

# DO YOU WANT SOME SAUCE ON THAT? FACTORS INFLUENCING DIETARY HABITS AMONG THE IRISH CONSTRUCTION WORKFORCE

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The health, safety and well-being of the construction industry workforce has received increased attention in recent years, particularly when considering productivity on-site. However, one area that has often been neglected in construction health-related research is nutrition and diet, especially the factors influencing dietary habits. In Ireland, eating habits and lifestyle choices are changing, but when coupled with organisational factors, an unhealthy culture among construction industry operatives remains. Therefore, this study aims to identify and analyse the factors that influence dietary habits among on-site construction workers in Ireland, and document the effects, if any, diet has on their well-being and productivity. The research method undertaken is qualitatively based, encompassing ten semi-structured individual interviews with construction workers on two case study projects located throughout Ireland. Five main themes that influence dietary habits were identified: a lack of education when considering diet; time management when eating before and during working hours; peer pressure and being influenced what to eat by others; a poor standard and lack of eating facilities on-site; and the cost of food. Also, findings highlighted strategies that can be implemented to improve dietary habits, such as training and educational programmes to increase awareness of the health benefits of a balanced diet and lifestyle; improved eating facilities on-site; and employers providing subsidised nutritional meals. Overall, the key contribution of this research illustrates that many factors influence the dietary habits of Irish construction workers on-site, and with appropriate opportunities and suitable training, productivity can be increased, and the health and well-being of the workforce can be maintained, on construction sites in Ireland.

Keywords: culture, diet, health and safety, Ireland, well-being

## INTRODUCTION

Health and Safety (H&S) in the construction industry continues to receive increased attention, where the safety of workers is treated as a serious concern. According to Dempsey *et al.* (2020), overall standards have risen substantially with various training initiatives and programmes being implemented on-site. However, despite considerable improvements, the health and well-being of construction workers

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remains a cause for concern. As it is a highly manual industry, McGlone and Baker (2009) support that the construction industry has one of the highest rates of work-related illnesses across occupational groups. Injury and ill-health are susceptible, where workers face various issues related to health and well-being such as musculoskeletal conditions, mental health issues and physical health deterioration (Stocks *et al.*, 2011). Moreover, construction is a high-risk industry for work-related stress, and negative coping behaviours such as alcohol consumption, smoking and drug misuse is common (Bowen *et al.*, 2014). Another challenge, and an area of concern for occupational H&S is nutrition. Rohlman *et al.* (2018) note that work organisation and environment can affect diet and subsequently health, and nutrition plays an invaluable role in H&S performance and productivity improvements (Wanjek, 2005). Poor nutrition is one of many causes of accidents and injuries on construction sites (Okoro, 2015), and Groeneveld *et al.* (2011) concur that construction workers have poor health due to poor nutrition. Smallwood (2012) believes that research on the nutrition of construction workers is necessary as they are the most important assets in the industry, thus, research on the nutrition of construction workers is imperative (Okoro *et al.*, 2017).

However, on review of the literature, previous research fails to acknowledge and highlight the actual factors influencing dietary and nutritional habits among construction workers, particularly within the construction industry in Ireland. The lives of workers outside of work has great implications, and it is an area often taken for granted. Therefore, in the context of Irish construction site workers, it is necessary to identify and evaluate what factors influence their dietary habits, and more importantly, establish strategies that can be implemented to improve their dietary habits and overall health and well-being. To address these issues and to fulfil a gap in knowledge, it is essential to consider and generate results based on actual events that emerge, when studying an inherently complex and dynamic environment such as the Irish construction industry. Focusing on an important yet very neglected aspect of construction health, safety and well-being, this study aims to identify and analyse the factors that influence dietary habits among on-site construction workers in Ireland, and document the effects, if any, diet has on their well-being and productivity. This is achieved by incorporating a qualitative research approach, encompassing a literature review and semi-structured individual interviews, and manually assessing the resultant data using both coding and thematic analysis techniques. Thus, it is anticipated that in challenging this aim, this study will assist and aid Irish construction site workers to identify and assess the factors that influence their own dietary habits, enabling them to adopt strategies that will increase their productivity and improve their overall health and well-being.

### **Diet and Nutrition of Workers in Construction**

Food and nutrition are indispensable elements of health promotion and protection, aiding human development and promoting good quality of life (de Lima Brasil *et al.*, 2016). For construction workers, Bates and Schneider (2008) note that good nutrition is essential for maximum concentration to perform mentally and perpetually demanding tasks, which Okoro *et al.* (2018) believe will prevent the occurrence of incidents, accidents, injuries, and deaths on-site. However, poor nutrition has been linked to chronic disease among construction workers (Hanna and Markham, 2019), and can be a factor which impacts on workforce performance (Okoro *et al.*, 2017). Lingard and Turner (2017) found that construction workers are prone or vulnerable to the SNAPO health risk factors of smoking, nutrition, alcohol, physical exercise, and

obesity. Further research supports that the demanding nature of construction work contributes to unhealthy food choices (Devine *et al.*, 2007) and harmful alcohol consumption (MacKenzie, 2008). Rohlman *et al.* (2018) also identify that a lack of access to healthy food for purchase on or near most construction sites is a structural barrier to a healthy diet. Other organisational factors include remote job locations (Pinto *et al.*, 2011) and the transient and informal nature of the industry, which is prone to short-term employment and job insecurity (Wells, 2007). Furthermore, Okoro *et al.* (2014) argue that regular travel between worksites means workers do not have a central workplace, resulting in an inevitably nomadic workforce (Fellini *et al.*, 2007). These barriers indirectly affect their ability to maintain a nutritional diet, and further contributes to the poor health and well-being of the workforce (Sherratt, 2017).

Research on the factors influencing dietary habits and nutritional behaviour in the Irish construction industry is scant, however, studies have been undertaken elsewhere. In Australia, du Plessis (2012) found that convenience, availability, cost of foods and colleagues in the workplace influenced construction industry apprentices dietary behaviours. Investing in workers well-being via a balanced diet resulted in improved safety and productivity on-site in Oman (Umar, 2020), and using an online nutrition training programme to promote health among apprentices was established in the USA (Rohlman *et al.*, 2018). In South Africa, construction workers had poor nutrition as a result of financial constraints, lack of nutritional knowledge and limited access to healthy foods on-site or nearby (Kolver, 2012). McGlone and Baker (2009) support that in the UK, construction workers had poor dietary behaviours due to limited on-site catering facilities and rejected healthy food due to its ability to satisfy, resulting in the consumption of high fat foods (Okoro *et al.*, 2014).

However, Thabit *et al.* (2013) investigated the prevalence and predictors of diabetes and cardiometabolic risk among construction workers in Ireland and found that a lack of healthy dietary options in the workplace contributed to poor nutritional uptake. In a general report on ill-health among Irish construction workers, Armstrong (2000) concurs that employers should focus on health as well as safety, encouraging healthy eating options on-site rather than simply 'chips and a fry'. A full Irish breakfast (a fry), is considered to be one of Ireland's most well-known traditional dishes (Mac Con Iomaire, 2003), consisting of bacon rashers, pork sausages, fried eggs, white pudding, black pudding, and toasted bread (O'Sullivan and Byrne, 2020). Mac Con Iomaire (2014) identifies and describes the Irish nation's love affair with pig meat and highlights the emergence of the 'Jumbo Breakfast Roll' during the Celtic Tiger phenomenon. The ubiquitous nature of this iconic symbol has characterised an era of dashboard dining in Ireland (Sage, 2010), and its cultural relevance was further immortalised in song by Irish comedian Pat Shortt, whose song of the same name spent six weeks at No.1 in the Irish music charts in 2006. The song describes how the breakfast items are wrapped up in a demi-baguette, 'so it could be eaten on the go by the army of builders who were so busy during the property boom they could hardly stop to eat' (Mac Con Iomaire, 2014). The first verse and chorus aptly allude to many of the organisational factors highlighted (alcohol consumption, time, convenience):

"Well I wake up in the morning and I jump straight out of bed, Grab a hold of that luminous jacket and shake off my aul porter head, Haven't time for the fancy breakfast or put muesli in a bowl, I just head to the Statoil garage for the Jumbo Breakfast Roll"

"Two eggs two sausages two rashers two bacon two pudding one black one white, All stacked like a tower on top of each other and rolled up good and tight, If you're having

some tae the milk's over there and you'll find sugar in the bowl, Says she 'Do you want some sauce on that?' says I, I do in my roll"

Share (2011) supports that the 'Jumbo Breakfast Roll' has always been closely associated with the mobile construction industry workforce as it is typically purchased at a deli counter in a convenience store, often located on a petrol station forecourt, and its consumption is not confined to the morning, but can take place at any time of the day, which suits the busy schedules of construction workers. Thus, eating habits and lifestyle choices are improving, but when coupled with organisational factors, an unhealthy culture among construction operatives in Ireland remains.

## RESEARCH METHOD

This study concentrates on the dietary habits among on-site construction workers in Ireland, and it is part of a preliminary investigation which will contribute to both academia and industry. Archer *et al.* (2016) argues that critical realism is a viewpoint concerned with providing a philosophically informed account of science and social science, which can in turn inform an empirical investigation. Thus, considering the theoretical stance and reasoning this research is founded on, a critical realism approach is adopted. A subjectivist position is applied to the ontology, as the nature of the study mainly concerns the opinions and experiences of human participants (Curran *et al.*, 2018). Regarding research logic, abduction is selected, as it encourages expansive thinking and can answer the 'what' and 'why' questions (Malhotra, 2017). Moreover, Barratt *et al.* (2011) argue the merits of case study research, as it uses contextually rich data from bounded real-world settings to investigate a focussed phenomenon. On completion of an informative literature review, the research method consists of ten individual exploratory semi-structured interviews with a variety of construction professionals, based on two construction projects situated in the Munster region of Ireland. The selection of the sites and interviewees was based on a convenience sampling strategy, as it locates convenient cases who meet the required criteria (Robinson, 2014). The unit of study incorporates individuals, as it is the most commonly used unit in social science research (Guest *et al.*, 2012). Also, McIntosh and Morse (2015) recommend semi-structured interviews as they determine people's subjective reactions to situations and extend the researcher's knowledge on the topic.

Considering ethical issues, each participant was informed of the nature of the research, its purpose, and what the resultant data will be used for. An information sheet was provided to the interviewees along with a consent form which they had to sign, prior to the start of the interviews. Confidential information such as company names, addresses, client details, etc. are not disclosed, and the identities of those involved remain anonymous. Nine of the interviewees were male and one was female, with an age range between nineteen and fifty-six. This gender ratio of more males than females is unsurprising, as it is well documented that the construction industry is male dominated (Hanna *et al.*, 2020). The first construction project, Case A, was a large residential development in Co. Cork, with five interviewees. Interviewee 1 is a Project Manager; Interviewee 2 is a Graduate Site Manager; Interviewee 3 is a Subcontracted Tradesman (Builder); Interviewee 4 is a General Operative (Builder); and Interviewee 5 is an Apprentice Builder. The second construction project, Case B was a large industrial development in Co. Limerick, with another five interviewees. Interviewee 6 is a Site Manager; Interviewee 7 is a Quantity Surveyor; Interviewee 8 is an Administration Manager; Interviewee 9 is a Subcontracted Tradesman (Electrician); and Interviewee 10 is a General Operative (Building Labourer). All ten

interviews were recorded in handwritten note format, with an average interview duration of twenty minutes, taking place on location, in the respective site office of each project.

## RESULTS AND ANALYSIS

The individual interviews commenced by gaining general background information from each participant, followed by a candid conversation about their own daily diet, and their dietary habits whilst working in the construction industry. The semi-structured interview process allowed the participants to answer the questions initially posed but provided the opportunity to elaborate on issues that they felt were necessary to discuss further. Findings from the ten interviews were combined and qualitatively assessed and summarised using both coding and thematic analysis techniques. Saldaña (2015) argues that in qualitative inquiry, a code is most often a word or a short phrase that symbolically assigns an attribute for a portion of language-based or visual data. Silver and Lewins (2014) suggest that a starting point to coding is cutting through the data, and Hilal and Alabri (2013) support that conventionally, coding is done by hand to categorise the data. As part of the initial analysis, the key words and phrases from the interview transcripts were highlighted, in preparation for the thematic analysis. Braun and Clarke (2006) identify that thematic analysis involves identifying patterns to make meaning and gain insight into a contemporary phenomenon. Analysis of the interviews was conducted by establishing emerging themes from the transcripts, including key words and topics for discussion. A concise summary of the key findings is illustrated in Table 1, with many areas covered such as individual diets, cooking habits, breakfast routines, commutes to work and the standard of welfare facilities for eating on-site.

*Table 1: Key Areas Discussed*

Topics for Discussion	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Consider themselves to have a healthy diet	x	x	x		x	x	x	x		x
Cook their own food	x	x	x		x					x
Skip breakfast	x			x		x	x	x		
More than a 30-minute commute to work	x	x		x			x	x	x	x
Insufficient amount of time to eat lunch	x	x	x	x	x	x	x	x	x	x
High standard of on-site welfare facilities		x					x		x	
Cost of food influenced food choice		x	x	x	x	x	x		x	x
Consume alcohol weekly			x	x	x	x	x	x	x	x
Uneducated on benefits of a healthy diet	x	x	x					x	x	x
Choice of taste over a healthier option	x		x	x		x		x	x	x
Eat a 'fry' at least once a week	x			x		x	x	x		x
Influenced by the food choices of others	x		x	x		x		x		x
Consider work colleagues to have a poor diet	x	x	x	x	x	x	x	x	x	x

It is important to note that the findings from the individual interviews are specific to this research; thus, not a generalised view. Nonetheless, this study provides a foundation to explore further, supporting continuous research into diet and nutrition, in particular, the habits of construction workers in Ireland.

## DISCUSSION

### Theme 1 - Lack of Education

Six out of the ten interviewees agreed that they were not educated enough on the benefits of a healthy diet, and this was particularly evident among the older participants. Interviewee 9, who has over thirty years industry experience, stated that during his training days as an apprentice, no-one ever advised him on the benefits of a

nutritional diet, and he admitted to being 'ignorant' to any health-related initiatives on-site. Hanna *et al.* (2020) agree that for the older generation of construction workers, eschewing healthy diets and help-seeking is normative, which is perhaps linked to a conventional image of tough masculinity. The Graduate Site Manager, a recent construction management graduate from a respected Irish university, also claimed that the topic of nutrition was never taught or discussed during his four years of study. McNulty (2013) stresses that the first step towards improving nutrition and encouraging behavioural change is through nutritional knowledge and education. Wanjek (2005) corroborates that workplace campaigns are key in educating and motivating employees to eat well, and Groeneveld *et al.* (2011) identify motivational interviews and counselling sessions to encourage male construction workers to increase their fruit intake (Okoro, 2015).

### **Theme 2 - Time Management**

Time to eat at any time of the working day was a key issue identified by the interviewees. 50% of the participants stated that they skip breakfast regularly, with reasons ranging from having a long commute to work and preferring to stay in bed longer for a few extra minutes. 70% revealed that their commute to work in the morning was greater than thirty minutes, with some travelling over an hour to get to the site. Kolver (2012) agrees that construction workers have poor nutrition due to long and time-consuming travel to workplaces. Interestingly, all ten interviewees stated that they have insufficient time to eat lunch on-site. Interviewee 4 remarked how he would go to the nearest shop most days to grab some hot food such as chicken nuggets and chips from a deli counter and eat it in the van as he drove back to the site. Sage (2010) supports that a culture of dashboard dining exists in the Irish construction industry, and workers who do not have enough time to eat rely on sweets, fizzy drinks, burgers, and fries (Okoro *et al.*, 2014). Thus, Wanjek (2005) states that employers should map out more time for lunch breaks, so the works can have enough time to eat.

### **Theme 3 - Peer Pressure**

Workers feeling pressurised by colleagues in choosing what to eat was an interesting factor identified, with 60% of the participants being influenced by the food choices of others. Interviewee 2 (the Graduate Site Manager) discussed that because of his involvement in sports outside of work, he would bring his own healthy lunch with him on most days, but this did raise eyebrows among the older workforce. Similarly, Hanna *et al.* (2020) found that contemporary approaches to food intake on-site were still viewed as alien in the culture of construction. Interviewee 10 stated that he would go for breakfast with his colleagues some days even though he may not have always wanted to, but he did not want to feel left out among his peer group, or have his colleagues talk negatively about him for doing so. The food choices of workers are influenced by their poor dietary role models, including their peers and co-workers (du Plessis, 2012). Okoro (2015) agrees that one can be peer-pressured into eating healthily or unhealthily.

### **Theme 4 - Poor Eating Facilities On-site**

Only three out of the ten interviewees believed that the eating and general welfare facilities on-site were of an acceptable standard. Interviewee 8 (the Administration Manager and the only female participant), revealed that she ate her lunch at her desk in the site office, as the canteen area was too dirty and lacked the proper facilities. McGlone and Baker (2009) concur that construction workers have poor dietary

behaviours due to limited on-site catering facilities, and Okoro *et al.* (2014) agree that nutrition also has to do with food hygiene and safety. The provision of welfare facilities such as hot water for washing before eating, safe drinking water, space to prepare and eat meals, as well as food storage units such as refrigerators, cupboards and microwaves are very essential. Thus, the availability of resources such as on-site facilities significantly influences the choice of foods eaten on construction sites (Wanjek, 2005).

### **Theme 5 - Cost of Food**

The cost of food was another prominent factor identified and 80% of the interviewees discussed how the cost of food influenced their food choice. Interviewee 5 highlighted how food items that may seem low in price, add up to quite a large expense over a period of time, 'the price of a coffee and bacon sandwich in the morning might be €5, which is €25 a week, and that doesn't include the days you go for lunch. If you want a reasonably healthy lunch like a salad or sandwich, this could be €10 or more with a bottle of water...it soon adds up!'. According to du Plessis (2012), the cost of healthy food for apprentices in particular is prohibited given their low apprentice wages. The General Operatives acknowledged that they sometimes spent their money on cigarettes and tobacco at lunchtime instead of food, and the Building Labourer admitted that he looked forward to the end of the working day the most, 'I would go to the pub most evenings for a few pints, and then for a feed (dinner) at the local chipper (takeaway) afterwards'. This reflects the findings of Lingard and Turner (2017), who state that construction workers are prone to health risk factors of smoking, nutrition, and alcohol. Nevertheless, Wanjek (2005) and Okoro *et al.* (2017) support that construction employers and managers can commit to healthy eating through environmental and organisational changes on-site or nearby, such as increasing the availability of healthy foods in canteens, arranging with local food vendors to sell healthy food options at reduced prices and collaborating with organisations to provide healthy foods on-site.

## **CONCLUSION**

Essentially, this exploratory study focuses on factors influencing dietary habits among the construction workforce in Ireland. The safety of the construction workforce has thankfully received great attention in recent times; however, the health and well-being of all construction workers remains a cause for concern. Many organisational factors contribute to the overall well-being of workers, with nutrition playing an invaluable role in occupational H&S performance and productivity improvements. Considering the results captured from the ten individual interviews in this research, five key themes emerged, including a lack of education when considering diet; time management when eating before and during working hours; peer pressure and being influenced what to eat by others; a poor standard and lack of eating facilities on-site; and the cost of food. When analysing these influencing factors, counteractive strategies also emerged, including educational and training programmes to increase awareness of the health benefits of a balanced diet and lifestyle; improved eating facilities on-site; and employers providing subsidised nutritional meals for site staff.

However, the findings from the ten individual interviews are specific to this research; and only a concise, subjective view of the topic is produced, thus, not a generalised view. Nonetheless, this study provides a solid foundation to advance and explore further, supporting continuous research into the dietary habits and influencing factors on site workers on construction projects in Ireland. The findings in this study can be

developed further, and it is anticipated that a broader analytical context can be addressed in a subsequent journal publication, where additional theoretical points of departure and areas of discussion can be articulated. It is proposed that further studies consider the contribution that training bodies and educational institutions can make to the current and emerging workforce, to encourage and promote healthier nutritional choices. Also, further research investigating the issues surrounding the lack of proper welfare facilities on-site is suggested, and the contribution the employer can make to improve overall standards. To gain a richer understanding of current dietary habits in the industry, alternative qualitative research methods can be implemented in further research such as action research and ethnography. It is recommended that more individual interviews and focus groups seminars are considered for qualitative analysis, and a sequential selection strategy is incorporated using criterion selection, such as quota and random sampling. From a quantitative perspective, a questionnaire survey could be composed and distributed to a larger sample across other regions of Ireland to further strengthen the research. Still, this study provides a foundation for informing and confirming the validity and necessity of the research and ensuing investigation going forward. Overall, the key contribution of this research illustrates that many factors influence the dietary habits of Irish construction workers on-site, and with the right opportunities and appropriate training and educational awareness, productivity can be increased, and the health and well-being of the workforce can be maintained, on construction sites in Ireland.

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