

Occupational Health and Safety in Tanzanian Construction Sector: Incompliance, Informality, and Power Relations

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Abstract

The management of Occupational Health and Safety (OHS) on construction sites continues to be an area of concern. Workers have continued to be blamed for unsafe behavior, contributing to the increase in the number of accidents on construction sites. Although various legislative acts enforcing Health and Safety (HS) exist, incompliance with such legislation is evident. This study sets out to understand why construction managers and workers do not comply with OHS legislation. Interviews, focus group discussions, and observations were carried out with the construction site managers and informal construction workers on selected construction sites. Content and thematic analyses were adopted to analyze the data using Nvivo version 12, qualitative analysis software. The study confirmed poor OHS practices and concluded that the precarious nature of the workers' jobs in the construction sector limits their power to demand the enforcement of OHS, resulting in them accepting the risks as wage-for-labor precariat. Site managers have limited power since they are employees of the main contractor, and their focus is on the completion of the construction projects. This study recommends the need to establish an inclusive safety management system that accommodates the main contractors, managers, and workers. Moreover, a review of the current OHS (building and construction) rules is recommended to recognize the precariat-informal construction workers, who are the main players on construction sites.

Keywords: Construction, Informal Construction Workers, Occupational Health and Safety

Introduction

Occupational Health and Safety (OHS) on construction sites continue to be an overarching problem worldwide. The construction sector ranks amongst the most hazardous sectors globally (Abbas et al., 2018; Aikaeli & Mkenda, 2015; Guo & Yiu, 2015; Jason, 2007; Mneymneh et al., 2017; Rowlinson, 2000), claiming an increasing number of workers' lives while leaving others with permanent disabilities or permanent illnesses (Oliveira & Pais, 2018). These incidents contribute to around 25-40% of fatalities around the world (International Labour Organization (ILO), 2005; Lingard, 2013). In Tanzania, the construction sector employs 9-11% of the national workforce, accounting for 25-45% of fatalities (National Audit Office of Tanzania (NAOT),

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2013). The sector also registers the highest number of occupational injuries and fatalities (23.7%) amongst other economic sectors, such as transport (20.6%), mining (20.5%), and manufacturing (11.4%) (National Audit Office of Tanzania (NAOT), 2013). Occupational health services are almost non-existent in the sector, workers primarily receive first aid, or in cases where medical attention is required, they are referred to primary healthcare facilities (Mrema et al., 2015).

Like other countries, the construction sector in Tanzania, as far as OHS is concerned, is a multi-layered, hierarchical sector with various agencies influencing the decision-making process from different angles (Mrema et al., 2015). Such agencies include the government through the Ministry of Works, the Ministry of Health, the OHS regulators, the contractors' registration board, the contractors, the construction site managers, the sub-contractors, and the workers. The sector heavily depends upon informal construction workers to carry out the construction projects (Aikaeli & Mkenda, 2014), as is the case in most developing countries (International Labour Organization (ILO), 2017; Kheni & Braimah, 2014). The informal construction workers in this study are understood as all people working in the construction sector that are not on the regular payroll of the contractors or of other employers; moreover, they are not protected by labor laws, nor do they receive any kind of formal social protection (Chen, 2012; Standing, 2011; Wells & Jason, 2010). Workers in the sector are characterized by having lower-level education, while the activities in which they are involved are usually labor-intensive, with inadequate technology and the absence of well-defined regulations concerning HS management (Kheni, 2008; Mitullah & Wachira, 2003). The workers perform almost 70-80% of construction work (Chamara et al., 2015; Lingard, 2013). Liang et al. (2021) argued that it is not easy to accurately estimate how workers deal with uncertain HS situations if they have insufficient knowledge and awareness of the risks they could encounter. Most workers in developing countries work to impress their supervisors and co-workers, wishing to appear "tough guys" (Choudhry & Fang, 2008). It is because the number of people on the waiting list for similar jobs is high; therefore, those are fortunate enough who have the work, and they do not wish to relinquish their employment.

In Tanzania, the legislation for OHS in workplaces, as well as sector-specific rules for HS management, exist; these include the Occupational Safety and Health Act number 5 (URT)

(2003) that provides for powers of the inspectors, registration, inspection of workplaces, investigation, and sanctioning of the occupiers of workplaces. Also, the Act directs workplaces to have on-board safety and health representatives and safety committees vested with various responsibilities in managing health and safety at work. Besides, Occupational Safety and Health Policy, URT (2010) directs the effective promotion of OHS initiatives at work, the direction of the government towards OHS initiatives of which the vision is to provide sustainable, safe, and healthy working condition and environment at all workplaces. The direction of the Policy is to see the number of work-related accidents and diseases. The prime objective is to observe whether they are reduced in the country by adopting and implementing a culture that focuses on preventing OHS hazards both on the government side and the employer's side. Lastly, Occupational Safety and Health (Building and Construction) Rules (URT (2015) stipulate the duties and responsibilities of all concerned parties on construction, from the contractor, sub-contractor, workers, and others on site. Also, post OHS qualifications of all key actors, risk assessment and mechanisms for risk identification, risk control and risk management, safety measures to be imposed and how the same are governed, record keeping such as reports and certificates as well as health and welfare measures for all workers and employees. Although these are few among other legislations, they provide governance mechanisms on OHS and how to enforce HS on construction sites effectively. However, various studies have identified the unsafe behavior of workers and their incompliance with such rules and regulations (Chileshe & Dzisi, 2012; Hamid et al., 2008; Heerden, 2018; Smallwood et al., 2009) while literature as to why site managers do not enforce HS is non-existent in Tanzania. This study acts as a steppingstone to understand why construction site managers, as front liners in the implementation of construction projects, do not comply with OHS rules and regulations. Specifically, the study investigated how site managers enforce HS through their Policy Statements, understanding workers' behavior towards HS and the environmental factors affecting workers or managers in proper enforcement and compliance to HS.

Delimitation

This study focused on the management and administration of health and safety on the construction site, where the presence and implementation of the contractor's policy statement on health and safety were vital. The study investigated how site management as leaders of the site functions to enforce rules and regulations on-site such as management of occupational hazards,

training workers on health and safety, provision of PPEs, and how management ensures cleanliness and tidiness to minimize risks and accidents. Secondly, the study focused on workers' behavior regarding health and safety, including how workers observe safety protocols, the use of PPEs, attend health and safety training, and workers' skills regarding particular job assignments provided on-site. Lastly, the study observed the environmental factors in relation to health and safety such as weather conditions - too hot, too cold, rainy and the use of PPEs during such weather conditions, but also the location of the site- how it may contribute to specific behaviors on enforcing health and safety.

Theoretical Framework

The study adopts Guy Standing's notion of the precariat to understand the context of workers in the construction sector in Tanzania. Standing (2011) identifies three important characteristics when explaining the precariat. According to him, a precariat can be defined through distinctive *relations of production*, in which there are flexible labor contracts, temporary jobs, labor in the form of casual work, part-time work, labor brokers, or employment brokers. Workers in the precariat have no secure occupational identity, with no narrative to offer concerning their lives, and are characterized by exploitation in the workplace. In Tanzania, workers in the construction sector are mostly informal workers, without any formal work contracts (Aikaeli & Mkenda, 2015; Mrema et al., 2015; Wells & Jason, 2010). The workers are casual, and the employment is temporary (Jason, 2007).

The second characteristic of the precariat is the distinctive *relations of distribution* on which those workers rely, namely wages without any wage benefits, such as pensions and medical insurance. The majority of these workers are not covered by any social protection measures, such as guaranteed health insurance and pensions; they provide their labor for money (Wells & Jason, 2010), and they go without any sort of unemployment benefits when the work is completed (Jason, 2007). According to Standing, such workers are also characterized by a lack of state benefits, such as unemployment benefits and other benefits that could be derived from private contributory insurance plans, since the wages of such people are meager and unpredictable. Construction workers in Tanzania conform to these characteristics, as revealed by Mitullah & Wachira (2003) and (Aikaeli & Mkenda, 2014).

The third characteristic relates to distinctive *relations to the state*, whereby these workers are “supplicants, reduced to pleading for benefits and access to public services.” Although these characteristics do not apply entirely to workers in the construction sector in Tanzania, they reinforce the idea of worker migration and identity. For example, Guy argues that workers, as migrants, do not have access to basic rights provided by the state, which apply to country-to-country migrations. In Tanzania, the construction sector is characterized by rural-urban migration, as workers move from rural areas to the towns searching for jobs.

The notion of the precariat presents an important stimulus in terms of understanding informal construction workers in the construction sector in relation to OHS noncompliance. Although the approach was developed primarily in the context of the global north, certain important features within the characteristics fit well with the precariat in the global south context. Furthermore, to understand why workers do not comply with safety rules, the study is based on the Power Resource Approach to understand how various worker power resources could influence workers to behave differently in relation to compliance or otherwise of the safety rules. This approach provides an insight into the attributes that could influence workers to behave in a certain way, by either complying or not complying with OHS, based on their characteristics.

Literature Review

HS Compliance on Construction Sites

Workers in the construction sector have been accused of being the main cause of construction accidents and fatalities on construction sites (Lingard & Rowlinson, 2005) due to individual factors related to unsafe behavior and negligence regarding safety procedures. Scholars Hale & Borys (2013) and Phoya & Kikwasi (2017) revealed factors such as a low level of training or experience of safety and temporary jobs to be among the individual factors. These studies have indicated that when detailed safety rules and procedures are implemented on a construction site, unsafe behavior among workers is minimized, and safety in the workplace increases. Although there has been an emphasis on workers’ behavior and the implementation of strenuous rules and regulations has been viewed as an important factor the construction sector is still experiencing an increase in the number of accidents and fatalities (Lander et al., 2016; Swuste et al., 2012). Attempts to study other factors within the construction sites regarding enforcing safety have been made in the literature. Several studies (Grill & Nielsen, 2019; Gui et al., 2020; Jeschke et al.,

2021) have considered how managers and workers interact on-site, as well as the direct and indirect leadership practices of site managers, and have tried to understand the social cognitive process of construction workers. These studies emphasize the importance of other factors, such as construction site managers, foremen, and supervisors, promoting compliance to safety. As noted by Hale & Borys (2013), other factors, external to the workers, contribute to accidents and fatalities on sites, including attitudes to and habits of incompliance with safety regulations, poor supervisor-worker cooperation, a non-participative style of supervision and management turning a blind eye to safety. This demonstrates that it is not only the workers that influence the occurrence of accidents, since other factors, such as management's commitment to enforcing safety on-site, could perhaps reduce the extent of the problem.

Certain scholars Wachter & Yorio (2014) are of the view that the motivation to engage in implementing HS on construction sites, especially in the case of informal workers, is influenced, among other things, by situational and organizational factors, such as values and beliefs, as well as the vision and mission of employers. These include employers' commitment to HS, workforce welfare, the provision of good quality and adequate Personal Protective Equipment (PPE), the availability and implementation of policy statements, and the implementation of safety rules on site. However, evidence indicates that such organizational factors are not implemented in developing countries and are simply made available to comply with legislation (Kheni & Braimah, 2014; Mrema et al., 2015). Moreover, Boadue et al. (2020) argue that the characteristics influencing incompliance with HS on construction sites in developing countries include the lack of a skilled and educated workforce, reliance on labor-intensive methods, and the lack of a single regulatory authority overseeing the construction industry. Due to the sector being an avenue for the employment of many unskilled and illiterate workers, issues regarding HS management become secondary, and managers have little influence on HS management. From a different perspective, Boadue et al. (2020) attest that reliance on labor intensiveness is the result of contractors not having the appropriate plant and equipment to carry out construction work, which in turn requires them to have more workers per activity on-site. For example, concrete mixing on a site without a concrete mixer could require ten informal construction workers instead of three, increasing the HS risks. Managing this huge workforce results in

significant negligence regarding non-compliance with HS rules and regulations on-site (Aikaeli & Mkenda, 2015; Boadue et al., 2020; Kheni & Braimah, 2014; Lingard & Rowlinson, 2005).

The construction site management has a responsibility to protect the workers from all hazards that may threaten their HS in the workplace (ILO, 2009). In Tanzania, a fundamental principle stipulated in the Occupational Health and Safety Act (2003) (OHS Act No 5 of 2003) is that an employer must, as far as is reasonably practicable, provide and maintain a working environment that is safe and does not pose a risk to the health of anyone on site. In turn, an employee must also take reasonable care for his or her own HS and the HS of others.

According to the study conducted by Jason (2007) in Dar es Salaam, informal workers are not covered by legislation and policies, which led him to conclude that the operational relations of informal construction workers are not well understood (Jason, 2007). The workers are employed on the construction sites as wage-for-labor workers, and Wells & Jason (2010) note that they do not have any contractual agreement that identifies them as employees of the construction company. However, the Tanzania Occupational Safety and Health Act has highlighted in Section 95 (6) that every self-employed worker should conduct his undertaking in such a manner to ensure that all workmen are not exposed to hazards and risks by their activities in such a way that affects their HS, (URT, 2003). Therefore, from this perspective, there is a question of interpretation of the regulation regarding this self-employed worker positioned in the formal construction site since the worker is employed on a wage-for-labor basis, without a binding contract enforceable law.

Many studies (Chileshe & Dzisi, 2012; Hamid et al., 2008; Heerden, 2018; Smallwood et al., 2009) have noted that site managers often refrain from implementing HS on construction sites of putting more emphasis on project completion and profit maximization. It is perhaps because the managers understand the gaps in legislation concerning compliance with safety and thus act in a manner that gives them an advantage over the workers.

The works of Choudhry & Fang (2008), Gui et al. (2020), and Lombardi et al. (2009) show that the workplace relationship, as a social group, can affect workers' attitudes and promote unsafe behavior. The literature also shows that worker influence, foreman influence, and managers' feedback on workers' unsafe behavior play an important role in HS management (Chiaburu & Harrison, 2008). Evidence proves that managers, foremen, and co-workers interact with one

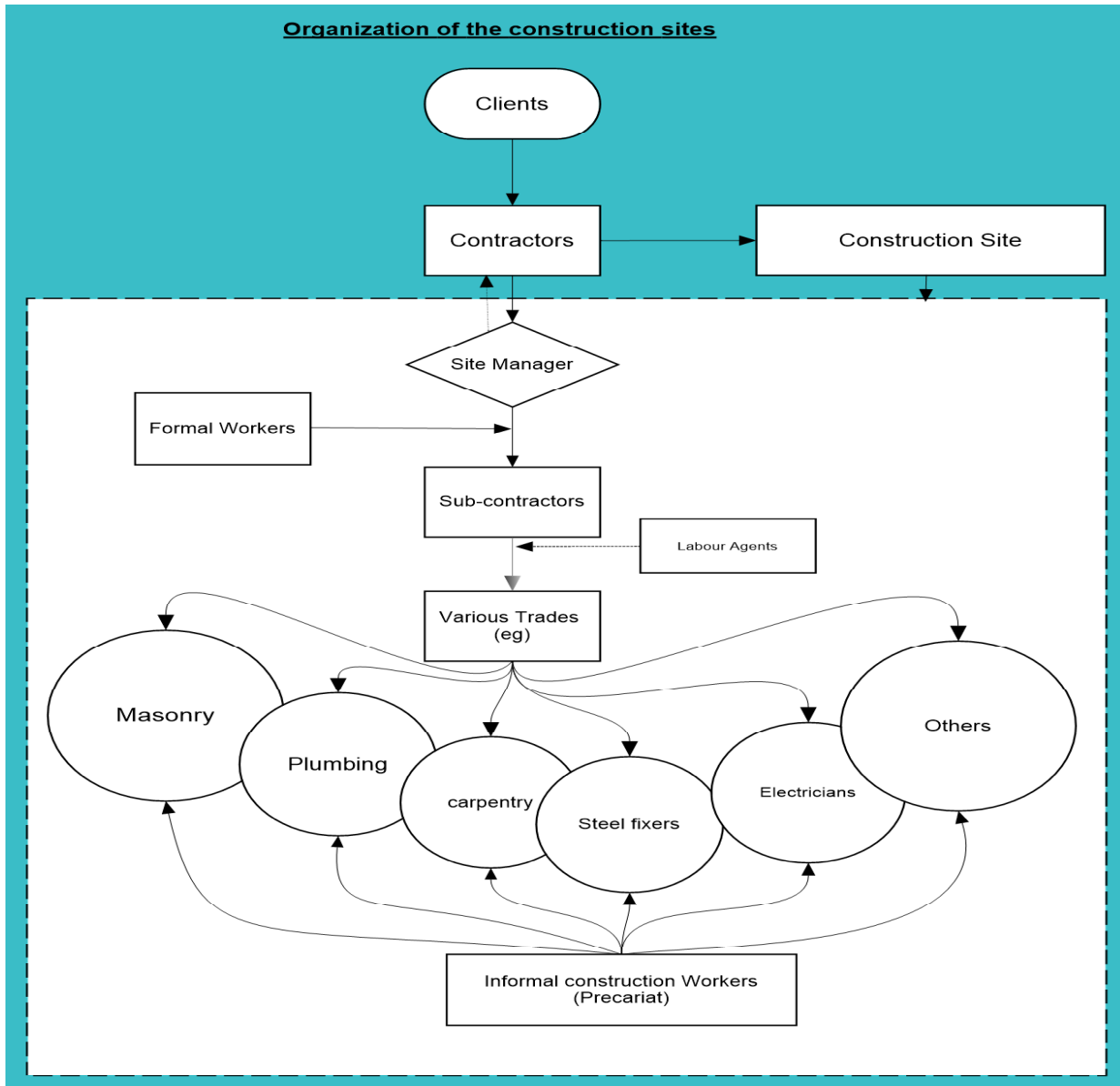
another daily (Peiyao et al., 2019); in this scenario, the kind of workplace relationship between them cannot be ignored. Other existing studies have also analyzed the influence of foremen on the unsafe behavior of workers; these studies are based on the perspective of the supervision and safety management role (Chang et al., 2019; Kaskutas et al., 2013). Site managers were considered role models by the workers, such that in instances when the manager overlooked certain safety aspects, the workers were more likely to ignore these. Interestingly, if the manager adhered to all safety protocols, the workers also followed the same model. Styhre (2012) argues that the site managers are important leaders on the construction site, responsible for the entire site and all other actors, such as the sub-contractors.

Construction projects in Tanzania employ more informal than formal workers. As has been noted by LaDou et al. (2018), informal construction workers are most vulnerable to workplace injuries and diseases. Such workers have the least secure employment, a low income, an inadequate diet, and limited access to healthcare and social security benefits. Furthermore, LaDou et al. (2018) argue that workers are threatened in many ways, with little protection from the government, and if they voice their concerns, they end up losing their jobs. Therefore, workers volunteer to work in such situations (Aikaeli & Mkenda, 2014; Jason, 2007; Mitullah & Wachira, 2003; Wells & Jason, 2010) because they cannot compel their employers to adhere to good labor standards and OHS. As a result, workers often take risks on the job, which ultimately leads to serious accidents on site.

Organization of the Construction Sector in Tanzania

In Tanzania, the construction sector comprises organizations and individuals owning construction companies, firms, and individuals working as consultants, main contractors and sub-contractors, plant and equipment suppliers, material and component producers, builders, and merchants.

Figure 1: Conceptual Organization of the Construction Site



Source: Authors' Elaboration, 2021.

The sector is closely linked with clients and financiers. The government is involved in the industry as a purchaser (client), financier, regulator, and operator (Mrema et al., 2015). The sector is multi-layered (see figure 1 above) and hierarchical; the top-level constitutes the clients/owners of the construction projects and the contractors who bid for the construction tenders, who become the project's owners until it is handed over to the client. The contractors receive and control the projects' resources, including the finances; therefore, the sole control of the project cycle lies with the contractors. In this study, the contractors are the top-level managers of the construction project, who have the power to control resource allocation,

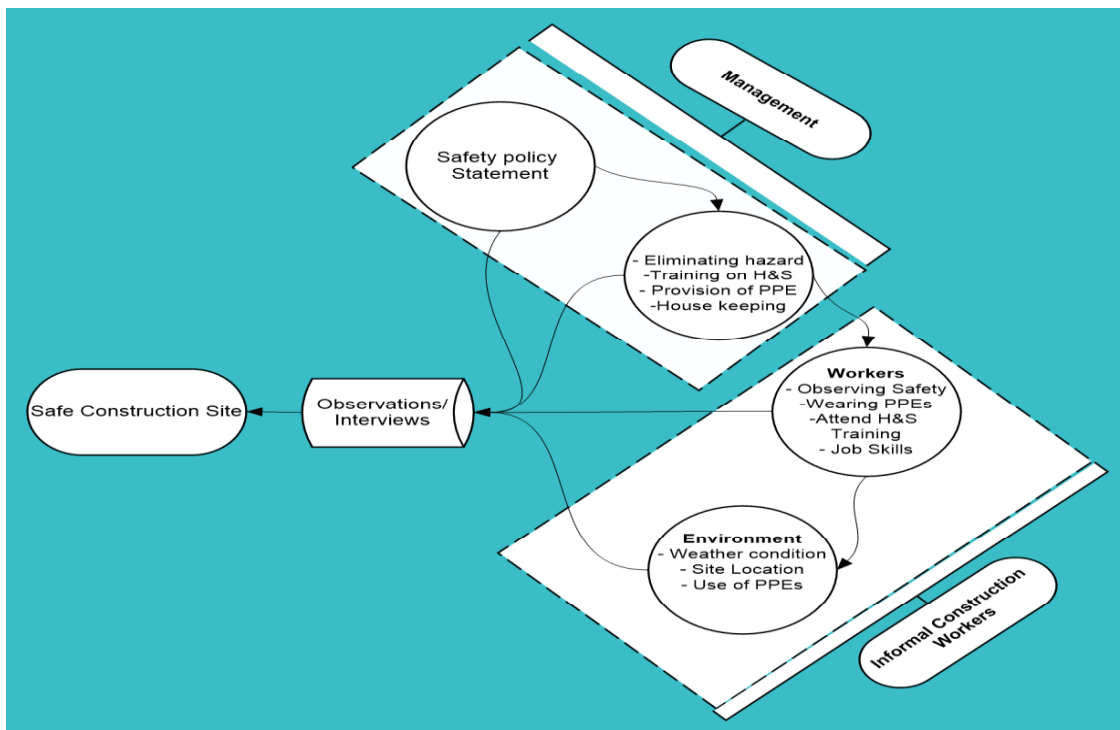
planning, and the execution of the project at hand. Site managers and engineers are the middle-level managers of the construction sites and the execution team of the projects. The middle-level managers referred to as the site managers, work for the contractor with few formal employees within the construction company, such as health officers, foremen, and building and construction engineers. In consultation with the main contractor, the construction management engages sub-contractors of various trades who are the implementers of the construction project.

The sector follows a formal structure that exhibits power relations over the decision-making process of the construction sector. Therefore, either directly or through labor agents, the sub-contractors employ informal construction workers to carry out actual construction work. Lingard (2013) and Chamara et al. (2015) have argued that informal construction workers perform 70-80% of the work. Flor (2021) explained that in relation to theories of power and social change, this paper refers to the capacity of actors to mobilize the appropriate means to achieve the end goal. The construction sector constitutes an elaborative structure that highlights the power relations on the construction site. Besides, how each agent in the structure coordinates and interacts with one another to achieve their objectives. This kind of structure could be a limiting or an enabling factor regarding the enforcement of OHS on construction sites, depending on the capacity of agents to draw upon the structure to achieve outcomes. Within the construction sector in Tanzania, the main contractors are at the strategic apex of the construction company and thus exercise power over the agents, namely, the construction site managers; they are also responsible for making strategic decisions and maintaining client contacts.

Most importantly, they also control the resources to run the projects. Therefore, the top-level managers (main contractors) have control and dominance over the structure, while the middle-level management (site managers) are executors of the project, receiving direct orders from the contractors and relaying feedback when necessary. The site managers exercise power over the agents beneath them, such as labor agents, sub-contractors, and workers. However, at the lowest level of the structure are the informal construction workers, who are the propellers of the construction project and have no influence over the power structure and formal decision-making process of the construction site.

This study sought to understand why managers and workers do not comply with OHS rules and regulations or engage in effective enforcement (Grill & Nielsen, 2019; Hale & Borys, 2013; Lingard & Rowlinson, 2005). The studies revealed that various factors contribute to compliance or non-compliance on construction sites. Therefore, this study provides an analytical framework of the factors under investigation (figure 2), namely, the safety policy statement and the attitude of management to safety, demonstrating how the power structure limits or enhances compliance. Moreover, the other aspect of the power structure relates to the workers' obligations regarding safety, environmental factors, and other factors affecting informal construction workers' compliance or non-compliance with OHS rules and regulations on construction sites.

Figure 2: Analytical Framework



Source: Author's Elaboration, 2021

Materials and Methods

The study employed qualitative methods, using semi-structured interviews, focus group discussions, and observations as tools for data collection. As shown in table 1, a total of 14 key informants, who are construction site managers on 14 different construction sites, were sampled and interviewed across two locations, while four Focus Group Discussions (FGDs) were conducted with the informal construction workers with a total of 29 participating in the FGDs.

Interviews and FGDs were audio-recorded, while observational field notes were taken daily on the construction sites, monitoring the behaviors of workers and managers in terms of observing safety procedures. Moreover, the site conditions and housekeeping of the construction area were included as additional observation units. Content and thematic analyses were used to analyze the data built on a general codebook. Nvivo version 12 qualitative data analysis software was used to sort the codes into categories and subcategories (like parent and child nodes) with a specific classification of each category of the interview observation notes or FGDs. The process assisted in discovering the variations, similarities, and associations of the materials that helped the researcher to draw meaningful themes for the interpretation of the results.

Table 1: Characteristics of Respondents and Observations

Respondents	Description	n of respondents
Construction site managers (Dar es Salaam)	Civil/building	9
Construction site managers (Dodoma)	Civil/building	5
FGDs	No of FGDs	No of participants
FGDs (Dar es Salaam)	2 (8 in each group)	16
FGDs (Dodoma)	2 (6-first group, 7-second group)	13
Observations	Object of observation	No of sites
Dar es Salaam	Workers and managers	4
Dodoma	Workers and managers	4

Source: Researcher's Data, 2021

Results and Discussions

The following section presents the study results to highlight why managers and workers are not complying with HS rules.

The Commitment of Management to HS to Protect Workers on Site

Management's commitment to HS contributes to informal workers' practices concerning risk on the construction sites. It was explained by the fewer preferences given to the informal workers, most of whom do not have a direct work contract with the construction company but rather with the sub-contractor, who hired them for a specific period, usually for a day or a week. Observations from the study revealed that site management used the time for job allocation during morning meetings or toolbox meetings. The focus of the talk was the importance of working diligently and finishing all assigned tasks. As noted in one meeting, the manager stated, *"today we have to finish all the outer walls, please work hard, we do not have time to waste, you will only be paid when your part is finished and deemed to be of the required quality after inspection."* The researcher who was present from the start of the workday did not witness an emphasis on observing HS rules. In this work setting, the central focus was on finishing the work and getting paid, with no consideration given to HS issues.

The management of HS on construction sites emanates from the commitment of the construction site management to this cause and its daily implementation by the site managers. Amongst the requirements of the Occupational Health and Safety (Building and Construction Rules) 2015 in Tanzania, the contractors in Section 4 (3) (a) are instructed: "to prepare as often as may be appropriate a revised written statement of their general policy with respect to the health, safety, and welfare of their employees, at building operations or works of engineering construction." This is further elaborated as follows.

Presence of an HS Policy on Site

Workers' behavior and practices on construction sites depend upon how management commits to HS. It includes, among other things, having a written HS policy statement, which is rigorously implemented. The majority of construction sites visited was found to have written statements regarding HS; however, the implementation of the said policies was an issue of concern.

Findings showed that among the coded items relating to HS policies and procedures on-site, the majority agreed (nine site managers) that a written safety policy and procedures were necessary, while five site managers confirmed that they did not have any written safety procedures. When asked whether the policies were implemented as required, the managers revealed that the implementation was not adequate, complaining that it was difficult to follow all the procedures while working to tight deadlines, tight budgets, and with irresponsible workers:

“...but we do not implement what is written on these documents. We document very well the procedure that we use to keep workers safe, but we do things very differently. We even give PPE to the employees without even telling them what these are for” (Manager and key informant, Dar es Salaam).

Another added:

“...(laughing) No, who can do that? (meaning following all the procedures), time pressure...we must finish on time...the workers are very irresponsible, they do not care about these things” (Manager and key informant, Dodoma).

It was also noted from the interviews that the financial resources for the implementation of HS measures on the construction site seemed to be low, to allow managers to adhere to every aspect of the legislation relating to HS on construction sites, even when they had a written safety policy statement on site:

“You see, the budget provided for safety does not allow us to implement everything that the OSHA demands, we will not do it, it is insanely expensive...it is true we really will not, not just here, but everywhere” (Manager and key informant, Dar es Salaam).

The managers reveal a sense of awareness that workers are not safe on construction sites, that there is minimal enforcement of the available on-site safety rules and regulations for HS, and that following all procedures negatively affects their time schedules, delaying the completion of the construction process, which is the primary goal. The absence of proper implementation of the safety policies on construction sites negatively affects workers' safety and could be a reason for an increase in construction accidents.

Provision of Training on HS for Construction Workers

The study reveals that the regular provision of training on HS before the commencement of the work should be amongst the directives of the HS policy that the construction site managers are responsible for implementing. The findings show that managers sometimes claim to provide such training during toolbox meetings, whereby all workers on site are reminded of the hazards and how to avoid them, as noted in an interview:

"We sometimes remind workers during toolbox meetings about issues regarding OHS. We think this is a type of training, no? Of course, it is not done many times, but we try our best to remind them of the hazards and the need to take care of themselves for the sake of their families while they back home" (Manager and key informant).

This finding reveals that managers do not provide adequate HS training prior to employment on-site. This is further evidenced by members of the FGD, who angrily attacked the site managers for not caring about their HS, as noted in the following quotations:

"...Never, I have never been given any training, they do not care about anything we go through, it is a shame" (FGD participant).

"Training? You are kidding me, they want us to finish the job, sometimes we stay until very late at night, when will they get time to train us on these issues" (FGD participant).

"...No! The toolbox meeting is to allocate our work areas for that day, actually what we get from them is anger, especially directed at those who did not finish their part on time the previous day, these people care about money and money only" (FGD participant).

As Styhre (2012) argued, the purpose of managers' meetings (toolbox meetings) with workers or other project implementers focuses mainly on the progress of the work and the upcoming events. It has been noted that the managers concentrate on completing the construction project, transforming the designs and plans into a structure using labor. Therefore, training on OHS is a secondary issue and, perhaps due to the unpredictability of the construction process, is largely ignored. This negatively affects workers' safety since workers must volunteer to perform risk assignments without proper safety training on handling different work assignments.

Provision of PPE

Amongst the safety measures for workers on construction sites, PPE is particularly important. As acknowledged, the work environment on a construction site changes from stage to stage; therefore, all workers must be provided with the necessary PPE. However, it has been revealed that most construction sites do not provide the required equipment, and when this is supplied, it is usually because an inspection is due or an important government official is visiting the site, as noted in the FGDs:

“I have worked on many construction sites, managers provide a reflective transparent shirt and sometimes a helmet, although on rare occasions. I cannot remember if I have ever been given safety boots, no! So they sometimes give you a few” (FGD participant).

Further, the responses were the same in this aspect, and the majority agreed that safety equipment is not adequately supplied; a participant explained:

“So, what I have learned is that, when inspectors come to visit, or people like you visit the site, many of us are given safety equipment, or when a politician comes to see the project, we are all provided with the necessary PPE; otherwise, we work without it” (FGD participant).

Observations also proved what the participants at FGD revealed; the researcher received a formal invitation to the site and had explained to the management that he intended to conduct research on HS. When the researcher entered the site, most of the workers had PPE on the first day. However, on the third day of the observations, the same workers had no PPE. During an informal interview with one of the workers during the lunch break, he was asked about the whereabouts of his PPE, and he responded, *“the manager gave us the PPE and told us to behave well because some guests were coming, the PPE is now back in the office.”*

Therefore, the findings revealed that the lack of safety policies and procedures or the inadequacy of regulations contributes to little motivation in relation to safety on construction sites. These findings are contrary to the findings of Mrema et al. (2015); (Aikaeli & Mkenda, 2014) and Kheni & Braimah (2014), who concluded that a lack of policies and regulations contributed to increasing numbers of construction accidents. Whereas, it has been noted that management's commitment to safety is the key issue, since workers are regarded as tools to complete the project promptly and without additional costs. So, policy frameworks have defined the protocols to be followed, but the problems are found at the management's implementational level. Furthermore, it was found that construction site managers blame workers for not taking care of themselves; in this regard, managers are distancing themselves from the workers' issues, yet it is the sole responsibility of the managers to ensure that the workers are safe. It supports the argument noted in box-1 above that managers sometimes provide workers with PPE without

even telling them its utility. Moreover, as one of the managers responds to a question on the provision of PPE, he explains:

"To be honest, it is a challenge to provide PPE for everyone because it is expensive. However, workers are so irresponsible sometimes, they take unnecessary risks while working, and we cannot be there every time to protect them" (Manager, key informant).

And:

"Even when we provide (the PPE) they do not manage it properly, and most of the times they do not wear it at all, they are careless" (Manager, key informant).

This signifies that if a worker is not experienced and has not been in the sector for long, he is more prone to accidents because the management has not played a leading role in aspects of HS, such as the provision of safety training and the importance of using PPE. The managers seem to be busy running the project and pay less attention to how workers practice HS.

Job Skills and Personal Attributes

Construction skills are an important aspect, enabling individuals to secure a job at a construction site. Regarding informal construction workers, it is not formal education that will guarantee a job on a large construction project; skills and experience are rated more highly. Riisgaard et al. (2021) reveal that informal construction workers have a low standard of education, and the majority of construction skills acquired were either self-taught or learned while working as an apprentice; few had attended formal training. Therefore, due to the type of activities performed during the construction period where the sub-contractors and the workers are employed on a short-term basis, it is clear that aspects of HS in respect of the workers are ignored, with the focus being directed towards job performance and completion. As explained by a site manager, *"we need these workers to perform the activities, we supervise them, mostly we hire them based on their experience, they come looking for jobs"* (Manager, key informant).

Workers obtain construction skills on sites or through relatives and friends in the sector without necessarily having to attend specific training. In this kind of setting, where individuals learn on the job, nothing is taught about issues relating to HS at work; therefore, this is not a major concern for workers. The behavior demonstrated by informal workers of disregarding HS issues

could be due to a lack of sufficient knowledge in relation to HS risks on-site, as explained by members of the FGD in box 1.

Box 1: How did you acquire your construction skills?

- a. *"I have more than 20-years' experience in construction. I have never attended a vocational training course, I learned about construction from my uncle, today I am a good mason"* (FGD participant).
- b. *"For me, this is my 9th year in the job, and I learned at work. I started as a helper, carrying concrete and bricks for my gang leader, now I am a mason myself"* (FGD participant).
- c. *"I have many years of experience in construction. I learned from my father that he was a good carpenter, now I have inherited his skills, I never went to any school"* (FGD participant).

Source: Interviews' Transcript, 2021

Informal construction workers were asked to provide their views regarding how they manage their own HS while working on formal construction sites. The majority blamed the construction site managers for not providing a safe environment; they noted that they could not make demands or voice their opinions because of the tightness of the labor market. It was revealed that workers try to observe certain safety protocols themselves so that they finish the jobs and get paid, which is a more important issue, as explained by one participant:

"Everyone takes care of themselves individually, it is hard to work collectively (on health and safety issues) because everyone has their own needs (financial); you might say I am not going to do that job because it is dangerous, but someone else will do it" (FGD participant).

With the exception of the above, it has been noted that workers are very aware of the fact that the construction site managers are supposed to provide them with PPE; therefore, they blame the managers for being a contributing factor to injuries at work:

"Our bosses (site managers) are supposed to make sure the work environment is safe and give us safety equipment; we try our best to make sure we stay safe. Most of the time, I check the

scaffolds myself before climbing up when working at a great height. It is because I once fell from a scaffold and broke my leg, but I was only given first aid. I learned the hard way" (FGD participant).

Others noted that they do not have to worry much about HS because death comes to everyone, *"everyone dies, if it is your day even if you wear everything, you will die."* This statement indicates the ignorance in relation to the importance of HS; therefore, workers' behaviors could be termed reckless regarding HS, but the fundamental problem could be due to a lack of adequate training and knowledge regarding safety protocols on site.

Working Conditions and Environmental Factors

Factors that have negative impacts on HS in developing countries include, among others, extreme weather conditions, poor infrastructure, communication problems due to poor education and literacy, unregulated practices on construction sites, unavailability of equipment, and the improper use of equipment (Kheni & Braimah, 2014). Findings in the current study have shown that extreme weather and difficult working conditions contribute to the way in which workers practice safe behavior at work. Furthermore, as previously mentioned, workers are unable to make demands for a safer environment or the provision of safety equipment, depending on the weather conditions.

(a) Weather Conditions

The current study was conducted in Dar es Salaam and Dodoma, where the weather can reach up to 40 degrees centigrade during the hot season. Most construction projects are implemented during this period to avoid the rainy season, which hampers the timely completion of projects. In this regard, workers must work long hours without any breaks to meet the required deadlines before the rainy season. Findings have also revealed that sometimes workers collapse due to the extreme weather and long work hours. Therefore, workers are exposed to extreme heat for long periods and without any breaks, except for a few minutes to enable workers to buy lunch from food vendors served outside the construction areas. A worker in the FGD explains:

"Dar es Salaam is very hot; we do not get time to rest. If you are given a piece to finish, you must do everything to ensure it is finished; we work for long hours to finish the work"

assigned for the day, we become fatigued, and sometimes our colleagues collapse due to the extreme heat” (FGD participant).

And:

“The only time you get to rest for a few minutes is during lunch, the heat is too much, you are given 30 to 60 minutes to eat, but since you have to finish your work to get paid, sometimes you take 25 minutes and then run and finish your work” (FGD participant).

The findings show that the workers are not happy with their working conditions or the way in which the managers supervise them. The workers complain about not being given time to rest or specified resting areas, *“no resting areas, the areas where you can chill for a while are full of construction materials.”* They also take risks working in such an environment to earn an income. When the managers were asked about working conditions for workers, they responded that they provide what they can, according to the budget, noting that they do not want to incur extra costs by constructing a resting area with facilities such as cold water and cool air, as this would increase the budget and minimize the profit:

“We provide what we can; imagine a building as a resting place for 50 workers; it will have an extra cost, which we cannot afford. We want to do all these things, but our budgets are tight, and we cannot” (Manager, key informant).

Another manager noted that having resting places for workers would encourage them not to work, that workers would sneak out and have a rest, and the project would not be completed on time; therefore, providing one hour for lunch was sufficient time for a worker to rest.

When the workers were asked if they were provided with PPE and if they used it during the hot season, the majority responded that using plastic helmets and gloves would exacerbate the situation since they get too hot. Consequently, when they work on construction sites that provide such equipment, they tend not to use them during hot periods. This finding was supported by the managers who asserted that the workers take off the safety equipment and misuse the helmets, using them to drink water and sometimes putting food in them:

"They do not wear the helmets; for example, they use them as cups for drinking water; I have also met a few with helmets full of rice and beans; these are not important tools" (Manager, key informant).

This finding indicates that the working environment does not have sufficient facilities to cope with different weather situations, such as cups for drinking water; therefore, the workers are forced to utilize whatever is available to help themselves.

(b) Difficult Working Environment

The current study also noted that managers and workers complain about strained working conditions; this could be termed a way of "distancing oneself" from a troubling situation and expressing anxiety and stress (Jeschke et al., 2021). The managers in the current study revealed that most of the time, the workspace provided for construction is tiny, and they must organize all works and materials in the given space, but above all meet the required deadlines; therefore, it is impossible to follow every stage of the OHS protocols. A manager in the Karikao area, in Dar es Salaam noted:

"Look at this workspace, I am erecting this building in between buildings, and as you can see, businesses are operating in every square outside; how will I meet every safety protocol here? (showing the tiny free space available), it gives me stress, and the workers have to cope; it is all we have" (Manager, key informant).



Source: Gervas, 2021

Photo 1 Dar es Salaam. A photograph showing a group of informal construction workers, working at a great height without any form of PPE, while the site housekeeping is untidy

Workers also noted that the difficult working conditions, with materials such as sand, cement, steel, wood, wire mesh, and machines all in one place (see photo 1 make the environment heavy and lack adequate air circulation. Therefore, the workers feel that they may contract diseases without knowing, such as tuberculosis. One member noted:

“There is no good site arrangement, maybe because the place is too small. All materials and types of equipment are in the same place; we mix concrete, and all the cement is stored around the same area. I got tuberculosis without knowing four years ago from inhaling dust and chemical materials” (FGD participant).

Discussion

Power of the Construction Site Manager to Enforce Compliance with HS on Site

The effective management of HS is the function of the construction management from the top level. Findings from the current study have revealed that company policies pertaining to HS greatly influence informal workers' practices in relation to HS on construction sites. This is in line with studies by (Kheni & Braimah, 2014; Lars et al., 2021; Lingard & Rowlinson, 2005), who emphasize the importance of commitment to safety on the part of the management. The study also reveals that company policy on safety, as part of the management's commitment, plays an important role, as noted by Heerden (2018) and Kheni & Braimah (2014). However, the current study found that although policy statements on HS exist in construction sites, the enforcement of such policy statements and rules is often non-existent. Findings by Mohammadi et al. (2018) in Nigeria conclude that although most construction companies do have an active OHS policy on the construction sites, companies rarely fully implement these policies, as they are associated with increasing construction costs ultimately lead to fewer profits.

Although Hale & Borys (2013) maintains that managers' organizational planning and control are an effective means of controlling and eliminating risks, the current study found that site managers are not using any organizational planning or control mechanisms and instead focus on the completion of construction projects. Managers perceive safety as secondary in their daily

duties. None of the managers revealed a genuine concern for HS. Furthermore, it has been revealed that construction site managers do not provide safety induction training for workers prior to the commencement of construction work. In contrast, safety equipment is mainly provided to "cover-up" when safety inspectors or important government officials visit the site. From a different perspective, a study by Muhammad et al. (2015) reported that the management of construction companies is ineffective in interacting with the workers of the lower ranks in the construction hierarchy; therefore, workers are independent pertaining to HS risks on site. In addition, Patel & Jha (2016) speculated that construction companies tend to set a low budget for HS implementation on construction sites, which affects the hazard management behavior of individuals working on the site, pre-disposing them to the likelihood of injuries. In this study, informal construction workers, as the frontline, blue-collar workers on the site, are more likely to be exposed to risks of injuries than any other group.

The study reveals that although construction site managers are vested with the mandate to manage HS on construction sites, they may not have the power to influence enforcement since they are also employees of the main contractor. The main contractor, the top-level manager, possesses all the resources to run the construction project; therefore, if the main contractor has not prioritized HS, the construction site managers may not be able to influence change. The client and the main contractors decide the financial resources and budgets for OHS as the top-level managers in the construction site hierarchy. As argued by Styhre (2012), the construction site managers deal with the practical issues that threaten the peace of construction progress, while issues regarding workers' HS are dealt with when time permits. It explains why site managers prioritize the timely completion of the project rather than safety, as this is what the main contractors require.

Workers' Power to Demand Enforcement of HS on Construction Sites

The individual attributes of construction workers, such as their work experience, age, education, and safety awareness, contribute to workers' practices regarding HS while on-site (Phoya & Kikwasi, 2017). The study reveals that the lower-level education of most construction workers limits their knowledge and understanding of safety issues and their compliance with rules and regulations on-site. Most workers are middle-aged, thus making them "fighters" in terms of being the breadwinner of the family; this influences their decision to ignore safety rules. Workers

perceive HS as a subsidiary to their primary needs: income and job security. They are working hard with the motive that it gives them a chance of being hired again in another construction project. According to the Power Resource Approach (PRA), as used by Wright (2000), Silver (2003), and Schmalz et al. (2018), workers can collectively mobilize and advance their issues or interests with different power resources (associational, structural, institutional and societal). However, in this study, it has been noted that most construction workers are not unionized. In the study conducted by Gervas (2021) in Dar es Salaam and Dodoma, only 19% of construction workers are members of worker unions. The workers have *associational power*, but it is limited in terms of application; traditional associational power entails collectivizing workers to give them greater bargaining power against their employers (Gervas, 2021). However, instead of applying this power to demand the adequate enforcement of OHS regulations on-site, they use it to tackle issues that affect them, primarily welfare issues directly. Like Guy Standing, this study argues that the relationship of production limits workers and that the temporary jobs, the uncertainty of accessing jobs once lost, the increasing competition for jobs, and unstable income pose challenges for them. However, workers could exercise structural power in the form of disruptive power (Wright, 2000); they have workplace bargaining power due to their strategic importance in the construction sector and could demand better working conditions and the provision of safety equipment. Unfortunately, due to the tightness of the labor market and the precarious nature of jobs, workers are not able to disrupt the construction process due to concerns over the provision of safety equipment; since this issue is not important, the risks/consequences outweigh the gains. Disruption is only visible when workers have not been paid their wages. This provides an interesting discussion that workers value their income above everything else.

Lastly, it has been noted that environmental factors affect both the site managers and the workers on construction sites, namely, site location and weather. This finding corroborates the findings by Jeschke et al. (2021) in their study regarding complaints relating to OHS. The study revealed that extreme heat or cold affected the pace of work and workers' safety. This study highlighted that Dar es Salaam and Dodoma experience extreme heat across most seasons of the year, resulting in workers failing to wear PPE due to the heat, while difficult working conditions

prevent managers from planning the site housekeeping, exposing workers to risks in the construction process.

Managers have limited power to influence policy since the main contractors have ultimate responsibility but are never on-site; a certain level of negligence regarding compliance with safety regulations could be attributed to the managers. However, authority in the chain of command prevents managers from fully enforcing compliance due to limited financial resources budgeted for HS on construction sites. The latter, therefore, concentrate on project completion and profit maximization, while the workers are most concerned about income, the tightness of the labor market, and competition; thus, safety regulations and procedures become secondary issues. As Guy Standing argues, these workers are supplicants; they need to respect the managers to receive their income and keep their jobs.

Conclusion and Recommendations

The current study reflects why site managers and workers do not comply with OHS management on construction sites. The study draws its emphasis from Guy Standing's notion of the precariat to understand the characteristics of the workers on construction sites and uses the PRA to identify why there is incompliance with safety rules and regulations on construction sites. Findings have revealed that both managers and workers play an important role in the management of HS. To this end, managers do not comply with the governing legislation regarding HS since they do not have structural power to enforce this; such authority is vested in the main contractors and the clients who are never on site. Moreover, since workers are not sufficiently knowledgeable about the precarious nature of their jobs, they are hesitant to demand such services and concentrate on wage-for-labor only; workers do not apply their associational or structural power resources to influence the managers to enforce compliance. Managers ignore most safety protocols, such as training workers on OHS before the commencement of the work, providing adequate PPE, ensuring construction sites are hazard-free, and good housekeeping of materials and equipment. Instead, they focus on minimizing costs, increasing profits, and ensuring the timely completion of projects.

This calls for an effective and inclusive Safety Management System (SMS), taking on board the structural hindrance of the main contractors and the precarious nature of construction workers. The SMS should ensure an effective flow of communication between the contractors,

construction site management, and workers. Managers should understand that workers are not tools for production and that understanding risk is based on rational logic and experience. Since most workers are not educated and have not attended any safety training, it would be beneficial for training to be provided often during the construction process. Workers should be able to communicate directly and voice their demands without the fear of losing their jobs. Therefore, a more comprehensive OHS policy (building and construction industry) is recommended to achieve this. The construction safety rules should recognize the informal workers who provide labor on formal construction sites, and OHS training for all informal construction workers should be implemented as a mandatory requirement.

Author Contributions: Aloyce Gervas is the lead author, wrote and completed the original draft of the manuscript. Godbertha Kinyondo, Nina Torm, Mackfallen G. Anasel provided an intensive review, suggested many revisions that were incorporated in the manuscript. All authors read and approved the final manuscript for publication.

Funding: This research was fully supported by the Informality and Social Protection Project (SPIWORK) funded by DANIDA-FFU and implemented by Roskilde University Denmark on a partnership agreement with Mzumbe University Tanzania and University of Nairobi, Kenya.

Acknowledgments: The authors appreciate the kind support of Prof. Lone Riisgaard, from the Department of Social Sciences and Business, Roskilde University, Denmark for overall review of the manuscript and provision of invaluable and constructive comments. Also, thanks for the anonymous reviewers for their constructive comments.

Conflicts of Interest: The authors declare no conflict of interest.

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