

IMPLEMENTING A COMPRESSED WORKING WEEK IN THE IRISH CONSTRUCTION INDUSTRY: PERCEIVED IMPACT ON HEALTH AND WELLBEING OF EMPLOYEES

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Irish construction professionals have long been acknowledged for working a traditional five-day work pattern, with inflexible work hours, while commuting extended hours, to and from work each day. The aim of this study is to investigate the compressed work week as an alternative work schedule, increasing hours worked per day and reducing working days, while still achieving the standard number of hours worked, under the lens of the perceived impact on health and wellbeing of these professionals. To ascertain the impact, six in-depth semi-structured interviews are conducted with construction professionals in the Irish construction industry. The results are transcribed, coded and themes highlighted under two overarching concepts; positive and negative impact of the introduction of compressed working week on health and wellbeing. The results, although based on the perceptions of a small sample, indicate potential positive impact on health and wellbeing include; more time with family/friends, more time for and better-quality rest and recuperation, less commuting time, increased leisure time and, longer weekends. However, several negative impacts on health and wellbeing emerged; potential exhaustion, particularly those with physically strenuous tasks, poor diet due to longer time on-site, increased difficulty working in winter months (cold/daylight), exhaustion post commute home after a long twelve-hour day and, not seeing family/friends due to late arrival home. Subsequently, the findings indicate a divergence of opinion with those interviewed, based on two core factors; the age of the interviewee and their profession; that is, if they experienced physical exertion, carrying out their daily tasks. Those of a younger age showed a preference for the introduction of a compressed working week, while those of an older age, and, carrying out physical tasks, were far less enthusiastic on the adoption of the revised working week. The results indicate that, although from a small sample size, the introduction of a compressed working week has the potential to increase employee well-being; however, due to the increased working day, the adverse effects of diet and exhaustion, both on-site but also when commuting home, must also be given due consideration.

Keywords: compressed working week, four-day week, health and wellbeing

INTRODUCTION

The Irish construction industry generally abides by a traditional work pattern. Construction professionals have long been acknowledged of working long and inflexible work hours, while commuting extended hours to and from work each day (Lingard, *et al.*, 2007). The compressed work week is an alternative work schedule,

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increasing hours worked per day and reducing working days while still achieving the standard number of weekly hours required (Ronen and Primps 1981). It is generally perceived that the work life of construction professionals is rather taxing on the body, both mentally and physically, with fatigue being one of the leading human factors, contributing to accidents on site (Adi and Ratnawinanda 2017; Lingard and Turner 2017). With the current prosperity in the construction sector, more labour-intensive work has become available. It is important to continue to monitor individual's health and wellbeing while working the long, taxing work weeks. A compressed working week has been implemented in many industrial sectors in Ireland and worldwide. Its aim is to increase the number of days away from work while still achieving its desired results. Ideally, employees will spend time resting and recuperating while spending time with family, in the hopes that they will be fresh and motivated once returning to work (Lingard, *et al.*, 2007). Extensive work has been put into demonstrating how compressed working weeks can impact the health of night shift employees. However, there is a gap in literature regarding standard working days and its impact. Based on this, the aim of this paper is to investigate the impact of a four-day work week on the health and wellbeing of construction professionals in Ireland. In doing so, this will provide an opportunity to gain insight into construction professionals current lifestyle and their perceptions on reducing the working week, detailing past experiences. Subsequently, it is possible to highlight both the benefits and disadvantages, from a safety, health and wellbeing perspective, of implementing a compressed working week in respect to health and wellbeing of construction professionals in Ireland.

This study will focus on a four-day 40-hour work week, in where the days worked will be Monday through Thursday. The general health of employees, primarily their self-reported physical health will be investigated. Construction professional's current lifestyle and lifestyle under the compressed working week will be examined. In addition, knock on effects of lifestyle will be surveyed, for example, diet, activity level, smoking, stress, alcohol and social factors. Construction professionals of different ages will be examined along with daily routines such as travelling, and leisure activities are also included. Productivity or output on the compressed working week will not be investigated or considered, nor will the financial impacts - the focus is on health and wellbeing. To achieve the aim, a qualitative approach is adopted, to gain the viewpoints of varying industry professionals. The findings will be analysed and coded, where theory generation via thematic coding will result in the identification of patterns in the results. Eight in-depth semi-structured interviews are carried out with construction professionals from the Irish construction industry. The results, although only based on a preliminary study, will provide the basis for the justification for further investigation on the potential introduction of a compressed working week within some sectors of the Irish construction industry.

COMPRESSED WORKING WEEK: A LITERATURE REVIEW

The compressed working week in the construction industry is an area containing limited research. However, there has been work done on the compressed working week in similar labour-intensive industries, with the emphasis being on productivity rather than general wellbeing. In this context, shift work is generally investigated more extensively when compared with that of traditional or standard work schedules. Kattenbach *et al.*, (2010) found that time restriction or the compressed work week is related to exhaustion and fatigue; however, the subsequent extra day off was not examined to investigate its implication for added rest and/or leisure time. The levels

of exhaustion were also subjective, and therefore, could not be accurately analysed. Furthermore, the standard eight-hour construction working day has generally been associated with exhaustion regardless (Hartmann and Fleischer 2005; Fang *et al.*, 2015). In a study by Milia (1998), it concluded that sleep was not significantly altered, when changing from an eight to a twelve-hour shift. Sleep on a twelve-hour shift initially increased by 0.51 hours, but returned to the baseline, once adapted. However, the study fails to consider the health implications for each work system, only focusing on perceptions and preferences and sleep duration rather than quality.

Bambra *et al.*, (2008) explored the effects of compressed working week interventions on the self-reported health and work-life balance of shift workers. The results suggest that there were little adverse health impacts on implementing the compressed working week. In addition, the study suggests that there is a relationship between improved work-life balance and improved health. However, the results were viewed to be somewhat inconclusive, where it suggested that more precise studies that measured objective health are needed. The study was also carried out on night shift workers, which may produce different results, as studies have previously showed the negative health impacts related to working night shifts (Costa 1996), but with no link to that of the current proposed compressed working week. Working longer hours may not directly impact physical health. However, it may have subsidiary effect, such as, poor diet, increased smoking and, alcohol consumption (Maruyama and Morimoto 1996). Furthermore, the study suggest that the increased work hours may result in higher stress levels and reduced quality of life in general. This study considers a five-day week, with in excess of ten-hour work days and therefore, does not consider the extra day off associated with the proposed compressed work week. Sparks *et al.*, (1997) suggested that there is a link between long work hours and poor health. The study focuses on overall weekly hours worked, and not on the distribution of work hours throughout the week, and more importantly, the resultant impacts. Therefore, the results are inconclusive, requiring further research.

The study also suggests that specific occupations must be looked at as different workloads are expected in different occupations. Cunningham (1989) examined the negative impacts of shift work, paying attention to the psychological and behavioural effects of coal miners working on a compressed shift schedule. By measuring blood pressure, respiratory functioning, reaction time, vigilance and auditory functioning, the study advocates that there is no negative impact on health, yet, there was an increase in subjective fatigue and tiredness. However, the results ignore social factors, such as alcohol, being an inhibiting factor. Much of the literature regarding the compressed work week fails to consider the impact on employees of different age groups. Tellier (1974) explores the effects of the four-day work week on the elderly. This system was generally preferred due to the extra day off leading to increased leisure time. However, fatigue was once again problematic. With that, the sample size was rather small. The introduction of a twelve-hour shift across fewer working days, led to the improvement in gastrointestinal disorders, such as heartburn, acid stomach and diarrhoea (Johnson and Sharit 2001). It is thought that the reduction of days worked enabled those to eat on a more traditional basis and therefore, eat healthier. The reduction in stress associated with less work days could also alleviate these disorders (Lees and Laundry 1989). In line with this, long commuting times were associated with poor sleep quality, exhaustion and low self-rated health, while it was suggested that mental health was not significantly associated with commuting (Hansson *et al.*, 2011). The cross-sectional study makes it hard to conclusively

attribute these health impacts solely to commuting, as other external factors are certain to contribute. The nature of the commute must also be carefully examined. It is important to not only consider the commute distance, but also to look at duration, traffic, time of commute, and nature of the roads and surroundings (Milia 2006). Lingard *et al.*, (2007) advocates that the work life balance of construction personnel is an important issue which directly correlates to occupational health, in which work-life conflict may contribute to burnout, mental health issues and substance abuse. The study found that a compressed work week was successful in improving the work-life balance of employees. It is worth noting that this study focuses on moving from a six to a five-day week. Furthermore, the main emphasis of the study is on performance and productivity rather than health and wellbeing, which was largely overlooked. A study by Martens *et al.*, (1999) focused on the relationship between flexible work schedules and general health and wellbeing. The study concludes that those working compressed work schedules were subject to more physical health problems, reduced sleep quality, and poorer general well-being, compared to those operating on a more traditional work schedule. The results from this study were gathered by patients communicating their health problems with their family physician. Therefore, results may be inconclusive as there may have been many factors contributing to the patient's illness, with their work schedule being just one of these factors. Brown *et al.*, (2010) stated that compressing the work schedule, aided in the ability to recover from the long and taxing work week, subsequently improved their work-life balance and general wellbeing. The longer break at weekends enabled individuals to engage in more favourable activities, which led to feeling refreshed and ready to return to work the following week. This study was conducted with professionals in the Australian construction industry, who were subject to a previous 6-day week; therefore, the findings may be difficult to apply in the Irish context. From analysing the literature, aspects relating to a compressed working week are evident; however, they focus on other industries and/or professions. The majority focus on extended work hours, also considering shift or night working, but not a reduction in the number of days work - a gap in knowledge that this paper aims to address. The current body of research lacks investigation into the application of a compressed working week in construction, and more so, in the Irish construction industry; hence the need for further investigation.

RESEARCH DESIGN

To explore the impact to health and wellbeing of a compressed working week in the Irish construction industry, a qualitative approach is adopted, founded on eight semi-structured interviews. In line with Lingard, *et al.*, (2008) and O'Riain, *et al.*, (2018), semi-structured interviews were applied, due to the flexibility of response obtained from the interviewees, as it fosters a conversational nature. The interviews are conducted in an open-ended format, to generate an in-depth discussion on themes or prominent issues. All pre-determined questions or relevant probes are tabled in the same style, order and responses noted accordingly, to improve replicability of result. The interviews are focused around six key themes, all of which were prominent and emanated from the following literature;

- Sleep (Milia 1998; Milia 2006)
- Recovery and Leisure (Maruyama and Morimoto 1996; Brown *et al.*, 2010; O'Riain *et al.*, 2018)
- Work life Balance (Lingard *et al.*, 2007; Bambra *et al.*, 2008)
- Burnout and Fatigue (Kattenbach *et al.*, 2010; Adi and Ratnawinanda 2017)

- Travel Impacts (Milia 2006; Hannon *et al.*, 2011; O'Riain *et al.*, 2018)
- Knock on effects (Ronen and Primps 1981; Maruyama and Morimoto 1996; Lingard *et al.*, 2008)

In total, eight interviews were conducted with construction professionals from the Irish construction industry. Participants were selected based on criterion selection; experience working within the Irish construction industry, expertise (manager/trade) and perspectives. Of the eight interviewees, five were male, three, female.

Interviewees ranged in age from early twenties to late fifties. Occupations include General Operative (#1), Apprentice Electrician (#2), Quantity Surveyor (#3), Site Engineer (#4), Project Manager (#5), Construction Manager (#6), Architect (#7), and a Block Layer (8). Average commute time to/from work each day was just over 1 hour each way. Finally, all interviewees currently work a standard five-day, 40-hour week.

Interviews were conducted both in person, but also using voice-over internet protocol, where the interviewee was located considerable distance from the interviewer and/or at the request of the interviewee. The interviewees were requested to provide their opinion or experience of the possible health and wellbeing benefits and/or detriments associated with working a standard five-day 40-hour week, compared to that of the proposed compressed four-day 40-hour week, detailing their current lifestyle.

Emphasis was placed on their opinions of where such an approach was adopted, how they perceived would be the impact on them, or others involved in the industry, in terms of mental health, physical health and general wellbeing. Given the similar nature of each interview, where the interviewees were given identical instructions, in the same order, and with the equivalent meaning or intent, data is therefore comparable. Data was extracted, by carefully studying the completed interviews scripts and subsequently coding the responses based on the themes identified above.

RESULTS

The combined list of factors from each interview are documented, where a positive symbol (+) denotes a positive factor, while a negative symbol (-), a negative factor. Each factor identified is grouped, based on the themes identified above. In total, six themes emerged, with a total of 42 factors (Table 1).

DISCUSSION

Theme 1 - Sleep

The first and most prominent theme that emerged from the interviews was the impact on sleep. Of the interviewees, half indicated that sleep would not be greatly affected by compressing the work schedule. With three expressing that people would be able to adjust to the new sleep routine. These results compliment the work of Milia (1998), where she states that “no significant differences were found for total sleep times between the systems.” Furthermore, half believe that the extra day off leading into the weekend could be used as a means of catching up on sleep, that may have been lost through incorporation of the compressed schedule. In contrast, just 2 participants suggested that the compressed working week would have a significant negative impact on the sleep of those involved, which may in turn lead to poor health. Moreover, 3 voiced concern as to how the new schedule may impair their sleep routine, such that, it would be more difficult to sleep Sunday and rise on the Monday.

Table 1: Themes and associated factors

(+) Extra day off would benefit trades	4
(+) More time off to deal with personal issues (Dentist, Doctor, etc.)	4
(+) More active over the weekend due to the extra time available	2
(+) More time to yourself and to improve your mental wellbeing	3
(-) No leisure time mid-week	2; 4; 5; 6; 7; 8
(-) Less likely to spend the extra time resting	1; 2; 4; 5; 7; 8
(-) Too tired at weekends to do anything	1
Work Life Balance	Interviewee #
(+) Happier with less days at work	1; 2; 4; 5; 7; 8
(+) Extra days with family including to go away at weekends	1; 2; 8
(+) Better quality of life	1
(-) Less time with family during the week	3; 6; 7
(-) More time at home which may not be good	2
Burnout and Fatigue	Interviewee #
(+) Body would adjust to longer days	1; 2; 5; 6; 7
(+) Longer days would not be issue with fatigue	4
(-) Increased strain on the body physically	1;2;3;5;6;7;8
(-) More accidents on-site	2; 3; 5; 6; 8
(-) More likely to become run down	7
(-) Longer days problematic for older individuals	4
(-) Longer days would be mentally exhausting	4
Travel	Interviewee #
(+) Less stress travelling outside rush hour	3; 4; 5
(+) No impact on commute where close to site	1; 7
(+) Less travel days would be good mentally	3
(+) No impact on safety while driving	1
(-) More dangerous commute due to being tired and/or rushing home	2;3;4;5;6;7;8
Knock-on Effects	Interviewee #
(+) Peoples habits will continue as before (diet, smoking, etc.)	3
(+) Extra day of healthier eating	4; 5; 8
(-) Increased alcohol/tobacco consumption	1;2;3;4;5;6;7;8
(-) Less substantial and healthy meals; more snacking and fast food	1; 2; 8
(-) More painkillers	8
Sleep	Interviewee #
(+) Not much impact on sleep overall	1; 3; 4; 5
(+) More sleep on days off	1; 3; 4; 7
(+) Would be getting up early anyway	1
(-) Extra day off would ruin sleep pattern	1
(-) Harder to sleep on a Sunday night	2; 8
(-) Easier to fall asleep during the week	7
Recovery and Leisure	Interviewee #
(+) More time to rest and recuperate	2; 3; 5; 6; 7
(+) More breaks beneficial	2; 5; 8
(+) More free time for leisure	3; 6; 8
(-) May under eat on longer days	2

With that, the extra day off left individuals more replenished and motivated for the upcoming week ahead. However, 6 participants raised concerns regarding the inability to engage in any leisure activities during the week, due to the lack of available time in the evenings, arising from the longer days. This was especially problematic for those who engaged in activities with specific time restraints, such as team sports, gym classes, and other schedule-based activities. Additionally, of those interviewed, 5 voiced apprehension as to how the extra day off would be spent. The overriding feeling was that the additional day off may not be spent resting and recuperating, but rather spent doing other and perhaps similar, taxing work.

Theme 3 - Work Life Balance

One aspect noted by 3 interviewees, believe that the extra day off at the weekends would be beneficial, given that the extra free time and time with family may alleviate stress. Over a third noted that the extra day would provide an opportunity to spend extra time with family and/or friends, or simply as an extra day away from the workplace, which would further aid mental wellbeing; a view shared by 6 of the candidates. Likewise, Lingard *et al.*, (2007) found that the increased personal and family time linked to the compressed schedule was able to improve “psychological wellbeing”. However, 3 interviewees believe that the longer days would limit time they get to spend with family and friends, which they deem to be very upsetting.

Theme 4 - Burnout and Fatigue

Of those interviewed, all but one expressed concern of the physical toll, the extra daily hours would have on the body; particularly for those undertaking physical work on-site. Given that the standard work week is already labour intensive and physically demanding for trades, the above-mentioned interviewees believe the extra hours work may be detrimental to health and wellbeing. Previous literature is consistent with this, in that, the numbers of hours worked each week is related to burnout, and in particular, emotional exhaustion (Lingard and Francis 2005; Lingard 2012). Given the possible knock one effects, such as fatigue and tiredness, 5 interviewees suggest that there would be more accidents, incidents and near misses on-site, due to decreased alertness and concentration. Furthermore 2 participants voiced concerns to working within a system which may change from daylight to darkness or vice-versa. Tellier (1974) found that the 4-day work week may be problematic for older individuals, stating that the extra physical toll may be harmful for those involved. However, only one participant raised concerns regarding this matter. Nevertheless, despite the fear relating to the physical impact on the body, 5 participants echoed that eventually individuals would adjust to the added work load undertaken each day, provided that the schedule is properly adhered to and adequate rest is taken during days off.

Theme 5 - Travel

The aspect of travel to/from work was also a prominent concept discussed. 37.5% were of the viewpoint that one less day of travelling each week, would be beneficial psychologically, given that people are often times commuting long distances each day in often uncomfortable and stressful traffic congestion. Furthermore, the opportunity to possibly travel outside of “peak hours” (provided the schedules enable this) would be more relaxing and preferable. In support of this, Hannson *et al.*, (2011) found links between extended travel time and poor health; thus, suggestion further, that reduced

travel time be considered for the betterment of health and wellbeing of those concerned. Interestingly, 87.5% felt that the longer hours each day and the subsequent fatigue and tiredness associated, may result in more dangerous journeys home after work, particularly towards the latter end of the working week. 33% of the aforementioned expressed concerns for those travelling longer distances, as they believe they may be more susceptible to crashes/accidents. Milia's (2006) study show that driving becomes more detrimental for those working extended hours (10 to 12-hour days). In addition, those who need to rise earlier to fulfil the work commitments, are at a greater risk of being involved in road accidents (Folkard And Barton, 1993).

Theme 6 - Knock-on Effects

All participants to the study shared the view that, for certain people, depending on their situation and preferences, the extra day off could result in greater alcohol consumption. However, there is limited research regarding the compressed working week and alcohol consumption; however, research indicating that long working hours are directly correlated to increased alcohol consumption (Spurgeon *et al.*, 1997). Additionally, increased smoking due to the longer work days was a viewpoint consistent with 75% of those interviewed. The consensus was that the longer work hours and the possible stress associated, would result in the increased consumption of cigarettes. Johnson and Sharit (2001) found that moving from an eight-hour to a twelve-hour shift, led to the reduction in gastrointestinal disorders, due to the ability to eat on a more traditional, and therefore, healthier basis. However, the findings from this study do not coincide with this. Half of those interviewed believe that the extra hours each day may result in poorer eating habits, in the form of; undereating, increased snacking, and less substantial meals. Of interest, only 12.5% of the interviewees agreed with the work of Johnson and Sharit (2001). Yet, 37.5% argued that it is also possible that people's habits will continue as before.

CONCLUSIONS

With health and wellbeing of those in the construction industry continuing to come into focus, this paper considers the introduction of a compressed working week, as one of many solutions. The results suggest that the positive impacts on health and wellbeing include; more time away from the workplace, more time for and better-quality rest and recuperation, less commuting time, increased leisure time and, more time with family and friends on days off. However, several negative impacts on health and wellbeing emerge; potential exhaustion, particularly those with physically strenuous tasks, poor diet due to longer time on-site, increased alcohol consumption on weekends, increased difficulty working in winter months (cold/daylight), exhaustion post-commute home after a long day and, the stresses associated with not seeing family/friends, due to late arrival home. The findings indicate that there are many advantages and disadvantages associated with adopting the compressed working week; however, it is unclear as to the degree to which the proposed system may improve/dis-improve the health and wellbeing of those involved. Interestingly, there was little differences in the respondents concerns and comments, regardless of their profession, such as physical concerns of those within a trade background; Block Layer (#8), versus more senior managerial positions; Project Manager (#5), Construction Manager (#6). However, there were differences in opinion based on age of the respondents, with those of a younger age, reflecting an increased desire for the introduction of a compressed working week, while also downplaying concerns relating to additional working hours mid-week. Although the findings are from a

small sample size, those who participated are from a wide array of professional backgrounds, with varying levels of experience, including gaining the viewpoints from both male and female respondents, to mitigate this issue, where possible. Further studies focusing on the objective health and wellbeing of construction personnel is required, including the perceptions of a more diverse and wider array of participants, in addition to a potential qualitative survey, to gauge a wider appreciation of the topic. Additional in-depth interviews and subsequent focus groups would also be of value, particularly given that the findings are based on the perceptions of just six individuals, to further reinforce the legitimacy of the findings. However, early findings support further investigation, as there are clear benefits to improving the health and wellbeing of those whom work in, what is widely considered, a difficult profession.

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