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Uncovering Construction On-Site Theft in Malaysia

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Abstract— *Construction on-site theft poses a significant challenge to the Malaysian construction industry, affecting project profitability through direct and indirect costs. This research aims to minimise construction theft by identifying its contributing factors, assessing its impacts, and proposing effective control measures. A quantitative research approach was adopted, using a five-point Likert scale questionnaire distributed to contractors and quantity surveyors in Klang Valley, Malaysia. A total of 105 responses were collected through non-probability sampling, combining judgmental and snowball methods. The study identified six main factors contributing to construction theft, with the top three being: (1) Days and Times (vulnerable periods), (2) Inferior Security Measures, and (3) High Cost of Construction Goods. The most significant impacts of theft were: (1) Costly Project Delays, (2) Monetary Loss, and (3) Higher Insurance Premiums. In terms of prevention, twelve control measures were proposed, with the top three being: (1) Security Fencing and Gates, (2) Security Lighting, and (3) CCTV and Alarm Systems. Findings also revealed differing perceptions between contractors and quantity surveyors regarding theft causes, impacts, and solutions. This research provides valuable insights for industry practitioners, promoting improved security strategies and aiming to reduce construction on-site theft in Malaysia effectively.*

Keywords— *Contractor, On-Site, Theft, Security, Construction Management.*

I. Introduction

Construction on-site theft is known as the transferral of any material or equipment from a construction site without any authorisation (Yulia, 2008). It can also be defined as the act of stealing the other's personal property from construction sites with the intent to deprive the rightful owner of the property (Farinloye et al., 2009).

The problem of theft in construction sites is a worldwide phenomenon. In the building business, it is the most frequent kind of crime. Theft is a genuine concern on building sites, according to Berg and Hinze (2005). Theft has a direct influence on the success of a construction project. It reduces the potential profitability of a project in the form of direct costs and indirect costs. Direct costs are the replacement costs of stolen items while the indirect costs are the additional cost of insurance and on-site security management (Fadiya et al., 2013). In general, contractor will bear the indirect costs of a project, which will only increase with the project progresses; therefore, they will impact the project's profitability (Patre and Ugale, 2020). Construction on-site theft has damaging monetary impacts on construction projects. In such a case, this research is very significant to identify the contributory factors and impacts of construction on-site theft, and outline the control measures to minimise construction on-site theft in Malaysia.

II. Problem Statement

The problem of construction on-site theft is one of the major concerns of the construction industry, and it is getting more and more serious with the rising prices of building materials and equipment. According to research by Zainal Abidin and Md Zain (2019), theft is the most common criminal activity on construction sites in Malaysia. The problem of construction theft has troubled the nation for years. In the year 2016, two excavators were stolen from the construction sites in the Klang Valley (The Sun Daily, 2016). Besides, in Kuching, a gang of thieves stole construction materials such as aluminium window frames from a construction site (Veno, 2020). Furthermore, construction theft has increased during the COVID-19 pandemic: a total of three construction on-site thefts were reported in the year 2021. In Subang Jaya, electricity cables worth about RM20 000 were stolen from a construction site in April (Zolkepli, 2021). In July 2021, construction scaffolding was stolen from a construction site near Miri Airport (Laeng, 2021a).; in October 2021, a man was arrested for stealing cables at a Miri construction site (Laeng, 2021b). These are only the reported cases, and there are still many more that are not reported by the construction companies.

Concerning the issue, the construction industry will face more losses resulting from construction on-site theft if there is no action taken. Other countries have studied and evaluated several measures to combat the theft: security prevention awareness, staff crime prevention awareness, on-site security, perimeter protection and site arrangement (Farinloye et al., 2009). However, construction on-site theft has not received much attention from Malaysian researchers; hence, there is a need to conduct a research to identify the contributory factors and impacts of construction on-site theft, and discover the control measures to minimise construction on-site theft in Malaysia.

III. Research Aim and Objectives

The primary aim of this research is to explore strategies for minimising construction on-site theft in Malaysia. In pursuit of this aim, the study will first seek to identify the various factors that contribute to the occurrence of theft on construction sites, such as inadequate security measures, internal collusion, and poor inventory management. Following this, the research will examine the impacts of such theft on the construction industry, including financial losses, project delays, and reputational damage to stakeholders. Finally, the study will focus on outlining effective control measures and preventive strategies that can be implemented to reduce the incidence of theft, thereby enhancing site security and overall project efficiency.

IV. Significant of the Research

The findings of this research will benefit construction practitioners in Malaysia as they can learn more about construction on-site theft. This research helps them to understand that the contributory factors are important in reducing construction on-site theft. Determination of control measures alone is not an effective way to solve the problem of construction on-site theft. In the process of solving problems, it is always necessary to suit the remedy to the case. Once the construction practitioners fully understand the factors contributing to the construction theft, they can link the factors, impacts and measures together, and adopt the most appropriate strategies to prevent the construction on-site theft.

V. Literature Review

The construction industry in Malaysia, while contributing only 3.6% to the national GDP, remains a cornerstone of the country's socio-economic development due to its extensive linkages with other sectors such as manufacturing, real estate, and services (Ibrahim et al., 2010; DOSM, 2022). Despite its importance, the industry has faced increasing vulnerabilities in recent years, especially during the COVID-19 pandemic, which triggered prolonged site shutdowns and economic uncertainty. These disruptions exacerbated an already growing concern—construction on-site theft—which presents significant risks to contractors and developers alike (Tan et al., 2020; Anjumin, 2021).

Construction on-site theft involves the unauthorized removal of construction materials, tools, or equipment from job sites, either by external actors or internal staff (Farinloye et al., 2009). Such thefts not only lead to direct monetary losses but also cause indirect damage, including delayed project timelines, increased insurance premiums, and erosion of company reputation. Theft incidents can broadly be categorized into three types: (1) insider theft by workers familiar with site logistics and security gaps; (2) opportunist thefts by passersby or nearby residents who act when conditions are favorable; and (3) professional thefts by organized groups targeting high-value assets such as machinery, appliances, or metals (Boba & Santos, 2008; Clarke & Goldstern, 2003).

In Malaysia, construction on-site theft has become increasingly prevalent, particularly in urbanized and economically active regions such as Selangor, Sarawak, and Kuala Lumpur. Many of these thefts remain unreported, especially when the value of the stolen goods falls below insurance deductibles (Farinloye et al., 2013). The pandemic-induced economic strain—job losses, rising material costs, and supply shortages—further contributed to the problem. For example, the cost of raw materials such as steel, copper, and aluminium surged significantly, making them attractive targets for theft (Kok, 2022; Nordin, 2020).

A review of the literature identifies six key contributory factors to construction on-site theft. First, location and accessibility play a major role; sites in densely populated urban areas with poor perimeter protection are more likely to experience theft (Simukonda & Kamwela, 2021; Sakurai et al., 2008). Second, theft often occurs during specific timeframes, such as weekends, nights, or public holidays, when site supervision is minimal (Corcoran et al., 2019; Boba, 2022). Third, the high cost of construction goods makes materials such as timber, cement, or copper targets due to their resale value (Nelson, 2021; Ekolu et al., 2014). Fourth, inferior security measures, including lack of fencing, surveillance, or access control, create an enabling environment for theft (Abas et al., 2018; Schnerider, 2014). Fifth, unfair labor practices, such as abrupt terminations or unpaid wages, can lead disgruntled employees to steal as a form of retaliation (Guerin, 2022; Berg & Hinze, 2005). Lastly, financial need, particularly when tied to gambling, debt, or family obligations, can motivate insider theft, especially when such needs are unshareable (Moorthy, 2015; Yekini et al., 2018).

The consequences of on-site theft are substantial. Monetary losses from replacing stolen tools or materials reduce the profit margin for contractors, especially when the original pricing was based on earlier, lower market rates (Steven & Smolders, 2022). Project delays are also common, as critical equipment or materials may take days or weeks to replace, affecting completion timelines and possibly incurring liquidated damages (Haas et al., 2022; Carney, 2015). In some cases, frequent theft claims lead to increased insurance premiums, as insurers factor higher risk into their pricing models (Higham et al., 2016; Sherraden et al., 2018). If claims are too frequent or costly, insurance policies may be canceled, leaving contractors without coverage (Miller, 2018; Senn, 2017). The loss of company reputation is another long-term consequence, as clients may hesitate to award future projects to firms associated with poor site security (Netscher, 2018). Additionally, operator downtime resulting from stolen equipment can disrupt daily workflows and reduce overall productivity (Carney, 2015).

To mitigate these risks, the literature emphasizes a multifaceted approach involving both human and technological interventions. One key area is staff security awareness. Educating employees on their responsibilities related to site security—through handouts, briefings, or training—can foster a culture of vigilance (York & MacAlister, 2015; Fennelly, 2019). Developing and enforcing on-site security policies, such as indelible property marking, equipment immobilization, and the use of VINs and PINs for machinery tracking, increases the likelihood of recovering stolen items and deters theft (Farinloye et al., 2013; IMIA, 2005).

Perimeter protection is another critical layer. This includes physical barriers like fences and gates, combined with deterrent technologies such as CCTV, alarm systems, and security lighting. Lighting in particular has been shown to improve visibility and reduce crime at night, especially when paired with surveillance systems (Wadoud & Saleh, 2018; Ablordeppey et al., 2020). Employing security guards—either alone or with dogs—and implementing random patrol schedules can further reduce theft incidents (Gregory, 2015; Chapple et al., 2021). Posting warning signs such as "No Trespassing" or "Surveillance in Operation" may discourage amateur thieves from entering the site (Purpura, 2018).

Lastly, site layout planning contributes significantly to theft prevention. Locating site offices and storage areas in controlled-access zones limits exposure to theft. Implementing secure storage solutions, such as lockable metal containers for

tools and designated compounds for plant equipment, further enhances protection (Sherratt, 2015; Tanner & Lane, 2022). The adoption of a just-in-time (JIT) delivery strategy can also minimize the presence of excess materials on site, reducing opportunities for theft (Sherratt, 2015).

In summary, the literature clearly demonstrates that construction on-site theft is a growing concern in Malaysia, driven by a combination of socio-economic and site-specific factors. The impacts are far-reaching, affecting financial performance, project timelines, and organizational reputation. A comprehensive theft prevention strategy—encompassing workforce education, site security policies, perimeter technologies, and smart layout planning—is essential for mitigating risks and enhancing the resilience of Malaysia's construction industry.

VI. Research Methodology

This study adopts a quantitative research methodology to investigate the factors, impacts, and control measures associated with construction on-site theft in Malaysia. The chapter presents a detailed framework outlining the research design, sampling methods, data collection procedures, pilot study, and data analysis techniques. The methodological approach is grounded in standard practices for empirical research in construction management and criminology, as guided by Kothari (2004) and Kumar (2018).

A structured questionnaire was employed as the primary research instrument, designed to gather standardized data from respondents across the Malaysian construction industry. The questionnaire was divided into several sections to capture demographic information, perceptions on contributory factors, theft impacts, and control measures. It was distributed online via Google Forms to ensure accessibility and reach during COVID-19 restrictions.

The design process was informed by literature and previous case studies, ensuring the items reflect key dimensions of on-site theft risk. The instrument primarily used a five-point Likert scale, allowing respondents to indicate the extent of their agreement or perception of each variable. The clarity of questions and logical flow was emphasized to minimize response bias and maximize response rates.

The study employed non-probability sampling techniques, specifically judgmental and snowball sampling, to target professionals with direct experience in construction project execution and security management. The sample population included CIDB Grade 7 contractors and quantity surveyors based in Klang Valley—two groups representing distinct but complementary perspectives on construction security: one from site operations and the other from cost control. The target sample size was 120, with 150 questionnaires distributed. A total of 105 valid responses were received—53 from contractors and 52 from quantity surveyors—achieving the desired representativeness for comparative analysis

Primary data were collected through the online questionnaire, while secondary data were drawn from desk-based research, including academic journals, reports, and official publications related to construction crime, security policies, and statistical methodologies. This triangulation enhanced the validity of the findings. To validate the questionnaire and ensure clarity, a pilot study was conducted among 20 construction-related students. This process revealed the need for simplification of terminology and shortening the questionnaire to reduce respondent fatigue. Feedback from the pilot study led to refined phrasing and structure of several items

The data analysis followed a structured, multi-step approach using SPSS statistical software. The following analytical tools were employed. Frequency Distribution used to describe the demographic profile of the respondents and provide an overview of data spread across categories (e.g., age, role, experience). Descriptive Statistics applied to identify and rank the importance of contributory factors, impacts, and control measures. The mean score was the central tendency metric used to rank variables. Cronbach's Alpha employed to test the internal consistency and reliability of the Likert scale-based items. Mann-Whitney U Test which is a non-parametric test used to examine statistically significant differences in perceptions between the two key respondent groups, contractors and quantity surveyors regarding contributory factors, impacts, and control measures. This test was appropriate due to the ordinal nature of the data and the independence of sample groups. A p-value threshold of 0.05 was used to determine significance (Kwak & Kim, 2017). If $p \leq 0.05$, the null hypothesis (no difference) was rejected

VII. Results and Discussion

The results derived from the structured questionnaire distributed to professionals within Malaysia's construction industry. The aim was to evaluate the factors contributing to construction on-site theft, its impacts, and the control measures adopted by contractors and quantity surveyors. Out of 150 distributed questionnaires, 105 valid responses were received, comprising 53 contractors and 52 quantity surveyors operating in the Klang Valley region. Respondents varied in age and work experience, with the majority falling between 31–50 years of age. Experience levels ranged from less than 5 years to over 15 years. Five responses were excluded due to insufficient awareness of on-site theft, leaving 100 qualified participants for final analysis. To ensure the consistency and reliability of the questionnaire, Cronbach's Alpha analysis was conducted. All tested items yielded alpha values above 0.8, indicating strong internal reliability. This statistical validation supports the robustness of the questionnaire in capturing consistent and credible data across the measured dimensions

The findings of this study confirm that several critical factors contribute to the occurrence of construction on-site theft in Malaysia, aligning with the literature while also offering context-specific insights. The top-ranked factor was the days and times during which theft occurs, with respondents overwhelmingly agreeing that theft is more likely to happen during weekends, public holidays, or after working hours when surveillance is minimal and sites are less active. This is consistent with earlier findings by Simukonda and Kamwela (2021) and Corcoran et al. (2019), who noted that theft incidents typically increase during periods of low site activity.

The second most significant factor identified was inferior security measures, which include inadequate perimeter fencing,

poor lighting, lack of surveillance systems, and absence of access control. Many respondents indicated that sites lacking these features become easy targets for both opportunistic and organized theft. This finding supports previous research by Abas et al. (2018), who emphasized that weak site security infrastructure facilitates unauthorized access and increases theft risk. Moreover, Boba and Santos (2008) noted that poor security not only attracts external criminals but also enables insider theft, where workers exploit security gaps for personal gain. The high cost of construction goods emerged as the third most influential factor. Because of the increasing cost of materials like steel, copper, and wood, which has been made worse by interruptions in the world supply chain, building sites have become appealing targets for burglars. Respondents noted that items with high resale value are particularly vulnerable. This aligns with the findings of Nelson (2021) and Ekolu et al. (2014), who argued that economic factors such as inflation, shortages, and increased demand make valuable materials attractive to both organized crime groups and individual perpetrators. The Mann-Whitney U test revealed statistically significant differences between contractors and quantity surveyors in their evaluation of this factor. Quantity surveyors, who are more attuned to cost fluctuations and budgetary impacts, perceived material value as a more critical driver of theft than contractors, who prioritized physical site vulnerabilities. This distinction reflects their respective professional roles—quantity surveyors focus on cost control and procurement, while contractors manage physical operations and site access. Other contributing factors such as unfair labour practices and financial need also received moderate agreement, particularly in cases involving insider theft. Some respondents highlighted that workers facing wage delays, layoffs, or poor treatment may resort to theft as a form of retaliation or financial survival. This is corroborated by Guerin (2022) and Moorthy (2015), who emphasized the psychological and economic motivations behind employee theft in the construction industry.

The study analyzed and ranked six key impacts of construction on-site theft in Malaysia, drawing on responses from a diverse group of participants in terms of age, profession, and experience. Using a Likert scale, respondents identified "Costly Project Delay" as the most significant impact, with a mean score of 4.27, reflecting strong agreement that theft-induced shortages of materials, tools, and machinery cause major project delays. These delays result from the time needed to replace stolen goods, which can range from hours for common items to weeks or months for customized or imported materials, thereby disrupting project schedules (Haas, Huschbeck, and Markovič, 2022). In Malaysia, such delays are typically treated as excusable non-compensable, meaning contractors receive no compensation and are liable to pay liquidated damages as penalties (Romzi and Doh, 2022). The second highest impact was "Monetary Loss" with a mean of 4.20, emphasizing the substantial financial consequences theft imposes. This includes direct costs to replace stolen items and indirect costs such as enhanced security measures, fines, and administrative expenses, which can exceed direct losses by two to ten times (Farinloye et al., 2009). The lowest-ranked impact was "Loss of Company Reputation" with a mean of 3.23. Although frequent theft and associated delays can harm a company's reputation, in the Malaysian context, other issues like poor quality, safety record, contract disputes, and frequent claims tend to have a more pronounced effect on reputation (Carney, 2015). Overall, all six impacts scored above 3.00, indicating consensus that theft causes notable negative effects on construction projects in Malaysia, with costly delays and financial losses being the primary concerns among industry professionals.

The Mann-Whitney U test revealed only one impact, namely I5= "Downtime for Operators", with a p-value of 0.036, was significantly differed between the contractor and quantity surveyor. Contractors play a vital role in construction management through effective planning, scheduling, and managing manpower, which enables them to handle various on-site issues efficiently (Adros and Abidin, 2019). When construction on-site theft occurs, contractors typically act swiftly to reallocate resources and arrange for the replacement of stolen items to minimise operator downtime and reduce both time and cost losses, thereby preventing significant project delays. Because of their proactive management, contractors may not regard "Downtime for Operators" as a major impact of theft. Furthermore, the findings indicate that contractors and quantity surveyors share similar perceptions regarding several critical impacts of construction theft, including costly project delays, monetary loss, increased insurance premiums, cancellation of insurance policies, and loss of company reputation, with statistical analysis showing no significant difference in their views (p-values above 0.05). Construction theft leads to substantial direct and indirect costs, such as increased project expenses, higher insurance premiums, risk of insurance cancellation, and diminished bonding and borrowing capacity (Berg and Hinze, 2005; Shrestha and Osborne, 2019). Contractors are acutely aware of these consequences through their practical experience, while quantity surveyors, who focus on cost management and insurance matters, also recognise these impacts. Thus, their shared professional responsibilities and experiences explain the alignment in perceptions regarding the adverse effects of construction on-site theft.

The study identified and ranked control measures against construction on-site theft in Malaysia, revealing "Security Fencing and Gates" as the most effective measure with a mean score of 4.50. This is consistent with findings by Ablordeppy et al. (2020), who emphasized that fencing and gates are widely used to secure construction site perimeters by preventing unauthorized entry. Hesna et al. (2019) further supported this, noting that construction projects without fencing and guarding services are more vulnerable to theft. However, large infrastructure and residential projects often face challenges in implementing fencing due to their size, making materials like sand, bricks, and tiles susceptible to theft. The second most effective control was "Security Lighting," which scored a mean of 4.42 and is crucial for deterring theft during nighttime by improving visibility, as thieves commonly operate under cover of darkness (Ablordeppy et al., 2020; Abas et al., 2018). Conversely, the "Adoption of Vehicle Identification Number (VIN) and Product Identification Number (PIN) Scheme" was rated lowest, with a mean of 3.30, though it remains important

for tracking stolen machinery and aiding recovery efforts through detailed identification records (Road Transport Department of Malaysia, 2021). Despite the differences in ranking, all twelve control measures assessed had mean scores above 3.00, indicating broad recognition of their role in combating construction site theft in Malaysia.

Based on Mann-Whitney U test, the analysis of control measures against construction on-site theft in Malaysia reveals contrasting perceptions between contractors and quantity surveyors. Quantity surveyors rated "Site Office in an Area with Limited Access" (C10) more highly than contractors, with mean ranks of 56.43 and 44.57 respectively, indicating that contractors are less convinced of the importance of this measure. This difference can be attributed to the nature of their work environments, as contractors typically have more on-site experience and practical knowledge, whereas quantity surveyors primarily work in offices. Supporting this, Sharma and Bausmans (2010) reported that theft of office equipment on construction sites is rare, and site offices are generally secured when unattended, which may explain contractors' lower concern about restricted access to site offices. In contrast, contractors gave a higher mean rank of 57.54 to "Staff Awareness and Responsibilities on Company Security Policies" (C11) compared to 43.45 by quantity surveyors, highlighting contractors' stronger agreement with the significance of staff vigilance and adherence to security policies. Given the large and complex nature of construction sites, contractors recognise the necessity of comprehensive security policies that clearly define the duties of all personnel to monitor the site, report suspicious activities, and safeguard company assets. Simukonda and Kamwela (2021) emphasize that such policies foster a security-conscious culture among workers, which contractors experience first-hand. On the other hand, quantity surveyors, working mostly in office settings, may not be as engaged with or exposed to these on-site security dynamics, resulting in differing views on the effectiveness of certain control measures.

VIII. Conclusion

This research provides a comprehensive analysis of construction on-site theft in Malaysia, focusing on the key contributory factors, impacts, and control measures while highlighting differences in perceptions between contractors and quantity surveyors. The study identified that the most significant factors contributing to theft include specific days and times, inadequate security measures, and the high cost of construction goods, with quantity surveyors showing greater sensitivity to the cost factor compared to contractors who, based on their practical on-site experience, consider expensive goods difficult to steal despite their value. Regarding impacts, costly project delays and monetary losses were ranked highest, though perceptions differed concerning operator downtime, where contractors were less concerned due to their ability to reschedule work and prevent idling of resources, unlike quantity surveyors who viewed this as a more significant impact. The control measures deemed most effective by respondents included security fencing and gates, security lighting, CCTV and alarm systems, guarding services, and limited access points, although differences emerged in opinions about site office access restrictions and staff awareness, reflecting the distinct roles and experiences of contractors and quantity surveyors on-site versus office-based work. This research contributes significantly to the field by addressing a gap in Malaysian-focused studies and offering practical implications for construction practitioners to tailor theft prevention strategies effectively, based on a clear understanding of contributory factors and appropriate controls. However, limitations such as a small sample size, limited prior local research, and potential data biases restrict the generalizability of the findings. To overcome these limitations, future research is recommended to expand sample sizes, include a broader range of industry professionals, extend data collection periods, and investigate theft issues across different types of construction projects to provide more targeted and effective security solutions. Overall, this study establishes a foundational understanding of construction on-site theft in Malaysia and provides valuable insights for both practitioners and future researchers.

References

[1]. Abas, N. H., Shomad, M. S. R., Hasmori, M. F.,Deraman, R., Abdullah, A. H., Nagapan, S. and Jailani, J., 2018. Study on Construction Materials and Machinery Losses Among Contractors in Klang Valley. Asian Journal of Technical Vocational Education And Training, [online] Available at: <https://www.researchgate.net/publication/326922069_Study_on_Construction_Materials_and_Machinery_Losses_Among_Contractors_in_Klang_Valley> [Accessed 28 July 2022].

[2]. Ablordeppey, E. E., Moo, F., Akortsu, W. and Mustapha, A., 2020. Minimizing Theft on Construction Sites in Ghana: The Perspective of Contractors in the Upper West Region of Ghana. Civil and Environmental Research, [online] Available at: <https://www.iiste.org/Journals/index.php/CER/article/viewFile/52552/54312> [Accessed 4 August 2022].

[3]. Adros, N. A. and Abidin, N. Z., 2019. An Investigation of the Diversification Roles of Contractor. Journal of Management, 2(2), pp.1-12. https://doi.org/10.33215/sjom.v2i2.93

[4]. Anjumin, E., 2021. Father of Three Jailed One Year for Stealing Zinc Sheets. New Straits Times, [online] 1 July. Available at: <https://www.nst.com.my/news/crime-courts/2021/07/704044/father-three-jailed-one-year-stealing-zinc-sheets> [Accessed 26 July 2022].

[5]. Anon, 2021. BMAM Hopes State Government Can Extend Operating Hours for Construction Sites. New Straits Times, [online] 26 November. Available at: <https://www.nst.com.my/news/nation/2021/11/749024/bmam-hopes-state-government-can-extend-operating-hours-construction sites#:~:text=KUALA%20LUMPUR%3A%20The%20Master%20Builders,6pm%20on%20Mondays%20to%20Saturdays.> [Accessed 27 August 2022].

[6]. Ashby, M. P. J., Bowers, A. J., Borrion, H. and Fujiyama, T., 2017. The When and Where of An Emerging Crime Type: The Example of Metal Theft from the Railway Network of Great Britain. Security Journal, 30, pp.1-23. https://doi.org/10.1057/sj.2014.43

[7]. Axia Public Relations, 2021. Eight Ways a Construction Company Can Manage Damage to Its Reputation. [online] Available at: <https://www.axiapr.com/blog/eight-ways-a-construction-company-can-manage-damage-to-its-reputation#:~:text=There%20are%20plenty%20of%20possible,to%20complete%20projects%20on%20time.> [Accessed 1 August 2022].

[8]. Aziz, A., 2020. Local Manufacturers Hit By Low Supply of Raw Materials from China. The Malaysian Reserve, [online] 17 February. Available at: < https://themalaysianreserve.com/2020/02/17/local-manufacturers-hit-by-low-supply-of-raw-materials-from-china/ > [Accessed 28 July 2022].

[9]. Baker, P. R. and Benny, D. J., 2016. The Complete Guide to Physical Security. [e-book] Boca Raton, CRC Press. Available at: Google Books <https://books.google.com.my/books?id=0AfMBQAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 4 August 2022].

[10]. Basias, N. and Pollalis, Y., 2018. Quantitative and Qualitative Research in Business and Technology: Justifying a Suitable Research Methodology. Review of Integrative Business and Economics Research, 7(1), pp.91-105.

[11]. Bass, C., 2019. Anti-Crime Measures: Protect Your Home, Family, and Business with These Proactive Measures. [e-book] BookRix. Available at: Google Books <https://books.google.com.my/books?id=4rBcDwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 4 August 2022].

[12]. Berg, R. and Hinze, J., 2005. Theft and Vandalism on Construction Sites. Journal of Construction Engineering and Management, 131(7), pp.826-833. http://dx.doi.org/10.1061/(ASCE)0733-9364(2005)131:7(826)

[13]. Bernard, T. J., 2020. Theft. [online] Available at: <https://www.britannica.com/topic/theft> [Accessed 25 July 2022].

[14]. Boba, R. and Santos, R., 2008. A Review of the Research, Practice, and Evaluation of Construction Site Theft Occurrence and Prevention: Directions for Future Research. Security Journal, 21(4), pp.246-263. http://dx.doi.org/10.1057/palgrave.sj.8350063

[15]. Boba, R., 2022. Crime Analysis with Crime Mapping. [e-book] California, SAGE Publications. Available at: Google Books <https://books.google.com.my/books?id=xHtdEAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 27 July 2022].

[16]. Bohn, J. S. and Teizer, J., 2010. Benefits and Barriers of Construction Project Monitoring using Hi-Resolution Aautomated Cameras. [online] Available at: <https://www.researchgate.net/publication/264625392_Benefits_and_Barriers_of_Construction_Project_Monitoring_using_Hi-Resolution_Automated_Cameras> [Accessed 14 March 2023].

[17]. BQSM, 2022. Official Website Board of Quantity Surveyors Malaysia: Registered Member. [online] Available at: <https://www.bqsm.gov.my/en/registered-member/#> [Accessed 6 March 2023].

[18]. Brooksbank, D., 2017. Security Manual. [e-book] New York, Routledge. Available at: Google Books <https://books.google.com.my/books?id=G-tADgAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 4 August 2022].

[19]. Canton Police Department, n.d. Construction Site Crime Prevention. [online] Available at: <https://www.canton-mi.org/DocumentCenter/View/503/Construction-Site-Theft-Prevention-PDF?bidId=> [Accessed 4 August 2022].

[20]. Carney, K., 2015. Securing the Outdoor Construction Site: Strategy, Prevention, and Mitigation. [e-book] Cambridge, Butterworth-Heunemann. Available at: Google Books <https://books.google.com.my/books?id=Bt-oBAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 4 August 2022].

[21]. Cavas, M. and Baballe, M. A., 2019. A Review Advancement of Security Alarm System Using Internet of Things (IoT). International Journal of New Computer Architectures and Their Applications, 9(2), pp.38-49. http://dx.doi.org/10.17781/P002617

[22]. Chapple, M., Stewart, J. M. and Gibson, D., 2021. (ISC)2 CISSP Certified Information Systems Security Professional Official Study Guide. [e-book] Canada, Wiley & Sons Inc. Available at: Google Books <https://books.google.com.my/books?id=kSw0EAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 4 August 2022].

[23]. CIDB, 2020. Standard Operating Procedure for Construction Industry to Operate During Movement Control Period. [online] Available at: <https://www.zulrafique.com.my/ckfinder/userfiles/files/SOP%20for%20Construction%20Industry%20to%20Operate%20During%20MCO%20(1).pdf> [Accessed 27 July 2022].

[24]. CIDB, 2022. Centralised Information Management System: Registered Contractor. [online] Available at: <https://cims.cidb.gov.my/smis/regcontractor/reglocalsearchcontractor.vbhtml?language=2> [Accessed 6 March 2023].

[25]. Clark, R. and Goldstein, H., 2003. Reducing Theft at Construction Site: Lessons from Problem-Oriented Project. In: Community Oriented Pilicing Services, US Department of Justice, University of Wisconsin Legal Studies Research Paper No. 1338. Devon, United Kingdom, 2003. United Kingdom: Criminal Justice Press.

[26]. Clough, R. H., Sears, G. A., Sears, S. K., Segner, R. O. and Rounds, J. L., 2015. Construction Contracting: A Practical Guide to Company Management. [e-book] Canada, Wiley & Sons Inc. Available at: Google Books <https://books.google.com.my/books?id=wCPWBgAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 30 July 2022].

[27]. Collins, P. A., Ricks, T. A. and Meter, C. W. V., 2015. Principles of Security and Crime Prevention. [e-book] New York, Routledge. Available at: Google Books <https://books.google.com.my/books?id=Sv3qBgAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 29 July 2022].

[28]. Corcoran, J., Zahnow, R., Kimption, A., Wickes, R., and Brunsdon, C., 2019. The Temporality of Place: Constructing a Temporal Typology of Crime in Commercial Precincts. SAGE Journals, 48(1), pp.9-24. https://doi.org/10.1177%2F2399808319846904

[29]. Davies, S. J. and Fennelly, L., 2019. The Professional Protection Officer: Practical Security Strategies and Emerging Trends. [e-book] Cambridge, Butterworth-Heunemann. Available at: Google Books <https://books.google.com.my/books?id=kMzBDwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 4 August 2022].

[30]. Devi, P. S., 2017. Research Methodology: A Handbook for Beginners. [e-book] Chetpet, Notion Press. Available at: Google Books <https://books.google.com.my/books?id=IW4zDwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 8 August 2022].

[31]. DOSM, 2020a. Quarterly Construction Statistics, First Quarter 2020. [online] Malaysia. Available at <https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=Nmlsdzgwa3k1dHNkVW5zL2pTcFBhdz09> [Accessed 25 July 2022].

[32]. DOSM, 2020b. Quarterly Construction Statistics, Second Quarter 2020. [online] Malaysia. Available at <https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=TWxzVlA3L2lkYksxOWpjS3d6c3hHQT09> [Accessed 25 July 2022].

[33]. DOSM, 2020c. Quarterly Construction Statistics, Third Quarter 2020. [online] Malaysia. Available at <https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=S3JOelBSUCtWT2JjOHEycDE2M3NiUT09> [Accessed 25 July 2022].

[34]. DOSM, 2020d. Quarterly Construction Statistics, Fourth Quarter 2020. [online] Malaysia. Available at <https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=RllTZE4xQjcrU1RzeHEwNkg2aXlwZz09> [Accessed 25 July 2022].

[35]. DOSM, 2021a. Quarterly Construction Statistics, First Quarter 2021. [online] Malaysia. Available at <https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=dXlmU1ozUEcwMHVRYTNKV1pQZStYQT09> [Accessed 25 July 2022].

[36]. DOSM, 2021b. Quarterly Construction Statistics, Second Quarter 2021. [online] Malaysia. Available at <https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=a2FWNDR2TXZOOVN0SFlZcUN2cjhIZz09> [Accessed 25 July 2022].

[37]. DOSM, 2021c. Quarterly Construction Statistics, Third Quarter 2021. [online] Malaysia. Available at <https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=U0Fqc2FEOCtBVmlRa3NSNlBVSzMyQT09> [Accessed 25 July 2022].

[38]. DOSM, 2022. Quarterly Construction Statistics, First Quarter 2022. [online] Malaysia. Available at <https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=TFBpblYyMlg4UVgyalUzOHJ5V1lhdz09> [Accessed 25 July 2022].

[39]. DOSM, 202d. Quarterly Construction Statistics, Fourth Quarter 2021. [online] Malaysia. Available at <https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=Uys3d0QyUUw5Y1NlOFBQU1FJS3c2dz09> [Accessed 25 July 2022].

[40]. Edike, U. E. and Babatunde, A., 2017. Crime Management on Construction Sitre: A Study of Ogun State, Nigeria. Covenant Journal of Research in the Built Environment, 5(1), pp.32-47.

[41]. Ekolu, S. O., Dundu, M., Gao, X., 2014. Construction Materials and Structures. [e-book] Amsterdam, IOS Press. Available at: Google Books <https://books.google.com.my/books?id=Qj8oBgAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 28 Julyt 2022].

[42]. Elfil, M. and Negida, A., 2017. Sampling Methods in Clinical Research; an Educational Research. Archives of Academic Emergency Medicine, [online] Available at:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5325924/> [Accessed 8 August 2022].

[43]. Faber, J. and Fonseca, L. M., 2014. How Sample Size Influences Research Outcomes. Dental Press Journal of Orthodontics, 19(4), pp.27-29. https://doi.org/10.1590%2F2176-9451.19.4.027-029.ebo

[44]. Fadiya, O. O., Georgakis, P., Chinyio, E. and Akadiri, P., 2013. Analysing the Perceptions of UK Building Contractors on the Contributors to the Cost of Construction Plant Theft. Journal of Financial Management of Property and Construction, 18(2), pp.128-141. http://dx.doi.org/10.1108/JFMPC-10-2012-0039

[45]. Farinloye, O., Odusami, K. and Adewunmi, Y., 2013. Theft and Vandalism Control Measures on Building Sites in Lagos, Nigeria. Journal of Engineering, Project, and Production Management, 3(1), pp.9-21. http://dx.doi.org/10.32738/JEPPM.201301.0003

[46]. Farinloye, O., Ogunsanmi, O. E., Adenuga, O. A. and Emuveyan, O. A., 2009. Theft and Vandalism on Building Sites (Case Study, Lagos, Nigeria). In: Department of Buildings Universiti of Lagos, Global Innovation in Construction Conference 2009. Lagos, Nigeria, 2009. United Kingdom: Loughborough University, Civil and Building Engineering.

[47]. Fateh, M. A. M., Arshad, R. A. and Hamzah, F. H., 2020. The Undair Welfare Pratices towards Foreign Workers in the Malaysian Construction Industry. [online] Available at: <https://www.researchgate.net/publication/353395938_THE_UNFAIR_WELFARE_PRACTICES_TOWARDS_FOREIGN_WORKERS_IN_THE_MALAYSIAN_CONSTRUCTION_INDUSTRY> [Accessed 14 March 2023].

[48]. Fennelly, L. and Perry, M., 2016. Physical Security: 150 Things You Should Know. [e-book] Cambridge, Butterworth-Heunemann. Available at: Google Books <https://books.google.com.my/books?id=PIOPDAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 2 August 2022].

[49]. Fennelly, L., 2016. Efective Physical Security. [e-book] Cambridge, Butterworth-Heunemann. Available at: Google Books <https://books.google.com.my/books?id=v0y0DAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 2 August 2022].

[50]. Fennelly, L., 2019. Handbook of Loss Prevention and Crime Prevention. [e-book] Cambridge, Butterworth-Heunemann. Available at: Google Books <https://books.google.com.my/books?id=rxPCDwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 27 July 2022].

[51]. Fischer, R. J., Halibozek, E. P. and Walters, D.C., 2018. Introduction to Security (Tenth Edition). [e-book] Cambridge, Butterworth-Heunemann. Available at: Science Direct Books <https://www.sciencedirect.com/science/article/pii/B9780128053102000159> [Accessed 25 June 2022].

[52]. Ganti, A., 2023. Central Limit Theorem (CLT): Definition and Key Characteristics. [online] Available at: <https://www.investopedia.com/terms/c/central_limit_theorem.asp> [Accessed 6 March 2023].

[53]. Ghani, Z. A., 2017. A Comparative Study of Urban Crime between Malaysia and Nigeria. Journal of Urban Management, 6(1), pp.19-29. https://doi.org/10.1016/j.jum.2017.03.001

[54]. Gomeseria, R., 2019. Planning, Design and Construction – Safety and Security Policy. CEAI ViewPoint Journal, pp.34-42. http://dx.doi.org/10.17605/OSF.IO/4MPD2

[55]. Grant, T. A., 2022. Auravana Habitat System. [e-book] Auravana Project. Available at: Google Books <https://books.google.com.my/books?id=I8J6EAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 7 August 2022].

[56]. Greenhalgh, B., 2016. Introduction to Construction Contract Management. [e-book] New York, Routledge. Available at: Google Books <https://books.google.com.my/books?id=5ujLDAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 30 July 2022].

[57]. Gregory, P., 2015. CISSP Guide to Security Essentials. [e-book] United States, Cengage Learning. Available at: Google Books <https://books.google.com.my/books?id=zt27BwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 6 August 2022].

[58]. Guerin, L., 2022. The Essential Guide to Workplace Investigations: A Step-By-Step Guide to Handling Employee Complaints and Problems. [e-book] California, Nolo Press. Available at: Google Books <https://books.google.com.my/books?id=8uhcEAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 29 July 2022].

[59]. Haas, O., Huschbeck, T. and Markovic, P., 2022. Effects of Theft on the Critical Path of Construction Project. [online] Available at: <https://www.researchgate.net/publication/359541412_Effects_of_Theft_on_the_Critical_Path_of_Construction_Projects> [Accessed 30 July 2022].

[60]. Hemmens, C. and Walker, A., 2015. Larceny – Theft. The Encyclopedia of Crime and Punishment, [online] Available at: <https://www.researchgate.net/publication/314620292_Larceny-Theft> [Accessed 25 July 2022].

[61]. Hesna, Y., Hasan, A., Nurhamidah, N. and Yosa, A. F., 2019. The Effect of Local Crime on Construction Projects in Padang City. Internaational Journal on Advanced Science Engineering Information Technology, 9(5), pp.1550-1555. http://dx.doi.org/10.18517/ijaseit.9.5.4204

[62]. Higham A., Bridge, C. and Farrell, P., 2016. Project Finance for Construction. [e-book] New York, Routledge. Available at: Google Books <https://books.google.com.my/books?id=sWquDQAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 31 July 2022].

[63]. Hoyer, W. D., Maclnnis, D. J., Pieters, R., Chan, E. and Northey, G., 2017. Consumer Behaviour: Asia-Pacific Edition. [e-book] Victoria Australia, Cengage Learning AU. Available at: Google Books <https://books.google.com.my/books?id=JRpSDwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 4 August 2022].

[64]. Hughes, P. and Ferrett, E., 2015. Introduction to Health and Sefaty at Work. [e-book] New York, Routledge. Available at: Google Books <https://books.google.com.my/books?id=futzCgAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 11 August 2022].

[65]. Ibrahim, R. Roy, M. H., Ahmed, Z. and Imtiaz, G., 2010. An investigation of the Status of the Malaysian Construction Industry. Benchmarking: An International Journal, 17(2), pp.294-308. https://doi.org/10.1108/14635771011036357

[66]. IES, 2016. Guide for Security Lighting for People, Property, and Critical Infrastructure. [online] Available at: <https://cdn.fedweb.org/fed-96/2/IES%2520Security%2520Lightingn%2520G-1_web.pdf> [Accessed 4 August 2022].

[67]. Igwenagu, C., 2016. Fundamental of Research Methodology and Data Collection. [online] Available at: <https://www.researchgate.net/publication/303381524_Fundamentals_of_research_methodology_and_data_collection> [Accessed 8 August 2022].

[68]. IMIA, 2005. Theft of Construction Plant & Equipment. [online] Available at: <https://www.imia.com/wp-content/uploads/2013/05/wgp4305.pdf> [Accessed 2 August 2022].

[69]. Kennewick Police Department, n.d. Controlling Theft and Vandalism at Construction Sites. [online] Available at: <https://www.go2kennewick.com/DocumentCenter/View/3206/Controlling-Theft-And-Vandalism-At-Construction-Sites-PDF> [Accessed 5 August 2022].

[70]. Kok, Y. F., 2022. Challenges Remain for Construction Sector as Ukraine War and Lockdowns in China Push Costs Up. The Straits Times, [online] 18 April. Available at: <https://www.straitstimes.com/singapore/challenges-remain-for-construction-sector-as-ukraine-war-and-lockdowns-in-china-push-costs-up> [Accessed 26 July 2022].

[71]. Kothari, C. R., 2004. Research Methodology: Methods and Techniques. [e-book] Delhi, New Age International. Available at: Science Direct Books <https://books.google.com.my/books?id=hZ9wSHysQDYC&printsec=frontcover#v=onepage&q&f=false> [Accessed 8 August 2022].

[72]. Kumar, R., 2018. Research Methodogy: A Step-By-Step Guide for Beginners. [e-book] California, SAGE Publications. Available at: Science Direct Books < https://books.google.com.my/books?id=uSxUDwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 8 August 2022].

[73]. Kwak, S. G. and Kim, J. H., 2017. Central Limit Theorem: The Cornerstone of Modern Statistics. [online] Available at: <https://www.researchgate.net/publication/315764152_Central_limit_theorem_The_cornerstone_of_modern_statistics> [Accessed 6 March 2023].

[74]. Laeng, J., 2021a. Three Men in Miri Arrested for Allegedly Breaking into Construction Site. Borneo Post Online, [online] 6 July. Available at:

<https://www.theborneopost.com/2021/07/06/three-men-in-miri-arrested-for-allegedly-breaking-into-construction-site/> [Accessed 17 July 2022].

[75]. Laeng, J., 2021b. Man Caught Red-Handed Stealing Cables at Construction Site. Borneo Post Online, [online] 20 October. Available at: <https://www.theborneopost.com/2021/10/20/man-caught-red-handed-stealing-cables-at-construction-site/> [Accessed 17 July 2022].

[76]. Laerd Statistics, n.d. Kruskal-Wallis H Test using SPSS Statistics. [online] Available at: <https://statistics.laerd.com/spss-tutorials/kruskal-wallis-h-test-using-spss-statistics.php> [Accessed 11 August 2022].

[77]. Landoll, D., 2021. The Security Risk Assessment Handbook: A Complete Guide for Performing Security Risk Assessments. [e-book] Boca Raton, CRC Press. Available at: Google Books <https://books.google.com.my/books?id=P2g7EAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 2 August 2022].

[78]. Lowe, N. L., 2019. What Is a Pilot Study? [online] Available at: <https://www.jognn.org/article/S0884-2175(19)30006-1/pdf> [Accessed 9 August 2022].

[79]. Mahbobi, M. and Tiemann, T. K., 2015. Chapter 1. Description Statistics and Frequency Distributions. [online] Available at: <https://opentextbc.ca/introductorybusinessstatistics/chapter/descriptive-statistics-and-frequency-distributions-2/> [Accessed 11 August 2022].

[80]. Marshall, D. R., Frieden, B. and Fessler, D. W., 2015. Minority Perspectives. [e-book] New York, Routledge. Available at: Google Books <https://books.google.com.my/books?id=vT9PEAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 27 July 2022].

[81]. Miller, R. M., 2018. Business Lay Today, Comprehensive. [e-book] United States, Cengage Learning. Available at: Google Books <https://books.google.com.my/books?id=bc5yEAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 1 August 2022].

[82]. Mincks, W. R. and Johnston, H., 2016. Construction Jobsite Management. [e-book] United States, Cengage Learning. Available at: Google Books <https://books.google.com.my/books?id=ZnIcCgAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 2 August 2022].

[83]. Moorthy, M. K., Seetharaman, A., Jaffar, N. and Yeap, P. F., 2015. Employee Perceptions of Workplace Theft Behavior: A Study Among Supermarket Retail Employees in Malaysia. Ethics and Behavior, 25(1), pp.61-85. https://doi.org/10.1080/10508422.2014.917416

[84]. Morgan, R. D., 2019. The SAGA Encyclopedia of Criminal Psychology. [e-book] California, SAGE Publications. Available at: Google Books <https://books.google.com.my/books?id=ZtS-DwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 29 July 2022].

[85]. National Equipment Register, 2016. 2016 Annual Theft. [online] Available at: <https://www.ner.net/annual-theft-report/> [Accessed 15 July 2022].

[86]. National Police Academiy Hyderabad, 2015. Standards for Physical Security Management in Industry. [online] Available at: <https://www.svpnpa.gov.in/images/npa/pdfs/CompletedResearchProject/35_standardizationofphysicalsecurity.pdf> [Accessed 5 August 2022].

[87]. Nelson, P., 2021. $ 1.04 Million Lost in Pikes Peak Region Construction Site Thefts So Far in 2021. Koaa News5, [online] 8 September. Available at: <https://www.koaa.com/news/deep-dive/1-04-million-lost-in-pikes-peak-region-construction-site-thefts-so-far-in-2021> [Accessed 26 July 2022].

[88]. Netscher, P., 2018. What Impacts Your Construction Company's Reputation? [online] Available at: <https://www.clockshark.com/blog/what-impacts-your-companys-reputation#:~:text=A%20poor%20reputation%20may%20result,company%20with%20a%20bad%20reputation.> [Accessed 31 July 2022].

[89]. Nordin, R., 2020. Six Nabbed Over Construction Theft Worth RM700k in Johor, Seven Still At Large. The Star Online, [online] 19 May. Available at: <https://www.thestar.com.my/news/nation/2020/05/19/six-nabbed-over-construction-theft-worth-rm700k-in-johor-seven-still-at-large> [Accessed 28 July 2022].

[90]. OSWCA, 2016. Crime Stoppers. [online] Available at: <https://www.oswca.org/stolen-heavy-equipment.php> [Accessed 26 July 2022].

[91]. Patre, A. D. and Ugale, A. B., 2020. Indirect Cost in Construction Project. Aegaeum Jounal, [online] Available at: <http://aegaeum.com/gallery/agm.j-3129.107-f.pdf> [Accessed 15 June 2022].

[92]. Police Service of Northern Ireland, 2016. A Guide to Crime Prevention through Property Marking. [online] Available at: <https://www.psni.police.uk/globalassets/graphics/rp83--guide-to-property-marking-tri-fold.pdf> [Accessed 4 August 2022].

[93]. Pro-Vigil, 2021. 8 Ways to Prevent Construction Site Theft Right Now. [online] Available at: <https://pro-vigil.com/blog/how-to-prevent-theft-at-construction-site/#:~:text=Construction%20sites%20often%20contain%20valuable,no%20exception%20to%20this%20rule.> [Accessed 26 July 2022].

[94]. Purpura, P. P., 2013. Security and Loss Prevention (Sixth Edition). [e-book] Cambridge, Butterworth-Heunemann. Available at: Science Direct Books <https://www.sciencedirect.com/science/article/pii/B9780123878465000127> [Accessed 25 July 2022].

[95]. Purpura, P. P., 2018. Security and Loss Prevention: An Introduction. [e-book] Cambridge, Butterworth-Heunemann. Available at: Google Books <https://books.google.com.my/books?id=4zo8DwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 4 August 2022].

[96]. Rapp, R. R. and Benhart, B. L., 2015. Construction Site Planning and Logistical Operations: Site-Focused Management for Builders. [e-book] Indiana: West Lafayette, Purdue Univversity Press. Available at: Google Books <https://books.google.com.my/books?id=Ql7yDwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 7 August 2022].

[97]. Rapp, R. R., 2011. Disaster Recovery Project Management: Bringing Order from Chaos. [e-book] Indiana: West Lafayette, Purdue Univversity Press. Available at: Google Books <https://books.google.com.my/books?id=Lvg-U48oubUC&printsec=frontcover#v=onepage&q&f=false> [Accessed 27 July 2022].

[98]. Road Transport Department of Malaysia, 2021. WMI Malaysia Code Application. [online] Available at: <https://www.jpj.gov.my/en/web/main-site/teknikal-kenderaan-en/-/knowledge_base/technical/world-manufacturer-identifier-wmi-malaysia-code-application-> [Accessed 4 August 2022].

[99]. Romzi, N. A. and Doh, S. I., 2022. Underlaying Causes of Construction Project Delay: A Review. Journal of Universiti Malaysia Pahang, 2(2), pp.7-11. https://doi.org/10.15282/construction.v2i2.7775

[100]. Ruth, O. N., Njiiri, M. P. and Lilian, O., 2019. Handbook of Climate Change Resilience. [e-book] Switzerland, Springer Cham. Available at: Springer Books < https://link.springer.com/referencework/10.1007/978-3-319-93336-8> [Accessed 26 June 2022].

[101]. Sajjad Kabir, S. M., 2016. Methods of Data Collection. [online] Available at: <https://www.researchgate.net/publication/325846997_METHODS_OF_DATA_COLLECTION> [Accessed 10 August 2022].

[102]. Sakurai, Y., Mayhew, P. and White, M., 2008. Theft and Vandalism at Residential Building Sites in Australia. [online] Available at: <https://www.aic.gov.au/sites/default/files/2020-05/tbp029.pdf> [Accessed 27 July 2022].

[103]. Scaglione, B. J., 2019. Security Management for Healthcare: Proactive Event Prevention and Effective Resolution. [e-book] Boca Raton, CRC Press. Available at: Google Books <https://books.google.com.my/books?id=ONqMDwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 2 August 2022].

[104]. Scalisi, T., 2022. Construction Site Theft: Impact and Prevention. [online] Available at: <https://www.levelset.com/blog/construction-site-theft/#Higher_costs> [Accessed 15 June 2022].

[105]. Schnerider, S., 2014. Crime Prevention: Theory and Practice. [e-book] Boca Raton, CRC Press. Available at: Google Books <https://books.google.com.my/books?id=0pHaBAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 28 July 2022].

[106]. Senn, M. A., 2017. Commercial Real Estate Leases: Preparation, Negotiation, and Forms. [e-book] United States, Wolters Kluwer. Available at: Google Books <https://books.google.com.my/books?id=AjNaEAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 31 July 2022].

[107]. Shane, E. and Keith, M. C., 2015. Disconnected America: The Future of Mass Media in a Narcissistic Society. [e-book] New York, Routledge.

Available at: Google Books <https://books.google.com.my/books?id=w765CAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 27 July 2022].
[108]. Sherraden, M., Birkenmaier, J. and Collins J. M., 2018. Financial Capability and Asset Building in Vulnerable Households: Theory and Practice. [e-book] United States, Oxford University Press. Available at: Google Books <https://books.google.com.my/books?id=6rJSDwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 31 July 2022].
[109]. Sherratt, F., 2015. Introduxtion to Construction Management. [e-book] New York, Routledge. Available at: Google Books <https://books.google.com.my/books?id=cYEcBgAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 7 August 2022].
[110]. Simukonda, W. and Kamwela, N., 2021. The Management of Theft and Vandalism on Construction Jobsites in the Southern Region of Malawi. Journal of Construction Business and Management, 5(1), pp.47-59. https://doi.org/10.15641/jcbm.5.1.
[111]. Stefanakis, A. I., 2018. Constructured Wetlands for Industrial Wastewater Treatment. [e-book] Canada, Wiley & Sons Inc. Available at: Google Books <https://books.google.com.my/books?id=uYgTEAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 7 August 2022]
[112]. Steven, M. and Smolders, J., 2022. Understanding Australian Construction Contractors: A Guide for Emerging Professionals. [e-book] New York, Routledge. Available at: Google Books <https://books.google.com.my/books?id=cY9yEAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 30 July 2022].
[113]. Stewart, J. M., 2021. Comp TIA Security+ Review Guide. [e-book] Canada, Wiley & Sons Inc. Available at: Google Books <https://books.google.com.my/books?id=uYgTEAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 4 August 2022].
[114]. Tan, T, Carvalho, M., Sivanandam, H. and Rahim, R., 2020. Nearly 100, 000 Malaysians Have Lost Jobs Since Start of MCO, Says HR Ministry. The Star Online, [online] 9 December. Available at: <https://www.thestar.com.my/news/nation/2020/12/09/nearly-100000-malaysians-have-lost-jobs-since-start-of-mco-says-hr-ministry> [Accessed 26 July 2022].
[115]. Tanner, P. and Lane, S., 2022. The City and Guilds Textbook: Plumbing Book 1, Second Edition: For the Level 3 Apprenticeship (9189), Level 2 Technical Certificate (8202), Level 2 Diploma (6035) & T Level Occupational Specialisms (8710). [e-book] Hodder Education. Available at: Google Books < https://books.google.com.my/books?id=ks5xEAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 7 August 2022].
[116]. Tanner, P., 2019. The City and Guilds Textbook: Book 2 Electric Installations for the Level 3 Apprenticeship (5357), Level 3 Advanced Technical Diploma (8202) & Level 2 Diploma (2365). [e-book] Hodder Education. Available at: Google Books <https://books.google.com.my/books?id=5Ls7DwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 3 August 2022].
[117]. Tavakol, M. and Dennick, R., 2011. Making Sense of Cronbach's Alpha. International Journal of Medical Education, 2, pp.53-55. https://doi.org/10.5116%2Fijme.4dfb.8dfd
[118]. The Sun Daily, 2016. Gang Specialising in Stealing Excavators from Construction Sites Nabbed. The Sun Daily, [online] 25 August. Available at: <https://www.thesundaily.my/archive/1949643-NSARCH390240> [Accessed 17 June 2022].
[119]. Turney, S., 2022. Central Limit Theorem | Formula, Definition & Examples. [online] Available at: <https://www.scribbr.com/statistics/central-limit-theorem/> [Accessed 6 March 2023].
[120]. Uakarn, C., Chaokromthong, K. and Sintao, N., 2021. Sample Size Estimation using Yamane and Cochran and Krejcie and Morgan and Green Formulas and Cohen Statistical Power Analysis by G*Power and Comparisons. Apheit International Journal, 10(2), pp.76-88.
[121]. Vagias, W. M., 2020. Likert Scale Response Options. [online] Available at: <https://mwcc.edu/wp-content/uploads/2020/09/Likert-Scale-Response-Options_MWCC.pdf> [Accessed 8 August 2022].
[122]. Veno, 2016. Two Arrested for Alleged Theft of Aluminium Rods from Construction Site. Borneo Post Online, [online] 16 July. Available at: <https://www.theborneopost.com/2020/07/16/two-arrested-for-alleged-theft-of-aluminium-rods-from-construction-site/> [Accessed 17 June 2022].
[123]. Wadoud, A. A. and Saleh, A. A., 2018. A Proposed Design for Illumination and Cameras Surveillance System for Optimum Supervision at a Perimeter Area of Nuclear Facility. American Journal of Applied Sciences, 15(1), pp.84-94. https://doi.org/10.3844/ajassp.2018.84.94
[124]. Williams, Y. and Allision, J., 2015. What Is Descriptive Statistics? – Examples & Concept. [online] Available at: <https://study.com/academy/lesson/what-is-descriptive-statistics-examples-lesson-quiz.html> [Accessed 11 August 2022].
[125]. Wright, G. and Duffy, O. C., 2019. Fundamentals of Medium/Heavy Duty Commercial Vehicle Systems. [e-book] United States, Jones & Bartlett Learning. Available at: Google Books <https://books.google.com.my/books?id=gVpQEAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 4 August 2022].
[126]. Xiang, Y. S., 2022. AI and IoT Meet Mobile Machines: Towards a Smart Working Sites. [e-book] KIT Scientific Publishing. Available at: Google Books <https://books.google.com.my/books?id=XtB2EAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 5 August 2022].
[127]. Yekini, K., Ohalehi, P., Oguchi, I. and Abiola, J., 2018. Workplace Fraud and Theft in SMEs: Evidence from the Mobile Telephone Sector in Nigeria. Journal of Financial Crime, 25(4), pp.969-983. https://doi.org/10.1108/JFC-03-2017-0025
[128]. York, T. W. and MacAlister, D., 2015. Hospital and Healthcare Security. [e-book] Cambridge, Butterworth-Heunemann. Available at: Google Books <https://books.google.com.my/books?id=odacBAAAQBAJ&printsec=frontcover#v=onepage&q&f=false> [Accessed 27 July 2022].
[129]. Yulia, S., 2008. Construction Site Security Management and Control. [e-book] Malaysia, Skudai: Universiti Teknologi Malaysia. Available at: World Cat <https://www.worldcat.org/title/construction-site-security-management-and-control/oclc/960229221 > [Accessed 15 June 2022].
[130]. Zainal Abidin and Md Zain, 2019. Criminal Activities at Construction Sites. In: Department of Quantity Surveying, Faculty of Architecture, Planning and Surveying, 4th Undergraduate Seminar on Built Environment and Technology 2019. Malaysia: University Teknologi Mara.
[131]. Zolkepli, F., 2021. Man Detailed for Stealing Electric Cables at Construction Site. The Star Online, [online] 1 April. Available at: <https://www.thestar.com.my/news/nation/2021/04/01/man-detained-for-stealing-electric-cables-at-construction-site> [Accessed 17 June 2022].
[132]. Zurich, 2019. Risk Topics: Contractor's Equipment – Theft and Vandalism Protection. [online] Available at: <https://www.zurichna.com/-/media/project/zwp/zna/docs/kh/gl/contractors_equipment_theft_and_vandalism_protection_rt.pdf> [Accessed 3 August 2022].