

CONSTRUCTION OCCUPATIONAL SAFETY AND HEALTH INCIDENT REPORTING, RECORDING, MONITORING AND MANAGEMENT IN UGANDA

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The construction industry is prone to many Occupational Safety and Health (OSH) incidents and responsible for high fatality of workers. Despite their high frequency and severity, construction incidents are usually underreported. The level of incident reporting is largely dependent on the nature of the reporting process. In this paper, we describe the current OSH incident recording, reporting, and management process in Uganda and identify weaknesses in the process that provide an opportunity for improvement, which could, ultimately, lead to better OSH performance. The research involved process modelling of the as-is/current process, based on content analysis of existing literature, and verification and analysis of the process model through interviews with OSH subject matter experts. The findings reveal that the current OSH incident, reporting recording, monitoring and management process is comprised of four sub-processes: Workplace Incident Reporting, Management, Recording and Compensation (WIRMR&C); Hospitisation (HOS); Incident Reporting to Police (IR2P) and National Incident Reporting, Management and Monitoring (NIRM&M). Several weaknesses such as: lack of centralized recording of construction OSH incidents; and lack of provisions for reporting minor OSH incidents at national level were identified. We suggest that these weaknesses should be addressed with a national web-based OSH incident recording, reporting and monitoring system.

Keywords: safety incidents; incident reporting; process modelling; Uganda

INTRODUCTION

The construction industry is affected by many setbacks in as far as Occupational Safety and Health (OSH) is concerned. It is considered one of the most dangerous industries on basis of accident frequency (Lubega, *et al.*, 2000). In Europe, the construction industry contributes 30% of fatal industrial accidents, yet it employs only 10% of the population (Peckit, *et al.*, 2004). Construction fatalities account for 30-40% of industrial fatal accidents in Japan and 50% in Ireland (Peckit, *et al.*, 2004). In Kampala, the capital of Uganda, about 4% construction workers suffer workplace injuries and the resultant fatality rate is 84 in every 100000 workers (Irumba, 2014).

It is important to note that most of the statistics on OSH accidents are often incomplete and unreliable because under-reporting is common (ILO, 2012). The

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deficiency in reporting and monitoring leads to underestimation of incidents. Underestimation of OSH incidents occurs when organizations fail to record employee injuries and illnesses (organizational-level under-reporting) and report to the authorized bodies or when employees fail to report injuries and illnesses occurring at the workplace (individual-level underreporting) to the relevant officers (Probst and Estrada, 2010).

Many OSH incidents on construction sites in Uganda are not documented, reported, or investigated by the relevant authorities because of a number of factors including among others, a rudimentary reporting and monitoring system. The current OSH incident reporting in Uganda still relies on a letter delivery system, involving cumbersome documentation, high transportation, and handling costs and 'delays in conveyance of information' (DOSH, 2018). Such a system frustrates both the reporters of incidents and the enforcers of OSH, thereby affecting process of reporting and monitoring OSH incidents. This culminates into underreporting and underestimation of OSH incidents in Uganda's construction industry. According to Okwel *et al.*, (2019), reporting of accidents to the authorities is considerably low (about 24%) and it is apparent that occupational illnesses are not reported (Alinaitwe, *et al.*, 2007). This failure to report and address OSH incidents eventually leads into recurrence and the problem is aggravated. Consequently, many construction accident victims are not helped or compensated by their employers in a deserving manner and the enforcing bodies have limited means of tracking such instances. This study was thus carried out to help in addressing the problem of underreporting of construction OSH incidents in Uganda. The objectives of this study were: 1. To describe the current process of OSH incident reporting, recording, monitoring and management in the construction industry, 2. To identify the weaknesses in the process 3. To suggest measure(s) to improve incident reporting in Uganda's construction industry.

OSH in Uganda's Construction Industry

Uganda is not cushioned from the issues that affect all other developing countries especially in Africa in as far as OSH is concerned. Literature suggests that the construction industry is top on the list of the three most hazardous workplaces in Uganda (Authman, 2010). Other statistics based on empirical research suggest that construction is the second largest contributor of workplace injuries in Uganda (Lubega, *et al.*, 2000; Irumba, 2014;). In comparison to other industries or sectors in Uganda, the average number of compensated accidents from construction based on data collected from workers compensation between 1996 and 1998 was nearly the highest, with an average slightly less than that of compensated accidents from the manufacturing sector (Lubega, *et al.*, 2000). The study further found that on the basis of fatality, the construction industry is the most dangerous. However, to be able to draw such a conclusion there would be need for adequate data to be collected over a long period to increase reliability of OSH injury statistics in Uganda.

According to Alinaitwe *et al.* (2007), there were a number of causes of accidents on construction sites from the year 2001 to 2005 and these included; burns, chemicals cuts, dust, electricity, falls, being hit by an object, machines, suffocation, trauma, vehicles, accounting for 4.5%, 0.4%, 7.8%, 1.1%, 1.1%, 14.9%, 50.2%, 10%, 0.4%, 1.5% and 8.2% of the 269 construction incidents reported at labour offices in all districts in Uganda respectively. Being hit by object was the greatest contributing cause of accident injuries in construction. In a study by Irumba, *et al.* (2014), the results showed that the three most prevalent causes of accidents in Kampala are mechanical hazards (i.e., struck by machines, vehicles, hand tools, cutting edges etc.),

being hit by falling objects and falls from height. Because most of the studies are done in different locations and in isolation, and at different times, there is no consensus on the single most accident injury cause in Uganda.

Collapses at building construction sites are major occurrences that have led to many fatalities in Uganda (Mwakali, 2006; Musoke *et al.*, 2008; Ssempogo *et al.*, 2008; Okwel, *et al.*, 2019;). Each building collapse usually accounts for many casualties at a go (Ministry of Works and Transport., 2004; Alinaitwe and Ekolu, 2014). A total of 54 building collapse deaths and 122 injuries in just four years (2004 - 2008) were counted in Uganda (Alinaitwe and Ekolu, 2014). More recently, at least 15 people were fatally injured after a the three-storied building collapsed while under construction (Atuhaire, 2020; Olukya, 2020). Another 6 workers were also killed because of the collapse of a four-storey building (Kirabo, 2020). While most accidents from collapse of buildings in busy urban centres attract attention, other accidents that happen on different sites do not and, as such, are not reported. As such, decision making concerning improvement of OSH and accident prevention in the industry becomes rather complex. Therefore, there is need for a well-developed system to aid the capturing of OSH incident data, monitoring of incidents and generating statistics to inform decision making about construction OSH in the country.

METHODS

To achieve the objectives of this study, process modelling (PM) was used. PM was done to describe the current system or process of reporting, recording, monitoring and managing OSH incidents in Uganda's construction industry. PM involved process discovery through extensive content analysis of peer reviewed literature and the OSH legislation in Uganda, process mapping using Business Process Model and Notation (BPMN) 2.0 in Microsoft Visio 2016 (OMG, 2011; Hantos and Cameron, 2001; Silver, 2011) and process verification (Dubois *et al.*, 2013). The developed process model was internally verified to check its consistence with the BPMN 2.0 rules of process modelling and then empirically verified through semi-structured interviews administered to Subject Matter Experts (SMEs). The SMEs were presented with the developed as-is process model for verification and thereafter asked to discuss the as-is process, highlighting its prevailing weaknesses. The SMEs were selected purposively based on their level of experience in OSH incident reporting, management and monitoring. The experience of all the SMEs interviewed was at least 5 years thereby increasing the internal validity of the responses. The SMEs comprised two Labour Officers (LOs), two Health and Safety Officers (HSO), two OSH Inspectors, one Police Officer and one Medical Personnel. All the data obtained were analysed qualitatively and possible solutions, based on the findings, proposed.

RESULTS AND DISCUSSION

The Process of Reporting, Recording, Monitoring and Managing Construction OSH Incident

Results from process discovery showed that the major sub processes in the reporting, recording, monitoring and managing of OSH incidents in Uganda are; Workplace incident reporting management, recording and compensation sub process (WIRMR&C); Hospitalisation of Victim sub process (HOS); Incident reporting to the Police sub process (IR2P) and; and the National Incident Reporting, Management, Monitoring sub process (NIRMM) (see Fig 1).

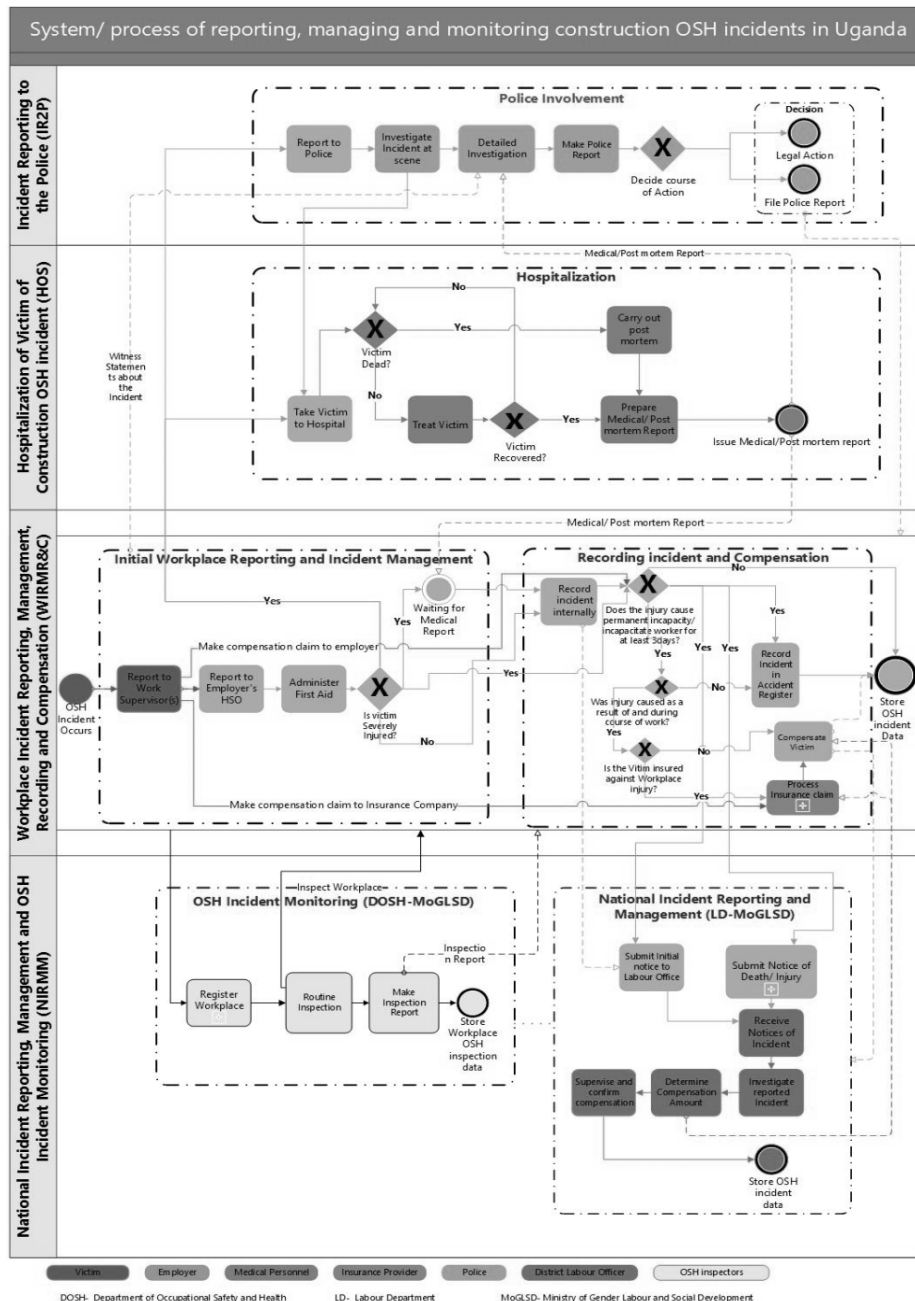


Fig 1: As-is process of reporting, recording, monitoring and managing OSH incidents Workplace incident reporting management, recording and compensation sub process (WIRMR&C)

This sub process is subdivided into two parts i.e., Initial workplace incident reporting and management: and Incident recording and compensation.

Initial workplace incident reporting and management.

When an OSH incident occurs on a construction site, the victim or witnesses of the incident immediately report to the work supervisor(s). This report is done verbally as it is assumed that there is proximity between the victim or witnesses and the work supervisor(s). The supervisor then reports the incident to the Health and Safety Officer (HSO) who is directly concerned with managing OSH on the construction site. The HSO may also receive the report directly from the victim or witnesses. On receiving the incident report, the HSO administers First Aid (FA) to the victim. After administration of FA, the HSO assesses the level of injury and then decides whether

or not to hospitalize the patient. In case there is no injury, or the injury is minor i.e. (injury for which first aid suffices), the HSO can proceed to record the incident internally.

Incident recording and compensation

This part of the WIRMR&C sub process starts with recording of the incident internally in a format specified by the individual construction organizations where it occurred. The internal record is made so as to capture as much raw information about the accident as soon as it occurs, and it is usually as comprehensive as possible. It also forms a basis for the company to learn from incident and thus perform better in as far as OSH is concerned, going forward. After recording the incident internally, the HSO records the details of the incident in the accident register by the employer which is mandatory for all construction sites as provided by the Factories Act (1953). Incident recording ends when the employer stores the incident record for future reference.

The process of compensation is either initiated by a claim from the victim that suffered injury during an OSH incident, or the person entitled to compensation in case of death or by an employer in the event that the victim is insured (Workers Compensation Act, 2000). In instances where the victim is insured against workplace/ occupational injury, s/he may make an insurance claim for compensation immediately after the incident occurs or allow the employer to claim on his/ her behalf. The insurance provider then goes ahead to process the claim and decide on whether to grant it, differ it, or reject it. The processing of the claim includes assessment of the validity of the claim, checking if the insurance covers such injury and whether the injury was sustained during the course of employment. In instances where it is established that injury suffered by the victim warrants compensation, and that such injury was sustained during the course of work, but the injured victim was not insured against workplace injury, the employer goes ahead to compensate the victim, an amount that the statutes deem fit or, an amount agreed to by or an amount mutually agreed between the employer and the victim with the notification of the LO (Workers Compensation Act, 2000). The compensation process is deemed complete when the victim or claimant is compensated.

Hospitalisation Sub process (HOS)

Hospitalisation is done in case of severe injury and in cases where there are no medical personnel to attend to the victim's injuries. It starts with taking the victim to health facility for treatment or postmortem in case of death. It is the responsibility of the employer to take the victim to hospital. The costs of Hospitalisation at this point are borne by the employer as provided by the Section 11(1) of the (Workers Compensation Act, 2000). Once the victim is hospitalized, the employer waits for a medical report but can proceed and record the incident internally (see Fig 1).

Incident Reporting to Police Sub process (IR2P)

In instances of severe injury leading to immediate death of the victim the HSO reports to the Police upon occurrence of the incident. The Police then go ahead to investigate the incident on site, and thereafter take the victim to hospital for a postmortem to the hospital. The Police then initiate a thorough investigation of the incident by collecting information from witnesses and the medical report from the Hospitalisation sub process. This is then followed with a detailed report about the incident which is availed to all stakeholders in hard copy form on request.

National OSH Incident Reporting, Management and OSH Incident Monitoring sub process (NIRMM)

This sub process is divided into two parts: National OSH incident reporting and management; and OSH Incident monitoring

National incident reporting and management

National incident reporting is also known as Organizational incident reporting (Probst, *et al.*, 2019). National OSH incident reporting is done in instances where the incident is of such magnitude to warrant compensation to the victim, i.e., either results in permanent incapacity; or incapacitates the worker for at least three consecutive days from earning full wages at the work at which he or she was employed. It commences with notification to the area Labour Officer (LO), who is an officer under the Labour Department (LD) of MoGLSD. This notification is expected to be done immediately after the incident has occurred. The Workers Compensation Act under Section 10 (1) provides that "...after the happening of an accident causing injury to a worker of such a nature as would entitle him or her to compensation under this Act, the employer shall, at once, report the accident either by telephone, telegram, telefax or telex or any other reasonable means to the labour officer of the area; and the report shall be followed immediately by a written report of the accident before the worker has voluntarily left the employment in which he or she was injured". The employer is also required to give a formal notice of the incident in a manner specified by the 'Minister' (Factories Act, 1953). The LD Form 31 and is the formal tool used for notification to the LO in case of an accident-causing injury to a worker. In case of death as a result of the incident, the LD Form 78 is also submitted along with the LD Form 31 (Alinaitwe *et al.*, 2007). These forms are completed manually and then delivered by mail of hand delivery to the District Labour office (Workers Compensation Act, 2000). Once these notices are submitted the LO, incident management at State level begins. OSH Incident management at National level is done by the LD under the Directorate of Labour, Employment, Occupational Safety and Health of the MoGLSD. After receipt of the notice, the LO launches an investigation into the reported incident to the effect that it is established the compensation due to the victim (see Fig 1). This investigation may include interviews with the victim, medical examinations by registered medical practitioner to determine the level of incapacity and assess disability as a result of the incident and to establish the compensation due to the victim. The LO then communicates to the employer and/ insurance company about the compensation due and supervises the process of compensation. Finally, a comprehensive report is written, by the LO and the incident data filed for future reference at the LD.

OSH incident monitoring

Monitoring of OSH incidents in the construction industry is done by DOSH which works in collaboration with the LD. Monitoring involves inspection of the construction workplace by OSH inspectors regularly or upon the occurrence of an incident to assess whether OSH incidents are managed in a proper manner as provided for in the OSH legal framework. For instance, the OSH inspector on work inspection checks the accident register to ensure that incidents in the workplace are recorded in the accident register and that appropriate action was taken to ensure that appropriate action was taken to compensate or provide remedies to the victim. Inspections are also done so as to assess the OSH environment before registering workplaces in order to limit the likelihood of occurrence of construction OSH incidents.

On presenting the process model describing the process of reporting, recording, monitoring and managing construction OSH incidents in Uganda, the SMEs found the process correctly represented by the researchers. However, a modification was suggested to the WIRMR&C sub process by a HSO to include post incident management at workplaces. This modification was included in the final process model (see Fig 1).

Weaknesses Identified in Reporting, Recording, Monitoring and Managing Construction OSH Incidents

From the interviews with the SMEs, the following weaknesses were identified in the as-is system of reporting, recording and management of construction OSH incidents:

Lack of reporting to the Labour Department

Due to the inattention, lack of awareness of legal reporting requirements and burden of completing paperwork, most of the HSOs and site workers do not report accidents occurred in the sites via notice of accident form to the respective LOs. "They consider that involvement of the LO would create additional distress", said a LO. Further, it was revealed unavailability of a stringent monitoring process for following up the law has debilitated the need of reporting. According to one of the interviewed LOs, some contractors find the penalty given for the failure of reporting incidents to the LO affordable and would rather not report OSH incident but pay if later discovered. According to the Workers Compensation Act (2000), failure to report an incident according to the LO attracts a fine of only 10 currency points. One of the interviewed HSO said that "... some contractors opt to settle the incident amicably with the victim without reporting the case to the LOs for the sake of protecting their public image".

Lack of reporting of minor incidents

As per the (Factories Act, 1953), it is compulsory for all factories and construction sites to report accidents and injuries caused to a worker if the worker is absent for three working days due to an OSH incident. Therefore, the accidents that categorised under "less than three working days from earning full wages at the work" are not reported to any authorised body as there is no legal requirement in the law. Many organisations also do not pay attention to reporting and recording such minor incidents or near misses at the workplace and this usually leads to recurrence and/ escalation into major accidents because no strategies are developed to prevent or counter them.

Unavailability of a centralised recording of incidents

The current incident reporting, recording and management system is decentralised, with all stakeholders maintaining their own record of each reported incident. It was thus observed that, instituting a centralised recording system is a burning need to formalize a precise and efficient reporting and recording process which is considered as one of the main causes of incident under reporting. There is lack of integration between relevant authorities concerned with National incident reporting and monitoring. For instance, the DOSH and LD do not share an OSH incident database.

Only the employer can give notice of incident to National OSH Managers
National level OSH incident reporting is a mandate of the employer as per the legal framework that governs OSH in Uganda. As such the current system does not provide for third parties to make notices about construction accidents to the LD. This implies that the reporting of an incident that occurs at a workplace remains to the discretion of the employer, which at times encourages underreporting of OSH incidents.

Poor relationship between Insurance companies and the Labour Department

Many construction employers have insured their employees against the liability of workers' injury. Therefore, in a case of an OSH incident which warrants compensation the employer informs the LO and the insurance company simultaneously in order to claim the compensation for the victim(s). Even though the insurance companies should have an information flow between them and the LD, they are not bound to maintain a proper affiliation with the LD during such information sharing.

Poor relationship between Hospitals, Police and Labour Department

The Hospitals, Police and the Labour department are fundamental institutions that handle different aspects of incident management and reporting. However, these usually carry out their investigations independent of each other and many times have contradictory findings. The sharing of information between them during investigation of a construction OSH incident is also limited by a number of factors including, bureaucracy and the politics surrounding the incident, as put by an OSH inspector. Also, a delay in investigations by one of the institutions may affect the management of an OSH incident. *"...the police investigations take long to complete, and the police report depends on the medical reports...we only submit a police report of the incident in hardcopy to the labour office on request"*, said the Police officer. *"Information sharing among these institutions therefore needs improvement"* said a LO.

Suggested Measures for Improvement of the Reporting System/ Process

As discussed above, the current process of reporting, recording and managing construction incidents has a number of loopholes which could be responsible for incident underreporting and poor incident record keeping at workplace and national level, which makes the process of monitoring the OSH in the construction industry a rather complex endeavour. As such the current process is inadequate in addressing the issue of underreporting and management of construction OSH incidents in Uganda. These challenges are not unique to Uganda as studies carried out in developing economies are seen to have similar challenges (Nawarathna and Nayanthara, 2014). Recommendations are thus made for the design of a web-based incident reporting and monitoring system to facilitate incident reporting and management in Uganda's construction industry. The recommended system should be designed in such a manner that it has a centralized relational database; user interphases for the envisaged users; allows for user registration and security as suggested by a LO; ensures anonymity of reporters (especially whistle-blowers) as suggested by a HSO; provide for reporting of minor incidents; and it should be compatible with the OSH legal framework of Uganda as suggested by the Police Officer, the 2 LO and an OSH inspector. Such a system would address the issue of timely delivery of incident reports and encourages better recording and retrieval. Additionally, being web-based would make the system accessible to reporters in all parts of Uganda, thereby improving the practice of incident reporting. The web-based systems have been found effective in improving OSH incident reporting and management in developed countries. For instance, in the UK, the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) was revised in 2013 and an ICT web-based system put in place to capture data on OSH incidents. This improved the reporting and management of OSH incidents (HSE, 2013; Ellis Whittam, 2017). If considered, the recommended system would go a long way in addressing underreporting and improving OSH management.

CONCLUSIONS

This research was conducted in pursuit of three objectives: to describe the current process of OSH incident reporting, recording and management in the construction industry; to identify the weaknesses in the process; and to suggest measure(s) to improve incident reporting in Uganda's construction industry. The as-is system was described. Generally, the as-is system is rather reactive and there is poor data storage that does not facilitate effective statistical analysis of incident data and decision making on OSH in the country. The weaknesses identified in the as-is system included: lack of reporting to the LD; decentralised recording; lack of provisions for reporting minor incidents, to mention a few. The researchers suggest that some of these weaknesses can be tackled through the design and implementation of a web-based incident reporting and recording system. The proposed system would need to be commensurate with the legal framework that governs OSH and provide additional benefits such as instant statistical reports about OSH and whistle-blower reporting.

REFERENCES

- Alinaitwe, H and Ekolu, S (2014) Failure of structure in East Africa with focus on the causes of failures in the construction phase, *In: S Ekolu, M Dundu and X Gao (Eds) Proceedings of the First International Conference on Construction Materials and Structures*, Amsterdam, Netherlands: IOS Press, 76-85.
- Alinaitwe, H, Mwakali, J A and Hansson, B (2007) Analysis of accidents on building construction sites reported in Uganda during 2001-2005, *In: CIB World Building Congress*, 1208-1221.
- Atuhaire, K (2020) *Nine Dead, Scores Feared Trapped After Kampala Building Collapse*, Available from: <https://www.monitor.co.ug/News/National/Nine-dead-scores-feared-trapped-after-Kampala-building-collapse/688334-5548294-o6oppm/index.html> [Accessed 30 May 2020].
- Authman, H (2010) *Construction Industry Most Hazardous Workplace in Uganda*, Available from: <https://ugandaradionetwork.com/story/construction-industry-most-hazardous-workplace-in-uganda> [Accessed 30 May 2020].
- DOSH (2018) *Department of Occupational Safety and Health, Annual Report 2017/18*, Kampala: Department of Occupational Safety and Health.
- Dubois, C, Famelis, M, Gogolla, M, Nobrega, L, Ober, I, Seidl, M and Völter, M (2013) Research questions for validation and verification in the context of model-based engineering, *In: International Workshop on Model Driven Engineering, Verification and Validation - MoDeVVA 2013*, Oct 2013, USA, Miami, 67-76.
- Ellis Whittam (2017) What is RIDDOR? Available from: <https://elliswhittam.com/blog/riddor/> [Accessed 5 September 2019].
- Hangos, K and Cameron, I (2001) *Process Modelling and Model Analysis*, San Diego: Academic Press.
- HSE (2013) *RIDDOR - Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013*, London: Health and Safety Executive, Available from: <http://www.hse.gov.uk/riddor/index.htm> [Accessed 5 September 2019].
- ILO (2012) *Improvement of National Reporting, Data Collection and Analysis of Occupational Accidents and Diseases (Safework)*, Available from: https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_207414.pdf [Accessed 13 July 2021].

- Irumba, R (2014) Spatial analysis of construction accidents in Kampala, Uganda, *Safety Science*, **64**, 109-120.
- Kirabo, J (2020) *Building in Kansanga Collapses and Kills Six*, Available from: <https://nilepost.co.ug/2020/01/09/building-in-kansanga-collapses-and-kills-six/> [Accessed 30 May 2020].
- Lubega, H A, Kiggundu, B M and Tindiwensi, D (2000) *An Investigation into the Causes of Accidents in the Construction Industry in Uganda*, Available from <https://www.irbnet.de/daten/iconda/CIB8913.pdf> [Accessed 13 July 2021].
- Ministry of Works and Transport (2004) *Bwebajja Building Accident Report*, Entebbe, Uganda.: Ministry of Works and Transport.
- MoGLSD (2004) *Occupational Safety and Health Profile for Uganda*, Kampala: Ministry of Gender, Labour and Social Development.
- Musoke, C, Muwanga, D and Sempogo, H (2008) Eight crushed at NSSF building site, *The New Vision Newspaper*, **23**(207).
- Mwakali, J A (2006) A review of the causes and remedies of construction related accidents: The Uganda experience, In: J A Mwakali and G Tabani-Wani (Eds.) *Proceedings from the International Conference on Advances in Engineering and Technology*, Entebbe: Elsevier, 285-300.
- Nawarathna, R and Nayanthara, D S (2014) Reporting procedure of construction accidents in Sri Lanka, In: *The 3rd World Construction Symposium 2014: Sustainability and Development in Built Environment*, Columbo, 460-470.
- Okwel, M, Alinaitwe, H and Kalumba, D (2019) Health and safety performance in the Ugandan construction industry, In: P Manu, F Emuze, T A Saurin, B H W Hadikusumo (Eds.) *Construction Health and Safety in Developing Countries*, London: Routledge, 324.
- Olukya, G (2020) *Uganda: 15 Die as Under-Construction Building Collapses Incident Takes Place on Outskirts of Capital Kampala*, Available from: <https://www.aa.com.tr/en/africa/uganda15-die-as-under-construction-building-collapses/1836139> [Accessed 30 May 2020].
- OMG (2011) *Object Management Group: Business Process Model and Notation (BPMN) Version 2.0*, Available from: <https://www.omg.org/spec/BPMN/2.0/PDF> [Accessed 2020 October 14].
- Peckit, S, Glendon, A and Booth, R (2004) Societal influences on safety culture in the construction industry, In: S Rowlinson (Eds.) *Construction Safety Management Systems*, London: Spon Press.
- Probst, T and Estrada, A (2010) Accident under-reporting among employees: Testing the moderating influence of psychological safety climate and supervisor enforcement of safety practices, *Accident Analysis and Prevention*, **1**(42), 1438-1444.
- Probst, T M, Bettac, E and Austin, C (2019) Accident underreporting in the workplace, In: E Elgar (Ed.) *Increasing Occupational Health and Safety in Workplaces*, Cheltenham, UK: Edward Elgar Publishing, 30-47.
- Silver, B (2011) *BPMN Method and Style: BPMN Implementer's Guide, 2nd Edition*, Aptos, Calif: Cody-Cassidy Press.
- Sempogo, H (2008) Survivors rescued after 24 hours, *The New Vision Newspaper*, **23**(23).
- Workers Compensation Act (2000) *Uganda Legal Information Institute*, Available from: <https://ulii.org/ug/legislation/consolidated-act/225> [Accessed 15 September 2019].