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Liability Regulation for Construction in Indonesia

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The construction industry in Indonesia is governed by sets of rules and regulations that seek to ensure the establishment of high-quality, durable, and cost-efficient infrastructures, while eliminating the problem of construction failures. The laws analysed in this article, including the Construction Services Act, were scrutinised to determine their effectiveness in creating legally binding obligations between clients, employees, and financiers. This presentation will put forth critical analyses of issues that have been identified as influencing the capability of the Construction Service Development Board to promote the best practices within the sector. The main tools for primary data collection in this descriptive study included questionnaires, focus group discussions, and workshop interactions. Intensive data analyses revealed that uneducated workforces dominated the construction industry. Inexperienced workers were not conversant with the country's legal standards of quality structures. Therefore, the recommended practices centred on restructuring the composition of the construction industry to focus more on education, consultancy certification, training, and capacity-building.

Key words: *Construction law, competitiveness, act, legal liability, building contractors, service users.*

Introduction

For decades, the Indonesian construction sector has been considered the backbone of the country's social and economic growth (Tamin, 2013). The industry faced a significant boost in the 1900s following the introduction of advanced building technologies and procedures by Dutch engineers. According to Hermawan, Ludiro, Wibowo, Hatmoko, and Soetanto (2013), Indonesia's infrastructural development programs initially used the Dutch Republic's building guidelines and principles. Several decades after Indonesia's declaration as an independent country, the nation had not managed to put in place operational building laws. This case was

particularly disturbing, considering that the 1998 Construction Law was formulated by Dutch colonisers (Tamin, 2013; Abdullah & Yusoff 2018). In 1998, the country undertook several political reforms which placed the Indonesian construction industry into a more rigorous and efficient governance paradigm, causing an immeasurable positive influence to the sector.

The first building directive, known as the Construction Service Regulation (CSR) No.18/1999, was enacted in 1999. The implementation of the CSR was followed by the signing of decrees including the Construction Services Development Board of Indonesia (LPJK), Government Regulation No.29/2000 on Construction Service Implementation and Government Regulation No.30/2000, and Government Regulation No.28/2000 on the Business and Community Role in Construction Service (Widodo, Pranjoto, & Efendi, 2018). These protocols sought to oversee industry growth and development, the implementation of viable construction policies, and redefine the mandates of the building sector (Widjajanto, Pribadi, & Suraji, 2011). Moreover, the newly implemented legal standards of construction also sought to respond to the need for global competition and local autonomy, in addition to encouraging participation from private construction shareholders (Tamin, Tamin, Shahab, Widiasanti, & Oktavianus, 2015). These laws also addressed pertinent concerns such as the role of the society in improving the viability of Indonesia's construction industry, the need for professionalism, and effective governance.

Problem Statement

Although the continuous development of major Indonesian structures shows the stability of the sector, it remains difficult to estimate the actual industry market value. The difficulties faced in trying to predict the financial viability of the industry indicate the lack of an operational oversight body (Widiasanti & Tamin, 2015; Adisa, Adeoye & Okunbanjo 2016). Thus, the current fast pace of infrastructural development continues to evoke the need for legal measures. Widodo et al. (2018) state appropriate laws can regulate the actions of new industry entrants and government-owned businesses, including *Total Bangun Persada* and *Hutama Karya*. Monitoring Indonesia's construction services have been met with numerous challenges. The main issue has been implementing legally binding certification requirements to influence the action of certified enterprises as required by the Construction Services Development Board of Indonesia (LPJK).

Other factors that have hampered the ability of Indonesia's construction laws to exert authority on business units include the lack of professionalism (Tang, Aoieong, & Tsui, 2009; Anthony, Osho & Sen 2017). These laws do not layout guidelines to direct the supervisory roles of the Regional Work Unit, as a fundamental step in the prevention of costly and deadly construction failures. Despite these inadequacies, there is currently no documentation highlighting past efforts to ensure that construction policies are not manipulated (Trigunarsyah, 2004b). The primary study questions that this research will seek to answer are:

1. What are the leading construction laws in Indonesia that protect against construction failure?
2. What are some of the legal liabilities of construction failures in Indonesia?
3. Is the Indonesian construction industry legal framework useful in legally binding both private and public enterprises to adhere to stipulated codes?
4. What are the primary achievements of the 2016 Construction Services Bill that replaced the 1999 laws which initially governed construction procedures?
5. What are some of the challenges facing the execution of the identified laws by the Indonesian Construction Service Development Board (CSDB)?
6. What is the extent of legal, regulatory involvements in the implementation of value engineering in Indonesia?
7. What are the potential improvements that can be made to enhance the authority of Indonesian construction laws?

Literature Review

Construction Laws in Indonesia

The Indonesian construction industry regulatory body has endured numerous difficulties in trying to oversee the management of construction services. The main problems, as identified by Widjajanto et al. (2011) include time-delays, low-quality buildings, and unprecedented cost overruns that have caused adverse impacts on the country's economy. Widjajanto and colleagues (2011) grouped these concerns into two distinct categories, with one including problems arising from time, quality, and budgetary matters. The other cluster consisted of issues caused as a result of managerial inadequacies or a lack of coordination between construction workers, building material suppliers, contractors, and consultants among different groups of shareholders. These discrepancies make it necessary to enhance the level of professionalism through proper implementation, with the overall objective of supporting the quality of construction processes within technical and non-technical domains.

Construction failures in Indonesia have always been associated with the inadequacies of existing legal measures to ensure construction procedures align to both international and regional standards of quality (Willar, Coffey, & Trigunarsyah, 2015). The adverse impacts of building failures have been processed as criminal law issues as they constitute negligence by contractors and consultants (Trigunarsyah, 2004; Aldulaimi,2018). The main obstacle that contributed to the disregard for quality in construction was the increased focus on saving the reputation of businesses, rather than finding the root cause of construction failures. Worse still, unscrupulous building contractors took advantage of natural occurrences such as slight earth tremors to cover construction mistakes (Elsawalhi & Eid, 2012; Ahmad, 2018).

In probing significant laws and regulations that governed against construction failures, this paper will examine the contributions of the Law Regulation of Republic Indonesia No. 18/1999 and the Government Regulation of Republic Indonesia No.29/2000. As stipulated by the Law Regulation of Republic Indonesia, the main parties that must be involved in the event of building failures include the service provider, a specialist appraiser, and service users (Wirahadikusumah, Abduh, Messah, & Aulia, 2019). Article 26 of this rule states that if a failure in construction is confirmed to be a result of negligence by the contractors or casual laborers, then the service providers and construction planners must be held liable (Ali,2017; Purwadi, 2018). Article 27 of the Law Regulation of Republic Indonesia stipulates that parties who are found responsible for construction failures must have their licenses revoked (Tetuko, 2018). The Government Regulation of Republic Indonesia No.29/2000 addresses the issue of construction failure in articles 31 to 34 (Bakari, 2017; Widodo et al., 2018). The legislation defined construction failure as a building procedure or policy that does not adhere to work specifications which have been agreed upon by relevant construction shareholders or regulatory agencies.

Despite the contributions of the Government Regulation of Republic Indonesia and the Law Regulation of Republic Indonesia in preventing instances of building failure, a new bill was enacted to guide the reclassification of the country's construction procedures. The Construction Services Bill (CSB) of 2016 grouped building services into three major categories, including the integrated work services, consultation facilities, and consultancy (Purwadi, 2018). The law also required individuals who are qualified in the provision of stipulated functions to hold specific certifications that correspond to the position being sought (Wirahadikusumah & Pribadi, 2011). This meant that legally authorised service providers understood the specific construction project responsibilities that they were supposed to oversee (Kamara, Augenbroe, Anumba, & Carrillo, 2002). Therefore, construction companies with numerous qualifications were allowed to offer their services in cost-intensive, high technology, and risky domains, unlike service providers with fewer credentials.

The 2016 CSB also implemented numerous guidelines to guide the subcontracting processes within the Indonesian construction industry. The CSB only permitted work delegation for "specialist" tasks, following agreements between the construction user and service provider (Wirahadikusumah & Ario, 2015; Bosupeng, 2018). Furthermore, the CSB also held that regardless of the specific duties of casual laborers, they must be skilled and licensed to provide these services as evidenced by the Work Competency Certificate (WCC). As noted by Soemardi et al. (2009), the WCC is only offered to individuals who studied in legally accredited institutions and passed relevant competency tests. Most importantly, the bill also permitted refugees with essential professional competencies to fill in vacant positions. Bell (2001) also notes that the 1999 Indonesian Construction Law did not provide solutions to pertinent concerns, including the employment of qualified and experienced immigrant workers.

In a study that sought to evaluate the challenges that hinder the execution of the Construction Services Bill, Ahzahar, Karim, Hassan, and Eman (2011) revealed several issues. The main concern as identified by these researchers is globalisation, which creates a necessity to find the balance between international and Indonesia's local construction trade. Other factors identified by Wirahadikusumah et al. (2019) include local autonomy, the growing number of private and public construction partnerships, weak governance, and human resources. The Indonesian construction industry has increasingly been exposed to foreign competition, following the liberalisation of a wide range of construction goods and services by the World Trade Organisation. Although it may be enticing to think that such developments only negatively influence large commercial establishments, the statistics of Wirahadikusumah and Pribadi (2011) indicate otherwise. Wirahadikusumah and Pribadi (2011) revealed that 90% of the legally sanctioned small-scale construction companies in Indonesia are not consistent revenue generators. These findings also confirm that a majority of the less-established construction corporations may be fictitious or not have the necessary human resources and financial capabilities. These illusory construction firms are often established in regions characterised by restricted markets and inadequately informed construction users. These conditions enhanced the risks of corruption and the hiring of unqualified workers.

Another challenge that has compromised the execution of the Indonesian Construction Service Law is the increasing level of local autonomy. Hardjomuljadi (2014) maintains that local autonomy affects the ability of the federal government to regulate critical procedures. The formulation of the Local Government Law has provided local governments with more influence and authority to oversee the budgeting, planning, implementation, and follow-up procedures especially for regional building programs (Giang & Pheng, 2011). Nevertheless, the local government appears to be limited in its capacity to achieve the level of efficiency that is required to streamline all the processes involved in a construction project (Rahim, Muzaffar, Yusoff, Zainon, & Wang, 2014). Several districts or construction zones have come up with sets of rules intended to reinforce the industry's bureaucratic mechanisms (Egbu, 2004). In the long run, the application of the new complementary regulations proved to be almost impossible due to contradictions or ineffective procedures of oversight and execution by local government planners.

Dave and Koskela (2009) also identify the practice of good corporate governance as a factor that influences the application of the Construction Service Law. According to Wicaksono, (2008), the establishment of Indonesia's Construction Service Forum (CSF) was a move to ensure the adoption of good practices among both private and public building service providers. Despite the anticipated improvements of the Construction Society, there have been issues concerning the institution's capacity to streamline diverse goals and ambitions of regional shareholders. According to Winters, Karim, and Martawardaya (2014), due to a lack of tolerance and the diversity of elements constituting the Construction Service Forum, the

organisation has experienced numerous difficulties trying to fulfil its obligations. Winters and colleagues (2014) identified the need to improve the level of public participation in the planning, building, and maintenance of social amenities.

Instead, the CSF has only been given insignificant authority within the local and governmental building industry, despite being formulated to be the most powerful regulatory body. This situation has made it almost impossible for the CSF to conduct independent examinations and provide certifications to individuals or organisations seeking to offer a range of services within the construction industry. Therefore, as emphasised by Efferin, Frisko, and Hartanto (2016), it is essential that the CSDB invigorates the Construction Service Forum (CSF). Among the most sustainable procedures for repositioning the CSF include executing and reinforcing good corporate governance and leadership practices, which support capacity building among member corporations.

Legal Liability of Construction Failures in Indonesia

The term construction failure, as used within the building industry, is often associated with non-adherence to the stipulated Construction Service Law. According to Reffat (2004), the magnitude of the perceived impacts of construction failure depends on whether the structural breakdown is partial or complete, or on the central systems that have been affected by the catastrophe. The leading causes of building failures can be categorised into human errors (negligent deviations, material incompatibilities, poor planning) and natural disasters, including tsunamis (Hausler, Hart & Goodell, 2014). The Indonesian Construction Service Law lays out factors that must be considered by court systems in determining a party's legal liability. The standard procedure often involves establishing their adherence to written construction agreements, conventional building standards, and codes of building. Other factors which apply in determining a party's legal liability include the outcomes of the construction failure, which may consist of the loss of life and permanent injuries. According to Zuo, Potangaroa, Wilkinson, and Rotimi (2009), legal systems should consider problems such as the use of sub-standard building material, poor artistry, and the type of building design, which may lower the durability of a structure.

The Construction Services Law also specifies that determining the level of accountability or the involvement of different entities in a construction failure calls for the opinions of specialists, including forensic construction engineers (Wirahadikusumah & Ario, 2015). In this instance, the concept of “warranty” is as an unspoken assurance to carry out building procedures in accordance to both regional and international standards and hand-over a high quality and durable end product (Ferng & Price, 2005). Therefore, construction flaws or defects can only be categorised based on their adherence to existing laws, codes, and standards that regulate construction. Also, regardless of the type of warranty that exists between contractors

and service users, the Construction Service Law mandates service providers to deliver flawless end-products (Hu, Xia, Ye, & Skitmore, 2015). After establishing the root-causes of construction failures, the court presiding over such cases will provide their ruling following the legally allowed penalties in place for particular types of offenses.

In an examination of the liability principles of construction failure as laid out in the Indonesian Construction Law, Hardjomuljadi (2014) maintains that liability can be established based on tort law and contract violations. In civil law, professional obligations for construction failure are further categorised into "accountability of unlawful acts" and "contractual responsibility," which depends on the existence of legal agreements between the service users and providers. Moreover, the need to establish the presence of an implicit relationship often manifests when any of the parties involved file a legal suit for collapsed structures (Dubois & Gadde, 2002). Critical examinations by forensic construction engineers will focus on determining the quality standards of the tools, materials, and equipment used for construction. Additional factors which are considered include social labour protection principles, maintenance guidelines, and environmental protection procedures (Ling, Kumaraswamy & Wang, 2013). These provisions are founded on the principle of liability based on technical faults which occurred in advance of the particular construction failure being reviewed.

Coffey, Willar, and Trigunarsyah (2011) also emphasise that a legal analysis of construction failure, according to Indonesian law, is often achieved by the evaluation of culpabilities based on unlawful acts. In the construction industry, work is defined as the existence of liability, which is limited by the technical building procedures and a service provider's professional responsibilities. Contract violations caused as a result of broken promises are considered illegal if the complainant proves the existence of design flaws even before the complete structure is handed over (Faridi & El-Sayegh, 2006). Nevertheless, the main difficulties that are often encountered in proving liability in construction failure are associated with finding the burden of proof. Reaffirming culpability is often compromised by the technicalities involved in establishing the elements of error.

Construction industries across the world categorise failure into natural and human factors or a combination of the two. Human factors often encompass sabotage, poor project management techniques, inexperienced or unskilled workers, and inappropriate structural designs (El-Sayegh, 2008). Legally, the accomplishment of the construction team is determined by time, quality, and expenses. Other factors that are put into consideration include whether or not they adhere to guidelines such as the Health, Safety, and Sustainability standards. Their adherence will determine the consumers' legal obligation to the payment terms and conditions set out in the initial agreement (Coffey et al., 2011). Thus, contract violation may take place when there is an element of error between both parties, which eventually hinders the construction and handing over of a durable and high-quality structure (Willar, Trigunarsyah, & Coffey, 2016).

Moreover, the Construction Services Law also considers a force majeure, which is the occurrence of an unexpected event that compromises the ability of a contractor to carry out his mandates. It is of importance to note that the Construction Services Law also excludes construction failures that occur before contractor's hand-over the final product to the clients.

The Role of Construction Services Bill in Improving Value Engineering

Cheah and Ting (2005) define value engineering as a methodical technique applied within the construction industry to promote the usability and value of structures by determining their functions. The concept of value engineering has been used to regulate the occurrence of construction failures by guiding actions focused on quality and functionality improvements (Shen & Liu, 2003). Another primary goal of value engineering is cost reduction through the utilisation of high-quality equipment and materials, which significantly reduce the chances of redoing an entire building procedure or working past the initial set project deadline (Yanita & Mochtar, 2018). The Public Work Minister Regulation No 45/2007 and the Governor Decree No108/2003 are two crucial principles that regulate value engineering. These important doctrines guide the implementation of sustainable building plans in regions including Jakarta, where a majority of the city's construction projects are being undertaken. Cheah and Ting (2005) emphasise that the primary issues that have interfered with the implementation of value engineering include the lack of financial incentives and limited awareness concerning the roles or significance of the concept to structural engineering. Chow and Ng (2010) proposed the formulation and execution of regulatory initiatives, which stipulate how value engineering can be applied within the design, maintenance, planning, construction, and monitoring procedures.

Methodology

This study will adopt a descriptive and comprehensive study approach to provide a reliable definition of the actual roles of Indonesian construction laws and degrees, and their efficiencies in addressing the current issues facing the country's building sector. Past literary evaluation of problems with non-compliance with set standards of quality structural development, good corporate governance, and the current lack of professionalism will be the primary focus. Moreover, a literature analysis on the roles of building engineers, expert construction assessment officials, and employers in ensuring the development of quality infrastructures will be conducted to provide secondary data.

In addition to gathering secondary data from reputable online databases such as Google Scholar and the Semantic Scholar, which critically compare and contrast relevant journals and the Ministry of Public Works' implementation reports, the study also incorporated primary data. The main forms of primary data collection were through focus group discussions and workshop debates. These virtual and physical interactions were facilitated by industry stakeholders.

Additional data was derived from consulting 50 officials from the Ministry of Public Works, the Construction Service Development Board, professional bodies including the Persatuan Ahli Teknik Indonesia (PATI), and construction companies like the Asosiasi Konsultan Indonesia (ASKONI). The study respondents for this research were selected through a random sampling technique. However, participants were expected to have held positions in either human resources, quality control, or procurement departments, in addition to having worked within the construction industry for over a decade. The main objective of incorporating first-hand information from the study participants was to compare and contrast the findings derived from site visits and face-to-face interviews and establish the validity of the derived data.

The main tools for research data collection that were incorporated in this exploration included interviews, one-on-one interactions with research respondents based within the area of study, and questionnaires. The researchers organised the physical distribution of the surveys to the selected study respondents to validate the existence and operation of their construction companies. The investigators selected several regions, including East Kalimantan, Jakarta, and North Sumatra, as the study areas. The main reason for selecting multiple locations was to increase representation and support the provision of conclusive evidence, which grounds the goals and objectives of this research. Out of the 50 questionnaires that were distributed for analysis, only 35 response sheets were received after the expiry date of three working days, which was also the initial deadline for the data collection stage. The researchers checked for common themes in the participants' responses by using NVivo software to organise and find valuable connections in the unstructured data. The outcomes of these explorations revealed that the construction company faced difficulties holding influential industry players accountable for negligent actions that result in construction failures.

Findings

The study findings were as follows:

1. 98% of the respondents acknowledged that they were aware of the major legislation that protected against construction failures.
2. 86% of respondents believed that the government of Indonesia has failed to strengthen the role of the Construction Service Development Board.
3. 70% of research participants maintained that there is a lack of a framework to support collaborations and partnerships between major construction companies in Indonesia.
4. 92% noted that the number of construction specialists, such as forensic engineers were too small to support industry progress.
5. 86% stated that they were not aware of the roles or application procedure of value engineering, especially in reducing construction failure.
6. 46% noted that the implementation of 2016 Construction Services Bill has brought in numerous advantages.

7. 74% agreed that there was a need for detailed and more comprehensive supporting laws that layout standards and codes for industry-wide quality assurance, governance, financial resources, and managerial capabilities.

Discussion

Following the findings of this investigation, the researchers determined that efforts to achieve progress within the construction industry should focus on the creation of awareness among stakeholders concerning the requirements of important regulations that govern against construction failures. The analysis presented in this systematic review indicates that the primary reason for construction failures within the construction industry arise due to a lack of compliance with company regulations. According to the investigation, 98% of industry players are not knowledgeable in regional or international standards of building material procurement, site selection, and risk mitigation. Tamin et al. (2015) emphasise the significance of risk minimisation in reducing the adverse social and economic effects that can be caused by substandard building quality. For instance, the recent collapse of the Mahakam II Bridge in East Kalimantan demonstrated the lack of operational, legal guidelines to protect against devastating impacts.

Other essential steps that major industry administrators and influencers can take include reinforcing the roles of the CSDB to strengthen its commitment to ensuring a stable, reliable, and competitive business environment. 46% of individuals interviewed in this study agreed that the CSDB board could not implement legally binding regulations, particularly for more established construction corporations. The resulting lack of governance has led to issues, including a compromised level of professionalism among critical players within the Indonesian construction industry. Tunas and Peresthu (2010) also cited poor managerial skills and inadequate technical knowledge as additional problems which currently affect the planning and execution of essential functions of the building industry. Therefore, the Indonesian government can reposition the Construction Services Act by scrapping off unreasonable demands, including transferring the management of the CSDB to the government. Moreover, the government's legislative arm can specify the scope of the industry's professional facilitation by expanding or reorganising current laws.

This exploration responded to the concerns of 92% of participants who believed that there are inadequate measures to ensure the teaching and accreditation of construction engineers. The study reaffirms the need for the incorporation of rigorous training and certification procedures for construction project specialists. The CSB should reaffirm new legislation that governs different divisions of the Indonesian construction industry such as cost-reduction, technology-adoption, and risk management departments. Currently, the sector is primarily managed by service providers with broad qualifications. Moreover, contractors must be required to have the

appropriate construction equipment, a dedicated workforce, and the financial strength necessary to mitigate against risk (Soemardi, Fajri, & Wulan, 2009). Construction industries or corporations that are supported by academically qualified professionals are better placed to conduct information management, risk analysis, and employee empowerment practices. Moreover, certification should be a mandatory practice that can enable both service users and providers to confirm workers' capabilities, competencies, and qualifications.

This investigation has also called for the government's increased involvement in regulating the industry's operations, integrating sustainability measures, and advancing critical building procedures. Although a majority of state-owned corporations operate under effective business practices, advanced building technologies, and highly skilled manpower, the situation is not often the same for small-scale or privately-owned building corporations. New entrants into Indonesia's construction industry are often forced to operate in unfair environments which are characterised by a lack of access to crucial information, low compensation, and pre-organised tendering procedures. Furthermore, the government can demonstrate engagement by encouraging the adoption of green building and value engineering as efforts to enhance the durability and functionality of built structures while reducing construction expenses. This move will also respond to 86% of the study participants who admit to not having realised the benefits of value engineering. Therefore, the participation of governmental agencies as regulatory institutions can help remove barriers for corporations.

The exploration has enabled us to determine that the Indonesian construction industry could benefit from more reinforced partnerships among influential participants, as affirmed by 70% of the study respondents. Constructive collaborations can significantly improve financial, regulatory, human, and knowledge management, which are the main determinants of productivity and sustainability amidst a continually evolving marketplace (Ofori, 2003). Additionally, alliances within the Indonesian construction industry can elevate the current degree of innovation and creativity. Budiwibowo, Trigunarsyah, Abidin, and Soeparto (2009) maintain that the association between contractors, forensic construction engineers, machine operators, and employers/service users require intensive reorganisations to enhance the chances of sustainability and role integration. By fostering collaborations, new construction businesses can engage in routine benchmarking to learn critical aspects of the business. Most importantly, creating a unified front can strengthen the advocacy for the formulation of comprehensive legislation that enables private entrants to play a larger role within the sector.

Abednego and Ogunlana (2006) noted that the current necessity for better quality services and technical accuracy within the building sector are fundamental prerequisites to enhancing industry competitiveness through improved governance practices. Thus, professionals working in this sector should be equipped with control competencies and technical know-how regarding

sustainable construction techniques that can significantly enhance the productivity of the industry (Efferin & Hopper, 2007).

Conclusion

In summary, the Indonesian construction industry has operated under problematic and inadequately structured building laws and regulations, which have hampered the development of durable and high-quality structures. For decades, the legal determination of construction failure has focused on the examination of contract violation and tort law (Hardjomuljadi, 2014). This systematic review has revealed numerous issues, which have worsened the problem of construction failure, including the recruitment of unskilled or inexperienced employees to work within the construction industry. Other factors that have been identified to negatively influence the competitiveness of the Indonesian construction sector include the lack of specialists such as forensic engineers who can assist in the planning and evaluation of building programs at different phases of completion (Wirahadikusumah & Pribadi, 2011). In this case, improvements in the delivery of consultancy and supervisory services may prove imperative in reducing the rate of construction failures that are currently experienced in Indonesian towns and cities (Shi, Ye, Lu, & Hu, 2014). Authors such as Meidiana and Gamse (2010) have also highlighted the role of environmentally friendly procedures such as building maintenance and sanitation in reinforcing durable and high-quality infrastructure. Professional engineers and consultants are required to oversee building procedures and act as the mediators between users and service providers, while also encouraging the adoption of sustainable building procedures including green construction (Nikolova, Reihlen, & Schlapfner, 2009).

For law enforcement institutions, the main issue affecting the determination of legal liabilities of contractors and service providers by clients relates to the burden proof, because in most instances, service users are conversant with construction guidelines and procedures. The lack of education and awareness makes it difficult for employers to comprehend fundamental considerations that should be taken in when confirming the element of error at different phases of the building process. Although the Indonesian construction industry, in conjunction with the Ministry of Public Works, has established measures to ensure that expert assessors are incorporated in the determination of such disputes, it is vital that stakeholders understand legal provisions and guidelines that define the problem of construction failure.

Recommendations

The main challenges that have been highlighted as negatively influencing the efficiency of the Indonesian Construction Bills include difficulties experienced by governmental and local authorities in trying to implement and reinforce the stipulated requirements both within the public and private sectors. For the most part, numerous construction companies have emerged,

which operate without mandatory certifications due to factors including collusion and fraud (Hussin, Rahman, & Memon, 2013). These issues demonstrate the current inefficiency of the CSB to carry out its mandate as once intended. The primary purpose of this section will be to propose several recommendations that can be applied within the Indonesian Construction Industry to streamline processes in a way that reduces instances of costly building failures and supports Indonesia's social and economic growth. Therefore, a critical examination of the Indonesian Construction industry has established that the following measures will prove beneficial in improving existing laws and regulations:

- ***Reorganising the Building and Construction Sector***

As stated by the Construction Service Law, services that fall under the building and structural maintenance should include well-structured planning, implementation, and examination procedures for construction projects. However, this scope is too limited to accommodate the growing range of comprehensive services provided within the sector (Van Klinken & Aspinall, 2010). The law should redefine construction to include demolition, building refurbishment, maintenance, and operation (Segerstedt & Olofsson, 2010). Moreover, the law should also stipulate the role of other players within the industry including financiers, supply chain facilities, and insurance institutions, in terms of how they can contribute towards an overall reduction of construction failures resulting from negligent actions (Ervianto, Soemardi, Abduh, & Suryamanto, 2011). For instance, insurance services can only reimburse structural breakdowns that are caused by natural factors such as earthquakes, if such an occurrence was completely unavoidable or could not have been identified by geographical feasibility analyses. Moreover, enhancing the degree of equality and fairness within Indonesia's construction industry will require the restructuring of consultancy and casual services (Siew, Balatbat, & Carmichael, 2016). Lastly, the country's construction industry influencers should expand current qualification standards and procedures to encompass internationally acclaimed quality control directives and standards, including the Central Product Classification.

- ***Support the Implementation of Value Engineering as a Move to Protect against Construction Failures***

Indonesian construction industry players should formulate operational, comprehensive, and inclusive state legislation, which layout mandatory awareness and incentive programs for contractors or clients who incorporate value engineering. Reinforcing the existing guidelines may also necessitate increased partnerships with the government as the primary regulatory body that oversees implementation and evaluation.

- ***Reorganising and repositioning the human resources requirement framework***

The Indonesian Construction Service Development Board (CSDB) requires significant alterations regarding the scope of its authority and governance. Although the CSDB's functionalities have notably been affected by political interests in the past, the institution can be restructured to enable it to play a crucial role in regulating the growth and profitability of the construction sector (Ismail, 2016). The CSDB should engage more in bureaucratic character development and deviate from taking part in politics of any form. The CSDB should focus on additional resources in developing programs such as construction worker competency evaluations, which can place the industry in the international limelight. According to the Construction Service Bill (CSB), an employee working within the sector should be financially and technically equipped to handle the legal dynamics of the construction industry, including the set standards for location, building material, and supervisory requirements. Currently, the country has a model for the Indonesian National Qualification, which was formulated by the Division of Labour and Transmigration. The framework specifies several competencies and experiences, which new industry entrants must have before being allowed to provide building services. Therefore, qualification and classification prerequisites must be synchronised to increase impartiality and compatibility.

- ***Implement and Encourage the Adoption of the "Green Construction" Practices***

The Indonesian construction industry can also enhance its global competitiveness by integrating green construction policies, which would guarantee the building of high-quality and eco-efficient structures as a way of cutting down expenses or adverse environmental impacts (Abduh & Fauzi, 2012b). Currently, influential construction industry shareholders lack fundamental knowledge regarding their specific duties in environmental protection, which further reduces their primary motivations to comply with relevant minimum standards and directives (Abduh & Fauzi, 2012a). The main aspects of the building, which the Construction Services Forum and the Ministry of Public works should look into include human resources, products or materials used in architecture, development procedures, environmental quality factors, and the design process. For instance, the building products used should adhere to regional standards of ecological sustainability. Additionally, these products must be operated by a team of multi-disciplinary individuals who can meet the set sustainability criteria. Moreover, stakeholder education and awareness programs must be conducted to ensure that those involved in upholding the standards of eco-friendly constructions understand how to execute existing codes and guidelines.

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