-offs. *Transport Reviews*, 28(2), 181-198.
- Mates in Mind (2018) Available from <https://www.matesinmind.org/> [Accessed 18 March 2018].
- Miller, T R, Zaloshnja, E and Spicer, R S (2007) Effectiveness and benefit-cost of peer-based workplace substance abuse prevention coupled with random testing. *Accident Analysis and Prevention*, 39(3), 565-573.
- Office of National Statistics (2017) *Suicide by occupation, England: 2011 to 2015*. Available from <http://bit.ly/2C7MyRO> [Accessed 9 Feb 2018].
- Oswald, D and Turner, M (2017) Exploring health and well-being of construction workers on a large multinational construction project. *In: Proceedings of CRIOCM Conference: Advancement of Construction Management and Real Estate*. 702-709.
- Pinto, A, Nunes, I L and Ribeiro, R A (2011) Occupational risk assessment in construction industry - Overview and reflection. *Safety Science*, 49(5), 616-624.
- Price Waterhouse Coopers (2015) *Uncertain Outlook for NI Construction Industry*. Construction Employers Federation / PwC Survey, Available from: <https://www.pwc.co.uk/who-we-are/regional-sites/northern-ireland/press-releases/uncertain-outlook-for-ni-construction-industry-pwccef-survey.html> [Accessed 4 April 2018].
- Sherratt, F (2017) Shaping the Discourse of Worker Health in the UK Construction Industry. *Construction Management and Economics*, 36(3), 141-152.
- Storey, K (2001) Fly-in/fly-out and fly-over: Mining and regional development in Western Australia. *Australian Geographer*, 32(2), 133-148.
- Stutzer, A and Frey, B (2008) Commuting and life satisfaction in Germany. *Scandinavian Journal of Economics*, 110, 339 - 366.

- Sullivan, W (2007) Road warriors: tie-ups, backups, gridlock. The American commute has never been so painful. Is there any solution? *US News World Report*, 142 (16), 42-49.
- Turner, M and Lingard, H (2016) Work-life fit: Identification of demand and resource typologies within a systems framework. *Construction Management and Economics*, 34(6), 377-392.
- World Health Organization (2012) *Gender Disparities in Mental Health*. Geneva: WHO.
- Wilkinson, R and Marmot, M (2003) *The Social Determinants of Health - The Solid Facts, 2nd Edition*. Copenhagen: World Health Organisation.
- Yuk King, L, Lai Chong Ma, J, Ying Keung, C and Liping, H (2012) Risk and protective factors of marital adjustment to cross-border work arrangement of Hong Kong residents: The perspective of stationary spouses. *Journal of Comparative Family Studies*, 43(5), 715-730.