



Research Article

# The State of Occupational Health and Safety in the Maltese Construction Industry and the Way Forward

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**Abstract.** Construction is the most dangerous sector in Malta. Most fatal accidents at work occur in this sector, while it also has the highest annual number of non-fatal accidents per capita. To date, no studies have analysed the state of this sector from the perspective of occupational health and safety practitioners working in the construction industry. This qualitative study aims to do this while identifying strategies to improve standards. Structured interviews were conducted with twelve qualified participants, all of whom worked in the construction industry. The resulting data was analysed thematically. All participants agreed that the state of health and safety on construction sites in Malta has improved over time. Participants identified several challenges, including unregulated developers who have no interest in health and safety, a lack of safety standards in the construction industry, friction between practitioners and the Occupational Health and Safety Authority, issues regarding enforcement, a lack of training for construction workers and precarious working conditions for migrant workers. In light of the findings, short-term and long-term solutions are suggested. These include increased enforcement, alternative penalties, better resources for the involved inspectorate, adequate training, the licensing of contractors, and construction standards development.

**Keywords:** Occupational Health and Safety, Construction Industry, Occupational Accidents, Enforcement, Standards, Inspectorate.

## 1 Introduction

In 2020, construction accounted for 21.5% of fatal accidents at work in the European Union (EU), followed by manufacturing (15.2%) (Eurostat, 2020). The situation is no different in Malta, where construction has the highest fatal accident rate per capita (Fiorini et al., 2024;

National Audit Office [NAO], 2016, 2020). Locally, non-fatal injuries are most frequent in the manufacturing industry. Injuries in the manufacturing industry have decreased significantly over the years, most likely due to the decline in employment in the sector and an improvement in safety levels (Fiorini & La Ferla, 2021). However, per capita, non-fatal injuries are more common in construction as well as transport and storage (Fiorini et al., 2024; NAO, 2016, 2020), but here too accidents appear to be declining (Fiorini et al., 2024). Despite progress being made in non-fatal accidents in construction (Table 1), it should be noted that the statistics may not give a true picture of the sector. It has previously been claimed that over a 12-month period, 75% of occupational injuries and illnesses were not reported to the competent authorities (Occupational Health and Safety Authority, 2011).

Table 1 shows that 48 work-related deaths were reported in Malta between 2016 and 2022, of which 34 (71%) occurred in the construction industry (National Statistics Office [NSO], personal communication, 22 March 2023). Their increasing frequency prompted a British citizen to launch an EU Parliament petition in 2021 claiming that Malta was not meeting the required Occupational Health and Safety (OHS) standards. Following this petition, the European Parliament's Committee on Petitions requested more information on the state of OHS in Malta. In its response, the OHSA argued that Maltese legislation was in line with EU regulations, that the number of accidents and fatalities had decreased, while resources for enforcement had increased (Xuereb, 2022). Attention to the sector increased further following the tragic death of a young worker, Jean Paul Sofia, on a construction site in December 2022. Despite initial resistance from the government, public demonstrations, led by the victim's mother, resulted in a public enquiry being held. This investigated the circumstances of this particular accident and more general aspects related to safety in the construction industry. The

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Year	Total number of persons employed	Workers in the construction industry	Injuries in the construction industry	Percentage of workers injured in construction	Fatalities at work	Fatalities in construction sector
2016	208,132	14,063	473	3.36 %	7	4
2017	220,489	15,186	485	3.19 %	1	1
2018	232,306	14,578	482	3.31 %	4	4
2019	251,398	16,149	444	2.75 %	3	3
2020	261,839	15,195	407	2.68 %	8	4
2021	266,226	17,176	389	2.26 %	9	9
2022	283,341	17,526	362	2.07 %	16	9

Table 1: Injuries and Fatalities covering the years 2016-2022 (NSO, personal communication, March 22, 2023).

public enquiry uncovered several failings within the sector and its regulation, including the lack of consultation between stakeholders, including health and safety practitioners and the organisations that regulate aspects of the construction industry (Zammit McKeon et al., 2024).

This study aims to investigate the perceptions of health and safety professionals on the current state of occupational health and safety in the Maltese construction industry and identify potential improvement areas.

The objectives of the study are therefore:

1. To determine if the state of OHS in the construction industry has changed over the years.
2. To identify the perceived problems and challenges currently faced by health and safety practitioners.
3. To explore the perceived improvements that can be made in the construction sector in Malta.

## 2 Literature Review

### 2.1 Legislation

Chapter 424 of the Laws of Malta, the Occupational Health and Safety Authority Act (XXVIII of 2000), established the OHS, listed its responsibilities and several Legal Notices (L.N.) were promulgated under this Act. L.N. 88 of 2018 Workplace (Minimum Health and Safety Requirements for Work at Construction Sites) Regulations [S.L.424.36] is of particular interest to this study as it sets out minimum requirements for construction sites. This legal notice replaced L.N. 281 of 2004, which previously regulated safety on construction sites (Fiorini, 2018).

L.N. 88 of 2018 lists the client, the contractors and the project supervisor (PS) as construction site stakeholders. The client, who is any legal or natural person for whom a construction project is carried out and who is legally responsible for a project, must appoint or assume the role of a PS. The PS is “any natural or legal person responsible

for health and safety supervision of a project, appointed by a client”. A PS must apply the prevention principles of the Act and other subsidiary legislation as appropriate. Other duties include coordinating contractors or subcontractors, as well as site visits and meetings to monitor the work. OHS practitioners work on construction sites when hired by the client as PSs, independent consultants or full-time employees, usually for large construction companies (on a full-time or contract basis).

### 2.2 Key Stakeholders

In this section, the stakeholders listed in L.N. 88 of 2018, the clients, contractors, and OHS practitioners, who regularly take on the role of PSs, are discussed further. Masons are also discussed, as they are often involved and on the receiving end of many construction accidents.

#### 2.2.1 Masons

Masons require a licence to work. According to Article 96 of the Code of Police Laws, the Masons’ Board is authorised to examine all applicants for a mason’s licence. However, the Kamra tal-Periti (Chamber of Architects and Civil Engineers) (2019) argued that the requirements for this licence are not specified. Among the shortcomings highlighted are the unspecified skills and formal qualification requirements and the lack of a public register of licensed masons, which calls into question the training of masons in modern construction technologies, materials and practices. This poses a risk to masons themselves, their work colleagues and the public (Kamra tal-Periti, 2019).

#### 2.2.2 Clients and contractors

Clients can be categorised according to their size. Smaller clients are often unaware of their safety obligations, while large clients regularly work on large construction sites and take an active role in prevention. These cli-

ents are more likely to believe that good health and safety standards save money in the long term (European Commission, 2011). In fact, the OHSA 2013, 2014 reports that larger construction companies are more committed to OHS, invest more in safety and that large projects no longer have high accident rates despite more workers and longer duration (OHSA, 2013, 2014). This is consistent with European findings, where an EU-wide enforcement campaign found a direct correlation between construction site size and compliance. Large construction sites (with more than 50 employees) had higher compliance rates than smaller construction sites (European Commission, 2011).

Clients can also impact OHS culture via their choice of contractors (European Commission, 2011), including during the procurement stage (Young et al., 2019) when clients can require contractors to submit fully costed complete OHS documentation. Failure to do so can cause cost versus safety issues (Young et al., 2019). In fact, to improve OHS attitudes, the European Commission (2011) suggests that national legislation should require OHS preventative measures in tenders (European Commission, 2011). The Karmra tal-Periti has been advocating for the registration of contractors based on regulations and mandatory training for several years. Studies of registration schemes from other countries have shown mixed results in terms of their impact on quality and safety (Kleiner, 2015; Mitchell, 2020; Vokes & Pye, 2013).

### 2.2.3 OHS practitioners

In addition to other tasks, PSs must consider occupational health and safety on a construction site during project planning and execution, draw up an OHS plan and monitor its implementation.

OHS practitioners have a problematic relationship with the OHSA. A Criminal Court decision in 2022 found that informing the client and workers on site of violations is insufficient to fulfil a PS's role, and indirectly implied that PSs are to report OHS shortcomings to the OHSA (Gauci & Magri, 2022). Conversely, OHS shortcomings on a construction site can lead to PSs being prosecuted (Zammit McKeon et al., 2024). Furthermore, by reporting deficiencies to the OHSA, PSs' are essentially reporting their employer.

A performance audit by the NAO (2016) recommended that the legal responsibility for appointing a PS during the design phase should be shifted from the client to a more knowledgeable stakeholder such as designers, engineers and/or architects, while the contractor should select the PS during the construction phase. It has also been argued that unqualified individuals were performing the role of a PS (NAO, 2016; Zammit McKeon et al., 2024) and

that the OHSA should maintain a register of competent PSs and only they should be allowed to undertake the role (NAO, 2020). The Malta Occupational Safety and Health Practitioners Association (MOSHPPA) has proposed that the OHSA randomly assign PSs from a register after developers and contractors have paid an administration fee (Times of Malta, 2022). This would provide OHS practitioners with some protection from vindictive developers.

The occupational health and safety profession is not properly regulated in Malta. Malta only maintains a voluntary register for such practitioners that is managed by the OHSA (Fiorini & La Ferla, 2023). Currently, the minimum requirements for inclusion within this register include possessing an undergraduate diploma in OHS, relevant experience and competence in the field, and continued professional development since obtaining the qualification (OHSA, n.d.-b). Over the years, OHS has developed into a complex field where practitioners must consider various factors that may influence workers' safety and their physical, mental and social well-being. In view of this, the Centre for Labour Studies at the University of Malta which has offered a diploma in OHS since 1997 commenced offering a degree in the topic in 2016. It has been argued that a qualification should be mandatory to work in OHS and that the minimum qualification for new graduates should be a degree (Fiorini & La Ferla, 2023).

## 2.3 Known risk factors

A number of factors are known to influence accident rates and standards within construction. Three key factors are discussed in the following section; migrant workers, a lack of training and levels of enforcement.

### 2.3.1 Migrant workers

Migrant workers are among the most vulnerable members of society, often employed in 3D jobs: dirty, dangerous and demanding (sometimes degrading) jobs that are often hidden from the public and policymakers unless and until accidents happen (Quandt et al., 2013). Migrant workers earn less, work longer hours and have worse working conditions than non-migrant workers (Gammarano, 2020; International Labour Organization [ILO], 2015; Moyce & Schenker, 2018; Salminen, 2011). They often take more risks, are likely to work without training or personal protective equipment (PPE) and are less likely to voice their concerns about unsafe conditions (Flynn, 2014; Ronda Pérez et al., 2012).

Over a twenty-year period, almost 30% of fatal accidents in Malta have involved foreign workers (Fiorini et al., 2024). The proportion of non-fatal and fatal accidents at work among migrant workers is increasing (Fiorini & La Ferla, 2021), suggesting that more migrants are working in hazardous occupations. The opposite is true for

Maltese workers, increasing the reliance on migrant labour in the industry (Central Bank of Malta, 2019).

Malta rarely retains foreign labour. 25% of foreign workers entering the Maltese labour market leave within the first year, while 50% leave one to two years later (I. Borg, 2019). As a result, companies often have to hire new employees and are less likely to invest in training (I. Borg, 2019). However, adequate levels of OHS depend on the provision of appropriate training for migrant workers (O'Connor et al., 2014). Injury rates appear to decrease proportionally with the integration of migrant workers into the local society. According to Salminen (2011), migrant workers generally had a higher injury rate than native workers in the first five years of employment, but after five years it fell below that of native workers.

A leading issue amongst migrant construction workers internationally (Shepherd et al., 2021) and in Malta (Horvat Cardona, 2023) is poor language competency. Language and literacy problems affect safe working practices (Hide et al., 2003). Managers often choose the best English speaker among migrant workers to translate for others. Misunderstandings can occur if the employee's English is not as good as the supervisor believes. The situation can also be exploited for personal gain by the employee saying something different to management than to their colleagues (O'Connor et al., 2014). It has therefore been suggested that migrant workers should be offered appropriate language training and job skills, possibly with the support of a government agency such as Jobsplus (Debono et al., 2013). Relevant materials also need to be translated, with the format, content and message tailored to the target group (Brunette, 2005). Relevant measures have been implemented in Malta, with the OHSA producing documents on OHS for migrants in eight languages (OHSA, 2022) and trade unions producing documents on workers' rights in various languages (Debono & Fiorini, 2023).

### 2.3.2 Training

Many OHS accidents are caused by workers' actions and bad habits (Hide et al., 2003; Winge et al., 2019). Several studies have shown that formal and professional OHS training can improve behaviour and reduce injuries (Greene et al., 2005; Spangenberg et al., 2002), while conversely, bad habits are more likely to persist when training is informal and on the job (Hide et al., 2003).

Falls are the leading cause of fatal accidents in construction worldwide (Nadhim et al., 2016), and the situation is no different in Malta (Fiorini et al., 2024). A lack of training is an important factor in the occurrence of falls (Nadhim et al., 2016). In Malta, the Kamra tal-Periti (2019) has also raised concerns that anyone with

demolition or excavation machinery can carry out excavation work without training and technical knowledge. The report emphasises the need to act quickly and classify contractors according to the qualifications of workers and equipment (Kamra tal-Periti, 2019). Contractors must certify their work according to several European building regulations. In Malta, the lack of registered contractors and proof of qualifications allows amateurs and unskilled labourers to provide services to consumers, which "often has tragic consequences" (Kamra tal-Periti, 2019, p. 34).

In 2016, a skills card was introduced to certify the skills of various construction-related professions. While this was a positive step forward, it remained a voluntary measure, meaning that only a fraction of those working in the sector received such a card (Zammit McKeon et al., 2024). It has been suggested that the skills card is made mandatory, is accompanied by a safety card and that it is issued only if the applicant is proficient in English or Maltese (Zammit McKeon et al., 2024).

### 2.3.3 Enforcement: Site visits and issuing of fines by the OHSA

Three instruments are used in Malta to enforce OHSA regulations on construction sites: Prosecutions, Stop Orders (SOs) and Administrative Fines (AFs). OHSA inspectors can order a construction site to cease operations if serious health and safety violations are detected. A verbal order is followed by a written order for these SOs within three days. The SO remains in place until the breaches are rectified (NAO, 2016). During an audit conducted by the NAO, four of the five sites audited received SOs. Despite this, one site that had received an SO continued to operate the next day. This raised questions about the effectiveness of this enforcement action (NAO, 2016).

The OHSA issues fines in accordance with L.N. 36 of 2012. The fines range from €250 to €450. Once the fines have been imposed, a follow-up visit is carried out to ensure infringements are rectified. The OHSA can prosecute if these violations are not addressed. The NAO (2016) found that the maximum administrative fine was disproportionate to some of the offences they were intended to deter (NAO, 2016). In terms of prosecutions, 526 cases were initiated between 2018 and 2023. During this period 516 cases were concluded. These cases include all prosecutions by the OHSA in all sectors. A further 119 cases were pending in 2023 (Zammit McKeon et al., 2024). In comparison, the OHSA issued 662 stop orders and 462 administrative fines in 2022 alone (OHSA, 2023).

Inspections and penalties have been shown to reduce injuries in the years following inspections (Gray & Mendeloff, 2005; Levine et al., 2012; Mischke et al., 2013).

Penalties can also encourage employers to improve safety and address problems (Haviland et al., 2010). Indeed, inspections, penalties and higher fines have been associated with fewer injuries in Malta (Fiorini et al., 2024), while many Maltese companies only take OHS action after inspections or fines (S. Borg, 2015; European Agency for Safety and Health at Work, 2019) or for legal reasons (European Agency for Safety and Health at Work, 2019). Against this backdrop, the NAO has criticised the OHSA for promoting a system of self-regulation, which it described as “utopian and unrealistic” (NAO, 2016, p. 50) given a widespread cultural disregard for safety and non-compliance with OHS regulations. This method of regulation was also criticised during the Jean Paul Sofia Public Enquiry (Zammit McKeon et al., 2024). The OHSA’s resources, which have not kept pace with the booming construction industry, have likely impacted their ability to conduct site visits and enforce regulations. In 2011, OHSA officials physically inspected each of the 250 construction sites for which they received Construction Notification Forms (CNFs) (OHSA, 2011). By 2019, 2,450 CNF forms had been received. By this time, the OHSA were sampling construction sites for inspections (OHSA, 2020).

### 3 Method

#### 3.1 Research design

A qualitative research design was used. Qualitative research methods were used as they allow for the exploration of words, meanings and reasons and are well-suited to determine new information and root causes (Bryman et al., 2022).

The research protocol received ethical clearance from the Research Ethics Committee of the Faculty of Economics, Management and Accountancy at the University of Malta.

#### 3.2 Participants and the context of the study

Participants who were qualified OHS professionals, and as a minimum held a diploma in OHS and two or more years of experience in the construction industry were sought. This strategy was chosen as it mirrors the criteria of the OHSA voluntary registry of competent persons. A purposive sample was used for this study as the individuals were specifically selected to meet the established criteria (Padgett, 2017). Potential participants were identified and contacted through the OHSA’s registry of competent persons which provides public contact details for those who opt to do so. Few participants were recruited in this manner, and further participants were recruited via snowball sampling.

Table 2 provides an overview of the background inform-

Participant	Qualification in OHS	Years of Experience in the construction industry
1	Diploma	more than 15
2	Diploma	less than 5
3	Masters	between 5 and 15
4	Masters	more than 15
5	Masters	more than 20
6	Diploma	more than 20
7	Diploma	between 5 and 15
8	Masters	between 5 and 15
9	Degree	between 5 and 15
10	Degree	between 5 and 15
11	Degree	more than 20
12	Diploma	more than 20

Table 2: Summary of Participants’ Relevant Information.

ation of the participants. Due to Malta’s small population and the small number of workers in the industry, the number of years worked has been categorised to protect the anonymity of the respondents. The qualifications listed in Table 2 refer to participants’ highest qualification in OHS. All participants are Maltese and male; this reflects the demographics of individuals who work in the field.

#### 3.3 Interview guide and the interviewing process

After analysing the available literature, an interview guide was created by the researchers (RF and LAF). The interview guide contained questions based on the main research question and the study objectives as recommended by Given (2008). The guidelines of Bell and Waters (2018) were used to formulate and structure the questions. The interview guide was divided into three parts. Firstly, the participants were asked about their background, professional experience and education. The second part consisted of six semi-structured questions. Participants were asked to discuss the state of OHS in the construction industry, the changes they had observed over the years, the challenges they encountered when carrying out their roles, and how health and safety in the construction industry could be improved. Participants were also asked to reflect upon initiatives they had implemented that had a positive effect and the difficulties they encountered when implementing these changes. The third part of the interview allowed participants to clarify or add to the discussion to conclude the interview.

Interviews were conducted by the first author (RF), all

of which ( $N = 12$ ) except one were conducted face-to-face and recorded using a laptop in a private room. One interview was carried out over the telephone. Shuy (2002) found that face-to-face interaction promotes small talk, politeness, joking, nonverbal communication, and human connection.

### 3.4 Data capturing and analysis methods

The principles of Thematic Analysis (Braun & Clarke, 2006) were used to analyse the data. The interviews were first transcribed (RF) and then read repeatedly. Key points and ideas were noted, and initial codes were created for all the data. Subsequently, themes and subthemes were identified and discussed between the two researchers. All relevant data was combined and a report was formulated by both researchers (Braun & Clarke, 2006).

### 3.5 Limitations

Whilst the sample is small, and formal statistics on the number of OHS practitioners operating in construction are unavailable in Malta, it is believed that less than 50 individuals who hold a minimum of a diploma in OHS carry out this role. The current sample would therefore constitute around a quarter of the qualified individuals working in the sector. The data collected is specific to the situation in Malta, and thus the findings may not be generalisable to other countries. Despite this, many of the findings appear in line with international research.

## 4 Results and Discussion

### 4.1 Objective 1: State of change in OHS over time

In line with the first objective, participants were asked if they thought the OHS situation in construction in Malta had changed over the years. All participants stated that they had observed an improvement over time, which is consistent with previous findings (Fiorini & La Ferla, 2021; Fiorini et al., 2024).

*“To be honest there was an improvement. Because when I started, health and safety was non-existent. Nothing at all. I remember going to sites with no equipment, no procedures, nothing.”*

The participants attributed the improvement to several factors. The introduction of the OHSA, the introduction of legislation, the positive influence of health and safety organisations and consultants in the industry, improved levels of education among practitioners and others working to improve levels in the country. The positive impact of social media was also mentioned, which participants felt had put pressure on organisations and authorities to

act. However, most participants agreed that there is still much more improvement to be made. Participants felt that Malta lags behind other developed countries in construction OHS, and referred to the number of fatalities in the construction industry.

*“From my perspective, I think that there is some work to be done. We are nowhere near the UK for instance.”*

In addition, the participants mentioned that there is a high rate of unreported accidents in the construction industry. Less progress has been made in Malta in terms of fatal accidents than in reducing non-fatal accidents (Fiorini et al., 2024). Underreporting of non-fatal accidents and health problems has been previously reported (Occupational Health and Safety Authority, 2011) and although there is no evidence to support this, underreporting may have increased in the construction industry due to the increasing reliance on migrant labour.

### 4.2 Objective 2: Issues and Challenges

The second objective sought to identify the perceived issues and challenges that OHS practitioners are currently facing when performing their roles. Four themes were identified: stakeholders in the industry, the role of OHS practitioners, training, and the increase in foreign workers.

#### 4.2.1 Stakeholders in the industry

All participants agreed that the client and the contractors (the developers) have a major influence on the level of OHS. The clients are in a strong position to determine the project standards as they both finance the project and determine who and what will be involved in the construction project (European Commission, 2011). Despite this, participants discussed how OHS levels differed between construction sites, with some sites having rules and procedures and others having nothing. Whilst some clients and contractors had a reputation for promoting a good level of OHS, others had a very poor reputation.

*“There are large differences between developers, that is clients and contractors, from one project to another. It ranges from very good to quite poor”*

This suggests that the authorities should try to flag problematic developers and focus more resources on these organisations. Despite the important role of contractors in safety, they remain unlicensed and unregistered (Zammit McKeon et al., 2024). In 2007, the Kamra tal-Periti (2007) argued in favour of registering all contractors based on a set of conditions, which the government

endorsed in 2020 (Kamra tal-Periti, 2020). This would ensure that only registered contractors with a solid safety record would be allowed to work and consequently be engaged by clients. Positively, regulations are in place to make registration and licensing mandatory by the beginning of 2025 (L.N. 166 of 2023).

Participants also described how developers and management's commitment to OHS improved the OHS behaviour of workers. When management prioritised OHS, workers followed suit. This has already been found in the literature (Bayram et al., 2017).

*"If the management shows interest in health and safety then the workers will show interest in health and safety. . . and they would adopt health and safety."*

Participants also expressed concern about clients not complying with OHS enforcement and PS stop work notices. In line with this, the NAO (2016) expressed concern about clients who did not comply with such instructions and questioned the effectiveness of enforcement. However, Fiorini et al. (2024) demonstrated that enforcement in Malta was associated with fewer non-fatal accidents, in line with foreign studies. The lack of commitment to safety by clients and contractors and unresolved safety issues have led to OHS practitioners resigning from projects. This was a drastic measure to avoid being held legally responsible for the inadequate state of health and safety on these construction sites. Practitioners also did this when they were threatened by clients for disrupting their projects and wasting their time and money trying to implement OHS measures.

*"When I have a client or a contractor who does not see eye to eye with me on safety issues in critical areas I pull out."*

Several developers were described as seeing safety as an expense and not an investment. Participants acknowledged that safety can be costly and that those developers looking to carry out a construction project whilst investing as little as possible would avoid investing in safety measures. Indeed, most participants stated that many developers prioritised completing the project on time above all else.

*"Some contractors do not invest in safety because safety is an expense, safety is seen as a waste of money. They want to get the job done, they have deadlines."*

The long-term benefits of high levels of OHS were more likely to be recognised by large contractors than small

contractors. Participants found working with smaller contractors challenging due to their lack of resources and lack of awareness of their OHS responsibilities. Several studies have found that larger companies invest more in OHS and are generally more compliant with their obligations (European Commission, 2011; Hide et al., 2003). This has also been noted in Malta (OHS, 2013, 2014).

#### 4.2.2 The role of OHS practitioners

Several issues revolved around participants having problems fulfilling their roles. One key issue was that OHS practitioners are paid by the contractor or the person commissioning the job. Practitioners often felt uncomfortable or feared for their jobs if they put pressure on an uncooperative developer or turned to the OHS.

*"What are the chances that the health and safety officer would actually report his employer to OHS?"*

This concern has featured in public statements by practitioners and the MOSHPA, who highlighted that practitioners who reported their employer could end up being blacklisted and unemployable in the construction industry (Times of Malta, 2022; Zammit, 2022a).

Participants also stated that the roles and responsibilities of OHS practitioners on construction sites are unclear. This was due to vague legislation and a lack of supporting guidelines for OHS practitioners. In practice, this resulted in differing standards between practitioners.

*"What is the role of the project supervisor? Because this is something that is unclear, where one has many different interpretations in the law. What is a competent person? What qualifications are required? What exactly is the role of the project supervisor? The role of the consultant?"*

Via their website, the OHS offers guidelines related to construction. Amongst them, a document provides information regarding construction-related roles, including the role of the client and PS (OHS, n.d.-a). However, the qualifications needed for different safety-related roles such as the PS are not covered. Guidelines for certain types of work equipment are also provided, as are links to related European guidelines. However, these do not include some topics that concern participants, such as guidance on the required frequency of inspections at construction sites, or the information that should be included in some OHS documentation. Consequently, practitioners stated that they sometimes argued with clients that they needed to visit their project more frequently, only

to be rebuked and allowed on-site at a lesser frequency. Furthermore, the quality of OHS documents produced by practitioners varied, with practitioners unsure of what was expected of them:

*“The OHSA, BICC (Building Industry Consultative Council) and all other entities that in one way or another are involved in construction, none of these have ever issued guidelines on what are the minimum requirements to be included in an OHS plan.”*

In a related finding, several participants stated that there is a lack of relationship between the OHSA and practitioners working in the field, or their representatives. Participants stated that there was little coherence between the communication and efforts of OHS practitioners and the OHSA. Others complained that the OHSA does not support OHS practitioners, and felt that the Authority does not value higher education.

*“There is no chemistry between project supervisors and the OHSA. The OHSA doesn’t even support or protect the project supervisors, instead, it is trying to destroy project supervisors.”*

*“[People] who go to university and spend two to five years studying, for the OHSA it means absolutely nothing.”*

In 2022, MOSHPA publicly expressed concern about the manner in which PSs are summoned to OHSA meetings when safety deficiencies are identified, where they are also informed that they have the right to be accompanied by a lawyer (Times of Malta, 2022). This practice could be linked to a recent court ruling which stated that PSs who identify hazards, inform clients and workers about them and detail the actions to be taken are not doing enough to fulfil the role of the PS as defined by law (Gauci & Magri, 2022). Nevertheless, the current study suggests that PSs are often not in a position where they can enact or push for needed change. It has also been argued that the same judgement, although not explicitly written, could be interpreted to mean that PSs should report shortcomings to the OHSA and risk incriminating themselves in the process (Gauci & Magri, 2022). During data collection, several participants expressed concern about this judgement. However, some of these issues may be resolved in the future, as the OHSA is working on revisions to L.N. 88 of 2018 concerning OHS in construction sites. Furthermore, efforts to open dialogue between practitioners and the OHSA have been noted since data collection.

The commercial aspects of the job also had an impact. In order to be competitive, OHS practitioners reduced the

cost of their services and in the process, carried out fewer site visits. Participants felt that this was possible due to the lack of standards in the industry. Participants also expressed concern that some OHS practitioners took on more sites than they could manage. In fact, the OHSA found that one PS was overseeing 500 sites simultaneously (Zammit, 2022b). Possibly exacerbating this situation is the fact that there are no guidelines on who is competent to take on the role of a PS, and there is limited regulation on who can work as an OHS practitioner in Malta (Fiorini & La Ferla, 2023). More highly qualified individuals, who may be more diligent and recognise the ethical implications of their work, may be competing with individuals who have invested less in their training or have not analysed such implications.

#### 4.2.3 Training and awareness

The importance of worker training was emphasised by all participants. The majority pointed out that sufficient training must be provided for high-risk activities, such as working at height, but that it is rarely provided. As a result, health and safety professionals were regularly confronted with negative working practices and attitudes:

*“I’ve seen a number of people who don’t want to use a harness, or others who use it and use it incorrectly. I’ve seen harnesses tied to twenty cement bags... and if the line cuts through the bags...”*

Falls from height are the most common cause of death on construction sites in Malta (Fiorini et al., 2024) and internationally (Nadhim et al., 2016). A lack of training is a contributing factor (Nadhim et al., 2016). In line with this, the Kamra tal-Periti (2019) expressed concern that labourers are allowed to work on-site without any basic training, in contrast to several European building regulation frameworks that require contractors to be certified to certain standards.

Participants also expressed concern that the skill card is insufficient in terms of allocated course time and contents for high-risk tasks, such as working at height.

*“[The skill card gives the perception that] after 40 minutes talking on working at heights the worker is an expert, where in reality working at heights training takes a number of hours and involves theory and practice”*

#### 4.2.4 Foreign workers

All participants were concerned about the influx of foreign labour into the construction industry, triggered by a



high demand for workers that could not be met by the Maltese workforce. Indeed, the percentage of Maltese construction workers has decreased over the years and the industry relies more on migrant labour (Central Bank of Malta, 2019).

The influx of foreign labour has brought with it a number of challenges, including the working conditions offered to these workers and cultural differences. Comments from participants emphasised the lack of regulation in relation to migrant workers' skills:

*"Agencies bring workers without any screening, the next day they are on the job and that's it."*

Participants expressed frustration that foreign workers were often those accustomed to working in less industrialised or developed conditions, with poor OHS standards:

*"Their culture in OHS is much lower than ours. . . We have been struggling to increase our standards and then all of a sudden you had an influx of foreign workers with no idea of health and safety."*

Research indicates that migrant workers are more likely to take risks on the job and to carry out work without proper training (Flynn, 2014; Ronda Pérez et al., 2012). The regular turnover of migrant workers subsequently makes it more difficult to raise standards in Malta, with many migrants leaving the country within months or years of arriving (I. Borg, 2019). However, a lack of instruction also contributed to migrants' negative OHS attitudes.

*"Migrant workers do not apply any safety, and I don't blame them. Because they are not instructed. They are not knowledgeable. . . When it comes to legislation and safety and all of this, they are very laid back. And I think this is one of the biggest problems."*

Dangerous working conditions, however, were often perpetrated by the worksite, with participants suggesting that developers took advantage of such workers:

*"I've faced some situations where the risks were high, and I was astonished, and I stopped the work right away. These people were put in dangerous situations just because they are immigrants and don't even know their rights."*

*"[Migrant workers are] forced to work in inhumane situations and you find them there, working in construction sites without awareness, nothing. Some of them really want the job, and they do*

*everything the master says. So, they are not assertive. So, if they tell them to go and work in a precarious situation, they will do it. . . This is one of the biggest challenges I think that we find in construction."*

Accidents among migrant workers appear to be on the rise in Malta (Fiorini & La Ferla, 2021), and a local study by Debono and Vassallo (2020) found that many Filipino workers in Malta struggle with negative workplace conditions, including in the construction industry, with almost half of respondents stating that their health or safety was at risk due to their work. Similarly, respondents indicated that migrant workers often do the same work as local workers for a lower wage. This was often coupled with longer working hours and poorer working conditions than non-migrant workers. Research by the International Labour Organisation (ILO) corroborates these statements and adds that migrant workers are often victims of human rights violations, abuse, human trafficking and violence (ILO, 2015).

Most participants stated that the language barrier on construction sites is a major problem, as migrant workers often lack basic English or Maltese literacy skills. Participants explained that OHS professionals sometimes have to find someone to translate, resort to drawings or use Google Translate to convey an important safety message. Participants emphasised that contractors often do not prioritise English language skills or even disregard them. This situation is not limited to Malta and has been described as a contributory factor in various accident investigations that impacted safe working practices (Hide et al., 2003).

### **4.3 Objective 3: Recommendations for improvement**

The third and last objective sought to explore potential avenues for improvements. Six themes were identified: stakeholders in the industry, the role of OHS practitioners, collaboration between authorities and entities, training and raising awareness, foreign workers, and enforcement.

#### **4.3.1 Stakeholders in the industry: clients and contractors**

The participants suggested that occupational health and safety requirements should be defined before the start of a construction project, especially if several contractors are involved. For larger projects, these could then be included in the tendering process. The European Commission (2011) has made the same recommendation. Studies show that prioritising OHS during the procurement process is essential for creating effective strategies and a strong safety culture (Young et al., 2019).

Participants emphasised the need to introduce contractor licensing to ensure that qualified workers are employed on construction sites. Some suggested that a contractor who has a serious accident should be disqualified from participating in public contracts for 12 months. Participants also suggested linking the duration of the blacklist to the severity of the accident. This approach would also allow contracting authorities to select contractors based on their safety records.

*“I would start with setting up a register, where you have the contractors registering according to their capabilities.... according to the level of management, training, skill. Because that makes a difference in health and safety. And also if they have training in health and safety and the equipment being used.”*

Mandatory licensing of contractors and ensuring that workers are qualified has been suggested previously (Kamra tal-Periti, 2020; Zammit McKeon et al., 2024). However, the results on the impact of contractor licensing on service quality and OHS are mixed (Kleiner, 2015; Mitchell, 2020; Vokes & Pye, 2013).

Several participants stated that stakeholder education is crucial to create a mindset where OHS is not only seen as a financial and operational burden but as an integral part of the construction project.

*“From the very beginning, all players, stakeholders, from the developer downwards, in order to work in this field, should be given both the opportunity and in many cases the obligation to actually be educated in health and safety management.”*

Participants felt that OHS awareness would improve if stakeholders understood their legal obligations. To this end, the European Commission (2011) emphasised the importance of clients understanding their responsibilities and that appropriate coordination takes place to ensure OHS.

#### 4.3.2 The role of OHS practitioners

Most participants emphasised the need for more frequent monitoring of construction sites, a recommendation that had already been highlighted by the Kamra tal-Periti (2019). Participants highlighted that this was difficult to implement as practitioners were in competition with each other and were driving down prices by carrying out fewer inspections. Participants emphasised the need for a code of practice and conduct that the OHS should develop with OHS practitioners to regulate OHS services. These

standards would help clarify issues such as who is competent, what is required of a PS, and how often inspections are required.

*“If not every day, [inspections should take place] at least when there are changes in the work. Within the current system, the commercial aspect of the role created by the practitioners in the industry would make this very difficult for one to compete and this point ties with the need to regularise and standardise the guidelines for OHS practitioners working in the industry.”*

Several participants recommended that the OHS establish a database of all industry practitioners who provide OHS services as PSs or consultants. One purpose of this registry would be to randomly assign an OHS practitioner to manage the worksite of clients or contractors seeking such services. Participants suggested that these practitioners would be paid by the client and would report directly to the OHS, the client and others as required. This proposal has previously been suggested by MOSHPA as a possible way forward, whereby PSs would fall under the OHS and clients would pay an administrative fee to the OHS for providing the service (Times of Malta, 2022). Indeed, the OHS has been advised by the NAO (2020) to consider shifting the statutory duty to appoint a PS from the client to a more technical and capable stakeholder (NAO, 2020). The current proposal would reduce the race to the bottom between practitioners but is unlikely to be favoured by those wishing to compete commercially.

Participants expressed confusion about the requirements needed to fulfil the position of PS. This included whether a PS must be registered on the OHS's competent list for OHS practitioners and whether there are any additional requirements. According to the NAO, the OHS should ensure that only competent PSs supervise construction sites (NAO, 2020). The OHS rejected this proposal as there are not enough people on the register of competent persons to fulfil this role and suggested that such a requirement would stifle the industry (NAO, 2020). Participants also disagreed on the minimum requirements that a PS should have. Some emphasised the value of a university degree, while others felt that a PS need not be highly qualified and that diploma-level training would suffice. These suggestions were probably influenced by the qualifications held by the participants themselves. Those who favoured higher qualifications pointed out that there was scope for specialisation within the PS role, while expressing frustration that OHS did not value higher education.

*“Construction involves a huge number of skills”*

### 4.3.3 Training and raising awareness

The majority of participants emphasised that training is important and necessary for everyone working on a construction site. Participants stated that workers are ill-informed and recommended that such training should be provided when workers are learning their skills and that it should be tailored to their position.

*“When studying to become a builder, you can’t have generic health and safety training but more detailed training”.*

Scientific studies have consistently shown that OHS training improves behaviour and attitudes while reducing accidents and lost time (Greene et al., 2005; Hide et al., 2003; Spangenberg et al., 2002). The participants’ suggestions are also consistent with those relating to the mandatory introduction of a skill and safety card (Zammit McKeon et al., 2024).

Several participants also spoke of the importance of involving workers in OHS decisions and approaching them positively. Participants noted that workers regularly had useful insights and ideas that went beyond those of the developers. Worker involvement in OHS has proven benefits, such as enhancing risk assessment (Popma, 2009), and would be facilitated by better OHS culture and training (Bayram et al., 2022).

### 4.3.4 Foreign workers

While participants expressed concern about problems related to communication, few offered solutions. Where possible, participants resort to using a member of staff as a translator.

One recommendation was to involve Identity Malta in the process to help employees with their skills and language knowledge. The Centre for Labour Studies had previously suggested involving JobsPlus in such an endeavour (Debono et al., 2013). The recent public enquiry recommended that language skills should be a prerequisite for obtaining a mandatory skills card (Zammit McKeon et al., 2024). The current findings suggest that this could be a fruitful measure.

### 4.3.5 Collaboration between authorities and entities

Several participants shared the view that various authorities and entities were not collaborating on OHS matters and agreed that there is a need for cooperative communication. Participants also felt that at times there was overlap between entities that should be tackled.

*“I would have the OHS carry out meetings to improve the inter-communication between government departments vis-a-vis construction sites.*

*This is an area which is lacking. The Planning Authority have the site technical officers, OHS is not part of the Planning Authority’s permit. Then you have the BCA and the OHS doing more or less the same work...”*

The suggestion highlights findings from the public enquiry (Zammit McKeon et al., 2024). Since data collection, relevant positive measures have occurred in this respect, such as the OHS forming part of the BICC, with representatives on the advisory board and working groups (OHS, 2024). Kamra tal-Periti (2019) recommended consolidating building regulations into one legal act to allow building codes to be published and enforced by a single body, promoting better and simpler standards. The proposal was supported by many institutions and organisations (Kamra tal-Periti, 2020). It is unclear if this is needed, but collaboration between the different agencies and stakeholders appears paramount.

### 4.3.6 Enforcement, fines and site inspections

Participants stated that more enforcement by OHS is needed, but also acknowledged OHS’s limited resources. The NAO (2016) also emphasised the importance of enforcement in the local context due to the cultural disregard for OHS. Participants also pointed out that education was very important but was a long-term strategy, whereas currently enforcement was needed to improve the situation.

*“The immediate need is more supervision, monitoring, and enforcement. But that alone will not get us far. It has been proven that a policing type of health and safety management does not get you far. On its own, it’s just an impetus for people to go around it.”*

All study participants emphasised the need for higher financial penalties proportional to incidents on site. Participants mentioned that clients sometimes told OHS practitioners that they did not mind fines.

*“When you fine them [major contractors], 500 Euros it’s like having a cup of coffee for them.”*

The NAO (2016) found that administrative fines do not act as a sufficient deterrent for certain offences. Several participants emphasised that fines should be supported by an interruption of work on the site and other sites of the contractor accused of a violation. Participants noted that the interruption of work was often much more costly for developers than the fine.

*“For me it’s not about only giving a fine. For me, it’s a fine, stopping the work and closing the site down completely. So, if the contractor has four sites and I find a problem on one site, I shut down all four sites. We have to be harsh. It’s the only way to get an effect.”*

Studies show that enforcement reduces injury rates (Haviland et al., 2010; Mischke et al., 2013). In addition, many Maltese companies only take action due to OHS inspections or fines (S. Borg, 2015).

Participants also felt that the way OHS selects its sites for inspections needs to be changed, describing the current process as “a formality”. Indeed, the NAO (2016) recommended that the OHS should prioritise its inspections based on the tasks, risks and duty holders’ OHS track record at construction sites.

## 5 Conclusion and Final Recommendations

Overall, the study found that OHS has improved over the years in the construction industry. However, it was felt that it still falls short of the desired standards compared to other developed countries.

The study sheds light on several issues. Many developers view OHS as an unwanted and unnecessary expense. While this is not true of all developers, some have a negative OHS reputation. These developers ignored stop work orders issued for safety violations and some OHS practitioners withdrew from their projects because they feared that accidents were inevitable. These problems generally seem to be more common among smaller developers. Despite the important role that property developers play in fostering a positive or negative OHS culture, there is no mandatory licensing of contractors in Malta, which means that anyone can take on this safety-critical task without any experience or training. It is therefore suggested that the OHS should target developers who are known to pay little attention to health and safety. This can be done through targeted education campaigns in the hope of changing perceptions, and also through enforcement. Mandatory licencing of contractors also seems necessary, and regulations are in place for this to be implemented by 2025. Licensing should be coupled with mandatory health and safety training.

Health and safety practitioners struggled to make an impact when working with less receptive developers as they were essentially dealing with their employer. Practitioners were concerned about their reputation with clients and contractors if they took too strong a position, as this could negatively impact their current and future employment opportunities. Practitioners also felt that there

was a lack of formal standards and guidelines in the industry, which made it difficult for them to make their case. Rather, clients and contractors were able to impose their own standards, for example by requiring fewer site visits. Participants also complained that they were not supported by the OHS, but instead feared that they could be prosecuted for shortcomings on construction sites that they could not control. However, some OHS professionals did not help the situation by competing commercially and driving down prices by offering less comprehensive services. This was exacerbated by a lack of standards within the sector and a lack of standards regarding who is legally recognised as competent to take on the role of a PS. In light of these situations, OHS practitioners would be emboldened by agreed OHS standards for the construction sector, set and enforced by the OHS in consultation with OHS professional organisations and other stakeholders. These should promote a climate in which OHS requirements are established before construction begins. Consideration should also be given to making OHS an important criterion in the tendering process, so that property developers with a poor safety record cannot bid for government tenders. PSs being held responsible for standards that they cannot enforce also requires tackling. One option could be to shift responsibility to those who have day-to-day management of the construction site and its workers. Fixed standards are also needed for the qualifications required for the position of a PS. Currently, these are not specified, leading to an environment where poorly qualified individuals offering substandard work make it difficult for the qualified to work at a competitive level.

Problems were also identified in relation to workers, particularly due to their lack of training. This led to poor OHS attitudes and behaviours. When training did take place, it was often perceived as inadequate and irregular. Training related to the safety card was also seen as insufficient, with training related to working at height being particularly criticised. This is not only dangerous for the worker, but also for their colleagues and the general public. Therefore, all employees should be adequately trained. This should be done before starting work and, as suggested by the participants, should be part of the workers’ skills training and thus integrated into the skills card requirements, which should also be mandatory.

Participants also commented on the influx of migrant workers and its impact on the construction industry. Participants acknowledged the need for additional labour in the construction industry and the limitations of the local labour market. Participants highlighted the lack of worker vetting, which resulted in the employment of migrant workers lacking skills and language competency. Migrant workers often received no training and participants de-

scribed situations in which migrant workers worked under worse conditions than local workers. Migrant workers should therefore be subject to the same OHS training requirements as national workers, and one clause of the skill card should be proficiency in English or Maltese. As the participants pointed out problems with working conditions that go beyond OHS, other entities, such as the Department of Industrial and Employment Relations (DIER) should also be involved and possibly carry out regular joint inspections with the OHSA.

Participants also pointed out that enforcement was not regular enough and that fines, when imposed, were not deterrent enough. Participants also felt that cooperation between Government agencies was insufficient and led to unnecessary overlap and ambiguity, both technically and legally. It is therefore clear that the OHSA needs additional resources to carry out more regular inspections, while the fines need to be revised. It would appear that while higher fines are more effective, stopping work, possibly on more than one site by the same developer, could have a more significant impact on improving standards. In order to find a common way forward, a forum bringing together the various government authorities, agencies and entities, as well as practitioner bodies and educational establishments may be warranted.

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## References

- Bayram, M., Arpat, B., & Ozkan, Y. (2022). Safety priority, safety rules, safety participation and safety behaviour: The mediating role of safety training. *International Journal of Occupational Safety and Ergonomics*, 28(4), 2138–2148.
- Bayram, M., Ünğan, M. C., & Ardiç, K. (2017). The relationships between ohs prevention costs, safety performance, employee satisfaction and accident costs. *International Journal of Occupational Safety and Ergonomics*, 23(2), 285–296.
- Bell, J., & Waters, S. (2018). *Doing your research project* (Seventh edition). McGraw Hill Education.
- Borg, I. (2019). *The length of stay of foreign workers in Malta*, Central Bank of Malta.
- Borg, S. (2015). *Evaluation of the EU occupational safety and health directives: Country summary report for Malta* [<https://ec.europa.eu/social/BlobServlet?docId=17119&langId=fi>], Milieu Ltd.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Brunette, M. J. (2005). Development of educational and training materials on safety and health: Targeting hispanic workers in the construction industry. *Family & Community Health*, 28(3), 253–266.
- Bryman, A., Bell, E., Reck, J., & Fields, J. (2022). *Social research methods*. Oxford University Press.
- Central Bank of Malta. (2019). *Developments in the foreign workforce in Malta* [<https://www.centralbankmalta.org/file.aspx?f=92659>].
- Chapter 424. (2000). *Occupational Health and Safety Authority Act (XXVIII of 2000), Laws of Malta* [<https://legislation.mt/eli/cap/424/eng>].
- Debono, M., Baldacchino, G., Borg, A., Fiorini, L., Rizzo, S., & Zammit, E. (2013). *Memorandum to political parties contesting the general election being held on 9th march 2013* (tech. rep.) ([https://www.um.edu.mt/library/oar/bitstream/123456789/97991/1/Centre\\_for\\_Labour\\_Studiesbiennial\\_report\\_2011-2012\\_2013.pdf](https://www.um.edu.mt/library/oar/bitstream/123456789/97991/1/Centre_for_Labour_Studiesbiennial_report_2011-2012_2013.pdf)). University of Malta.
- Debono, M., & Fiorini, L. A. (2023). Malta: Trade union resilience in a changing environment. In J. Waddington, T. Müller & K. Vandaele (Eds.), *Trade unions in europe* (pp. 763–798). Peter Lang.
- Debono, M., & Vassallo, M. T. (2020). Predictors of employment outcomes among Filipino workers in Malta. *Xjenza*, 8(1), 16–31.
- European Agency for Safety and Health at Work. (2019). *Third European survey of enterprises on new and emerging risks (esener 3)* [<https://osha.europa.eu/en/publications/third-european-survey-enterprises-new-and-emerging-risks-esener-3>].
- European Commission. (2011). *Non-binding guide to good practice for understanding and implementing directive 92/57/eec on the implementation of minimum safety and health requirements at temporary or mobile construction sites* [<https://op.europa.eu/en/publication-detail/-/publication/96b5fe83-ef7d-4628-9af0-e02b25810c1d>]. Publications Office of the EU.
- Eurostat. (2020). *Accidents at work — statistics by economic activity* [<https://statistical.proquest.com/statisticalinsight/result/pqpresultpage.previewtitle?docType=PQSI&titleUri=/content/2020/1600-S295.40303.xml>].
- Fiorini, L. A. (2018). *Two thousand kilometres away from the Danish model: Transposition, implementation and enforcement of EU occupational safety and health legislation in Malta* [<https://www.um.edu.mt/library/oar/bitstream/123456789/97184/1/Two%20thousand%20kilometres%20away%20from%20the%20Danish%20model.pdf>], European Commission.

- Fiorini, L. A., Camilleri, L., & Gauci, M. (2024). Occupational accidents in Malta and the role of the occupational health and safety authority: A twenty-year analysis. *International Journal of Occupational and Environmental Safety*, 8(2), 12–30.
- Fiorini, L. A., & La Ferla, F. M. E. (2021). The development of occupational health and safety in Malta. In M. Debono & G. Baldacchino (Eds.), *Working life - the transformation of the Maltese workplace: 1960-2020* (pp. 217–236). Malta University Press.
- Fiorini, L. A., & La Ferla, F. M. E. (2023). The development of health and safety in Malta: The contribution of the Centre for Labour Studies, University of Malta. In L. A. Fiorini (Ed.), *Centre for labour studies 2021-2023 biennial report. 40th anniversary edition* (pp. 70–77). Centre for Labour Studies.
- Flynn, M. A. (2014). Safety & the diverse workforce. *Professional Safety*, 59(6), 52–57.
- Gammarano, R. (2020). *Covid-19 and the new meaning of safety and health at work* (tech. rep.) (<https://ilostat.ilo.org/covid-19-and-the-new-meaning-of-safety-and-health-at-work/>). International Labour Organization.
- Gauci, M., & Magri, J. (2022). From the bench: Construction project supervisors and the problems with our laws [<https://timesofmalta.com/articles/view/from-the-bench-construction-project-supervisors-and-the-problems-with.957778>]. *Times of Malta*.
- Given, L. M. (Ed.). (2008). *The sage encyclopedia of qualitative research methods*. Sage Publications.
- Gray, W. B., & Mendeloff, J. M. (2005). The declining effects of osha inspections on manufacturing injuries, 1979–1998. *ILR Review*, 58(4), 571–587.
- Greene, B. L., DeJoy, D. M., & Olejnik, S. (2005). Effects of an active ergonomics training program on risk exposure, worker beliefs, and symptoms in computer users. *Work*, 24(1), 41–52.
- Haviland, A., Burns, R., Gray, W., Ruder, T., & Mendeloff, J. (2010). What kinds of injuries do osha inspections prevent? *Journal of Safety Research*, 41(4), 339–345.
- Hide, S., Atkinson, S., Pavitt, T. C., Haslam, R., Gibb, A. G., & Gyi, D. E. (2003). *Causal factors in construction accidents*, Health and Safety Executive.
- Horvat Cardona, M. (2023). *An assessment of workplace health & safety in the construction industry: The case of Serbians working in Malta* [Unpublished dissertation], University of Malta.
- International Labour Organization. (2015). *Ilo global estimates of migrant workers and migrant domestic workers: Results and methodology* (tech. rep.). International Labour Office.
- Kamra tal-Periti. (2007). *The urban challenge — our quality of life and the built environment* (tech. rep.) (<https://kamratalperiti.org/wp-content/uploads/urbanChallenge.pdf>).
- Kamra tal-Periti. (2019). *A modern building & construction regulation framework for Malta. Public consultation paper* (tech. rep.).
- Kamra tal-Periti. (2020). *A modern building and construction regulation framework for Malta* (tech. rep.) (<https://kamratalperiti.org/wp-content/uploads/a-modern-building-construction-framework-for-malta.pdf>).
- Kleiner, M. M. (2015). Reforming occupational licensing policies [<https://conservancy.umn.edu/handle/11299/190817>].
- Legal Notice 166 of 2023. (2023). *Construction industry licensing regulations, Laws of Malta*. [<https://legislation.mt/eli/ln/2023/166/eng>].
- Legal Notice 36 of 2012. (2012). *Occupational health and safety (payment of penalties) regulations, Laws of Malta*. [<https://legislation.mt/eli/ln/2012/36/eng>].
- Legal Notice 88 of 2018. (2018). *Workplace (minimum health and safety requirements for work at construction sites) regulations, Laws of Malta*. [<https://legislation.mt/eli/sl/424.36/eng/pdf>].
- Levine, D. I., Toffel, M. W., & Johnson, M. S. (2012). Randomized government safety inspections reduce worker injuries with no detectable job loss. *Science*, 336(6083), 907–911.
- Mischke, C., Verbeek, J. H., Job, J., Morata, T. C., Alvesalo-Kuusi, A., Neuvonen, K., Clarke, S., & Pedlow, R. I. (2013). Occupational safety and health enforcement tools for preventing occupational diseases and injuries. *Cochrane Database of Systematic Reviews*, 2013(8), CD010183.
- Mitchell, M. (2020). Colorado occupational licensing and credential portability [CE Think Tank Newswire. <https://search.proquest.com/docview/2376908141>].
- Moyce, S. C., & Schenker, M. (2018). Migrant workers and their occupational health and safety. *Annual Review of Public Health*, 39, 351–365.
- Nadhim, E. A., Hon, C., Xia, B., Stewart, I., & Fang, D. (2016). Falls from height in the construction industry: A critical review of the scientific literature. *International Journal of Environmental Research and Public Health*, 13(7), 638.
- National Audit Office. (2016). *Performance audit: An analysis on OHSa's operations: A case study on the construction industry* [<https://nao.gov.mt/wp-content/uploads/2022/07/OHSA-April16.pdf>].

- National Audit Office. (2020). *Malta: Report on verification of effectiveness: A follow-up on the 2016 analysis on OHSa's operations — a case study on the construction industry* [<https://nao.gov.mt/wp-content/uploads/2022/07/OHSAJune2020.pdf>].
- Occupational Health and Safety Authority. (2011). *Occupational health and safety in Malta — a snapshot of prevailing standards* [<https://www.ohsa.mt/sites/default/files/2022-07/ESF%20research.pdf>].
- Occupational Health and Safety Authority. (2011). *Report of activities for the period 1st January 2011 — 31st October 2011* [<https://www.ohsa.mt/sites/default/files/2022-10/AR-OHSA-2011.pdf>].
- Occupational Health and Safety Authority. (2013). *Report of activities for the period 1st November 2011 — 31st December 2012* [<https://www.ohsa.mt/sites/default/files/2022-10/AR-OHSA-2012.pdf>].
- Occupational Health and Safety Authority. (2014). *Report of activities for the period 1st January 2013 — 31st December 2013* [<https://www.ohsa.mt/sites/default/files/2022-10/AR-OHSA-2013.pdf>].
- Occupational Health and Safety Authority. (2020). *Report of activities for the period 1st January 2019 — 31st December 2019* [<https://www.ohsa.mt/sites/default/files/2022-10/AR-OHSA-2019.pdf>].
- Occupational Health and Safety Authority. (2022). *Strategic plan for occupational health and safety 2022-2027* [[https://www.ohsa.mt/sites/default/files/2022-06/Strategic-Plan-2022-2027\\_0.pdf](https://www.ohsa.mt/sites/default/files/2022-06/Strategic-Plan-2022-2027_0.pdf)].
- Occupational Health and Safety Authority. (2023). *Report of activities for the period 1st January 2022 — 31st December 2022* [<https://www.ohsa.mt/sites/default/files/2024-01/AR-OHSA-2022.pdf>].
- Occupational Health and Safety Authority. (2024). *Report of activities for the period 1st January 2023 — 31st December 2024* [[https://www.parlament.mt/media/127969/ohsa-annual-report-2023\\_ps-vetted.pdf](https://www.parlament.mt/media/127969/ohsa-annual-report-2023_ps-vetted.pdf)].
- Occupational Health and Safety Authority. (n.d.-a). *Competent person register* [<https://www.ohsa.mt/sites/default/files/2023-10/Competence-Registration-20231004.pdf>].
- Occupational Health and Safety Authority. (n.d.-b). *Regolamenti dwar is-Sahha u s-Sigurtá waqt Xoghol ta' Kostruzzjoni — Mistoqsijiet Frekwenti (FAQs)* [<https://www.ohsa.mt/sites/default/files/2023-02/Regolamenti-dwar-is-Sahha-u-s-Sigurta-waqt-Xoghol-ta-Kostruzzjoni.pdf>].
- O'Connor, T., Flynn, M., Weinstock, D., & Zaroni, J. (2014). Occupational safety and health education and training for underserved populations. *New Solutions*, 24(1), 83–106.
- Padgett, D. K. (2017). *Qualitative methods in social work research* (Third edition). Sage.
- Popma, J. R. (2009). Does worker participation improve health and safety? Findings from the Netherlands. *Policy and Practice in Health and Safety*, 7(1), 33–51.
- Quandt, S. A., Arcury-Quandt, A. E., Lawlor, E. J., Carrillo, L., Marín, A. J., Grzywacz, J. G., & Arcury, T. A. (2013). 3-D jobs and health disparities: The health implications of latino chicken catchers' working conditions. *American Journal of Industrial Medicine*, 56(2), 206–215.
- Ronda Pérez, E., Benavides, F. G., Levecque, K., Love, J. G., Felt, E., & Van Rossem, R. (2012). Differences in working conditions and employment arrangements among migrant and non-migrant workers in Europe. *Ethnicity & Health*, 17(6), 563–577.
- Salminen, S. (2011). Are immigrants at increased risk of occupational injury? A literature review. *The Ergonomics Open Journal*, 4(1), 125–130.
- Shepherd, R., Lorente, L., Vignoli, M., Nielsen, K., & Peiró, J. M. (2021). Challenges influencing the safety of migrant workers in the construction industry: A qualitative study in Italy, Spain, and the UK. *Safety Science*, 142, 105388.
- Shuy, R. W. (2002). In-person versus telephone interviewing. In J. G. Gubrium & J. A. Holstein (Eds.), *Handbook of interview research: Context and method* (pp. 537–555). Sage.
- Spangenberg, S., Mikkelsen, K. L., Kines, P., Dyreborg, J., & Baarts, C. (2002). The construction of the Øresund link between Denmark and Sweden: The effect of a multi-faceted safety campaign. *Safety Science*, 40(5), 457–465.
- Times of Malta. (2022). Editorial: Project supervisors and the OHSa need a healthier relationship [<https://timesofmalta.com/articles/view/editorial-lifesaving-partnership-ohsa-supervisors-workplace-safety-985904>].
- Vokes, C., & Pye, K. (2013). Licensing domestic contractors: An international perspective an assessment of international schemes for the licensing of building trades operating in the home [<https://www.pyetai.com/wp-content/uploads/2015/08/licensing-domestic-contractors.pdf>].
- Winge, S., Albrechtsen, E., & Mostue, B. A. (2019). Causal factors and connections in construction accidents. *Safety Science*, 112, 130–141.
- Xuereb, M. (2022). Deaths at construction sites: EU monitors Malta's health and safety measures [<https://europe-cities.com/2022/05/20/deaths-at-construction-sites-eu-monitors-maltas-health-and-safety-measures/>].

- Young, B., Seidu, R., Nganga, D., Robinson, H., & Ebohon, O. (2019). Driving health and safety in construction through procurement strategy. *Proceedings of the 1st Association of Researchers in Construction Safety, Health, and Well-Being (ARCOSH) Conference*, 76.
- Zammit, M. L. (2022a). Construction supervisors 'risk blacklisting' if they raise safety concerns [<https://timesofmalta.com/articles/view/construction-supervisors-risk-blacklisting-raise-safety-concerns.984704>].
- Zammit, M. L. (2022b). Toy helmets and flimsy harnesses: Shoddy safety practices at work revealed [<https://timesofmalta.com/articles/view/toy-helmets-flimsy-harnesses-shoddy-safety-practices-work-revealed.979220>].
- Zammit McKeon, J., Deguara, C., & Cassar, M. (2024). Rapport tal-inkesta pubblika. Jean Paul Sofia li miet fit-3 ta' Dicembru 2022 [<https://cdn-others.timesofmalta.com/2fb259a2c1ee5ee8d41f9680dbae4ded3462895d.pdf>].