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Utility of Professional Indemnity Insurance in the Building Sector

Chipozya Kosta Tembo[1], Paulson Hangoka[2], and Franco Muleya[3]
[1]Senior lecturer, Department of Construction Economics and Management, Copperbelt University, P.O. Box 21692, Kitwe, Zambia. E-mail: chipozya@yahoo.co.uk (corresponding author).
[2]Quantity Surveyor, Stefunutti Stocks Zambia Limited, P.O. Box 32054, Lusaka, Zambia. E-mail: paulsonhagonka@gmail.com
[3]Associate Professor, Department of Construction Economics and Management, Copperbelt University, P.O. Box 21692, Kitwe Zambia; Research Associate, Quantity Surveying and Construction Management, Faculty of Natural and Agricultural Sciences, University of the Free Sate, Bloemfontein 9300, South Africa. E-mail: muleyaf@yahoo.co.uk

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Abstract: Projects in the construction industry are becoming more complex and riskier resulting in claims against consultants. It is unclear how consultants in the construction industry are using the professional indemnity (PI) insurance as a protection mechanism in the Zambian building sector. Expert sampling was used to select the sample sizes for the participants, one from each firm of interest. A self-administered questionnaire survey on insurance companies and consultant quantity surveyors was used to collect data. The study recorded response rates of 71% from general insurance companies and 48% response rate from quantity surveyors. Descriptive statistical analysis was used to analyse the data due to non-randomisation of the sample. Additionally, content analysis was used for open-ended questions. The findings show that the PI cover is relatively easy to acquire; however, there is a gap in knowledge on which risks are covered by the current PI policy among insurance firms and consultant quantity surveyors in the Zambian construction industry. PI in the Zambian construction industry is a general insurance cover which does not specify the risks covered resulting in low uptake of the PI cover. In most cases, professional indemnity insurance is not enforced even when there is a default case because it is not mandatory. The study therefore recommended that improvements must be made to the current general professional indemnity cover to make it mandatory and specific to the individual consultants so that specific profession risks are covered.

Keywords: Professional indemnity insurance (PII), consultants, building projects, Zambia.

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1. Introduction

The project management process normally has risks regardless of the project magnitude. Various risks and various mitigation measures exist depending on various issues such as procurement method used, contract used, bonds and other available securities. These are mostly actualized during the contract management process. Nevertheless, to successfully execute a project, in the contract management phase, various measures should have already been put in place. These measures could include bonds, insurance and guarantees of various types (Mason, 2016). In Nigeria, Fasanyoye (2021) notes that of all the securities used in construction the PI is the most utilized.

Literature shows that various risks are faced by construction professionals such as architects, engineers, quantity surveyors and project managers (Hussin and Ismail, 2016). This occurrence has resulted in increasing claims against professionals from their clients (Mukuka, et al, 2013; Sibanyama et al., 2012; Shah, et al., 2014; Clandia, 2020). Currently one of the main protection strategies that the consultants can use is the professional indemnity insurance (PII). PII indemnifies against the loss/damage which comes as a result of misconduct/fault or negligence by professionals committed in their course of providing their services. Professional negligence can be defined as failure by a professional to perform a duty for the client to the required standard leading to financial loss to the client (Brumpton, 2018). Examples of professional negligence include an architect making a mistake in a drawing which renders the design inadequate, the quantity surveyor making inadequate provision in cost estimate and an engineer making a miscalculation resulting in overdesign or under design of structural members on a

project (Begley, 2010). Professional indemnity insurance is necessary for both individuals and businesses that provide professional advice or services as part of their work (AXA, 2021). The PII is normally based on an insurance policy indicated in a construction and/or consultancy contract (Mason, 2016). The insurance policy is a liability-based claim made policy (The Association of Professional Engineers Scientists and Managers, 2017).

The UK construction industry is currently going through what is known as a hard market for the professional indemnity insurance. Some of the characteristics of this situation are; insurance companies pulling out from providing the cover, high premiums, and more restrictions in acquiring the cover (Peter, 2020; GlobalData, 2018). One of the main factors leading to this situation has been the increase in PI claims within the UK construction industry (Ibid). Clandia (2020) indicated that the South African built environment has also had a significant increase in professional indemnity claims in the last couple of years. The Zambian construction industry (ZCI) is not an exception to matters of professional negligence, malpractice or misconduct, errors and omissions which normally result in claims (Sibanyama et al., 2012). Problems of design errors, inadequate design, quantity miscalculations or inconsistency, omissions, among others have been reported on various projects in both private and public building projects (Tembo-Silungwe and Khatleli, 2019). Tembo-Silungwe and Khatleli (2019) established that consultants are the highest risk contributors on building projects in the ZCI. The auditor general report of 2018 outlines some irregularities and issues of poor performance of building projects, characterized with poor quality, time and cost overruns. Some examples that could have suffered claims include the society business park which had failing columns even before the multiple storey building could be complete, the Alick Nkhata bridge which had design problems due to a very steep slope.

Claims come with high monetary amounts that are beyond the capacity of the professionals to cover the amounts from individual accounts (Emils, 2016). Without the PI cover individuals and firms risk high exposure to insolvency, and reputation damage which ultimately leads to folding up of the firm. However, with all the evidence pointing to possible claims against consultants in the ZCI, it is not clear whether the professionals are protecting themselves using the PI and how the PII is working to guard against claims and the risk factors it covers. Research that is closely related to the subject of project securities in Zambia include: Sibanyama, et al. (2012); Muya et al. (2013); and Tembo-Silungwe and Khatleli, 2019). Sibanyama, et al. (2012) considered an overview of claims (claim may emanate from breach of contract, misconduct, negligence, and other liabilities that may be implied) while Muya et al. (2013) uncovered causes for cost escalations, schedule overruns and quality shortfalls. Tembo-Silungwe and Khatleli (2019) investigated the perceptions on risks affecting building projects in Zambia. None of the prior research done specifically covered professional indemnity thereby leaving this research gap open. This research was aimed at exploring the use of professional indemnity (PI) and Professional Indemnity Insurance (PII) in mitigating claims against professional misconduct and negligence among consultants in the Zambian construction industry (ZCI). More specific the study sought to:

1. Investigate the factors and requirements that are considered when evaluating an application for professional indemnity cover.
2. Determine the risks that are covered by the Professional indemnity policies in the ZCI.
3. Examine the extent to which Professional indemnity insurance is utilized in the ZCI.

This research reinforces the need for professionals to protect themselves as well as their clients from financial losses, help improve project delivery and performance in the Zambian building sector. The study specifically attempted to bridge the existing knowledge gap on PII. The next sections covers the literature review specifically; an overview of professional indemnity insurance, professional indemnity insurance for construction consultants, risks faced by consultants in the ZCI, consultants on building projects (roles and associated risks), Determinant of PII use and cover (procurement route contractual requirement of PII). Further, the sections cover the methodology used for the research, followed by the results and discussions of findings, and finally the derived conclusions.

2. Literature Review

2.1. Professional Indemnity Insurance

Professional indemnity insurance (PII) provides cover to professionals against their legal liability to pay damages arising from negligence in their performance of professional duties (Shetty, 2015). Professional indemnity insurance is written on what is known as a "claim-made" basis (rather than when there is a breach of professional duty that has occurred). This simply means the policy is in force on the date a claim is made against the construction professional to cover for the loss (Alliant, 2021). Common issues covered by PI insurance include, negligence, misrepresentation, inaccurate advice, or failure to perform (errors). The PI insurance will generally cover legal costs and expenses, as well as any damages or costs awarded against the defendant (GlobalData, 2019). Debela (2018) explains that there are two methods of assessing the extent of PI insurance cover. The first is a simplified method that applies for conventional consultancies not related to construction. The simple approach used is to determine the level of cover on the fee to be paid. The more comprehensive approach is the risk assessment-based method which addresses the particular risks associated with the type and nature of the professional service involved. Roger et al. (2021) argues that better alignment of insurers' strategies with their clientele and shareholders when designing products, sharing information is important in developing insurance related policies.

In the construction industry, the second method is preferred for projects because it covers the services to be offered by a professional on a project. The professional activities may differ exceedingly, for example, what architects and engineers do differ despite both design oriented. It is for this particular reason that the activities covered by the policy are in most cases required to be well defined to suit the particular professional. Once the activities are defined, then the PI cover liability at law may be subject to specific exclusions such as losses arising from pollution, asbestos and toxic mould, intentional and dishonest acts, faulty workmanship, etc. (Smith, et al.,

2015). Design professionals (consultants) are generally responsible for a number of tasks which include designing the project and administering the contract during the construction phase. PI insurance indemnifies the insured against legal liabilities from professional activities (Hussin and Ismail, 2016). PI insurance for consultants cover individual professionals or companies accused of negligence service and/ or advice given which result in some form of financial loss to the clients (Burke Insurance Ltd, 2019).

PI insurance in the United Kingdom construction industry has had soft market conditions for more than a decade. Recently, the PI market conditions have had a rapid degeneration since late 2018, especially in the construction sector (Marsh, 2021). Whilst the impact of the current market conditions has been felt more by the contractors, the consultants have also suffered from these conditions (Peter, 2020). Due to the hardening of the PI market, it is increasingly common to find that consultants and contractors do not hold or are struggling to obtain PI insurance at the required or desired level. They are also struggling to meet the terms that are negotiated and agreed with their employers (Ottaway, 2020). Allianz (2018) highlights some of the main causes of the hardened PI Market; increased claims in the construction industry, fire safety fears (Grenfell tragedy), levels of insolvency and contracting concerns.

2.2. Risks Faced by Consultants in the Zambian Construction Industry

Regardless of how much experience or reputation the consultant(s) have, claims may be made against anyone. Muya et al. (2013) confirmed high levels of prevalence of cost escalation, schedule overrun and quality shortfalls in the Zambian construction industry. Sibanyama, et al. (2012), identified some of the main factors that could bring about claims on construction projects. Some of them could be directly linked to the duties of consultants on a project such as inadequate site investigation, inadequate design, delayed payments, too many provisional quantities in bill of quantities, ignoring constructability issues during designing, and poor risk sharing among others. The findings of Tembo-Silungwe and Khatleli (2019) confirmed that most of the risks are consultant related (e.g. design, monitoring and supervision), thereby concluding that the consultants are accountable for the most common risk factors on building projects in the ZCI. Some of the risk factors/causes of claims include but not limited to; inadequate site investigation, ignoring constructability issues during designing, poor risk sharing, delayed approvals by project managers, inadequate design, delay in payments, defects detected after defects liability period, (Sibanyama, et al., 2012).

2.2.1. Consultants on building projects

A professional consultant is one that provides specialist design, cost estimates, advice or other services in relation to a construction project (Reuters, 2017). Depending on the nature of the project there could be various consultants on a construction project (quantity surveyors, architects, engineers-electrical, structural, civil, mechanical, etc. & project managers). A quantity surveyor is an expert with the art and skill of costing all stages of the building process, offers expert advice on construction costs (RICS, 2018). According to Gbajobi et al. (2018), the following are some of the risk factors that affect quantity surveying practice: valuation risks, cost related risks, information risks, estimating risks, financial or resource risks, and statutory compliance risks. The architect helps the client to realize their requirements in an understandable form, creating a reality from an idea (Hackett et al., 2016). As the architect breaks down the clients requirements, they work within the guidelines of any statutory conditions that may apply. The architect produces conceptual drawings which have to be approved or disapproved by the client before producing detailed drawings (Anyanwu, 2013). The Australian Institute of Architects (2017) outlined some common risk areas for architects which include liability for advice, design and documentation without contract administration, certification without inspection and contract administration, valuations and working in specialist areas. The engineers are part of the planning, design of elements of specialty and the supervision of engineering works. Common risk areas for engineers include design risks and advice that they offer to the clients (Association of Consulting Engineers of Ireland, 2021). A project manager is mainly responsible for delivering the project on time, within the agreed budget and to the agreed level of quality, such that the project's outputs will allow the said benefits to be achieved (Abu et al., 2011). Tembo-Silungwe and Khatleli (2019) highlighted ineffective monitoring of risks, holding key decisions in isolation, poor coordination and communication as the primary risks associated with a project manager.

2.3. Possible Determinants of PII Use and Cover

In the construction industry, the procurement method and type of contract used determines the stakeholder that will bear specific risks. Additionally, if the PI cover is mandated, it must be considered in line national laws and the client stipulations. The choice of procurement methods leads to different ranges of responsibilities, opportunities and risk for various stakeholders on a project (Adu, et al., 2016). This means that depending on the type of procurement option and form of contract used on a project, construction professionals (consultants) may encounter different liabilities to insure against. Some of the procurement options include the traditional procurement, design and build. As an example, design responsibilities shift from consultants to the contractor when using the design and build method while in traditional the design responsibilities are retained by consultants. Jobidon et al. (2021) emphasises the need for design and build contractors on construction projects to take up liability policy as well as professional indemnity to cover losses resulting from error or omission associated with in design and construction.

Most contracts would have contractual requirements for PI Insurance. There are different kinds of professional service contracts in the construction industry; some common examples are the international federation of consulting engineers (FIDIC) White book ‘Client/Consultant model services agreement’ and the new engineering contract NEC 4 ‘Professional service contract’. In most of these forms of contract if not all, there is a clause on PI insurance.

Table 1. Details of respondents

Target Respondents	Population	Sample Size	Respondent	Recorded Responses	Response Rate (%)
Insurance Firms	20	20	12	12	70.59
QS firms	25	25	12	12	60.00
*Engineering firms	17	17	1	1	6.67
*Architectural firms	68	58	3	3	5.17

*Results not reported

Some of the reasons for including an insurance clause in the contract and requiring insurance coverage are: the consultant or a firm can be held liable for damages by the client, the client should be able to rely on the consultant's expertise to do the job, and if they do not, they should pay for the consequences, the consultant is a source for payment of claims against a firm, PI helps the client to maintain project budget, helps maintain good loss history and lower insurance costs (Alliant, 2021). The next section discusses the method that was applied in this study.

3. Method

The study adopted the mixed methods research approach owing to deductive and inductive nature of the research to some extent because the factors that were investigated were objective in nature and required the use of numerical data (Creswell, 2014). The study was exploratory and explanatory in nature and it was sequential with consultants answering first then insurance companies. This was necessary in order to understand the factors and requirements considered for professional indemnity, the risk factors the policy covers in the Zambian construction industry and how it is currently working in dealing with claims that may arise. To understand the current practice, a subjective approach was utilized in order to elicit a brief explanation through the use of open-ended questions. The philosophy adopted for the study was pragmatism because the study was qualitative and quantitative to some extent mainly to understand current practice on PI and PII. (Saunders et al., 2016). The study used the survey research strategy though interviews would have been ideal. The data collection was conducted during the first wave of the corona virus pandemic. Initially interviews were sought but respondents opted for the interview questions to be reduced into a self-administered questionnaire due to an overwhelming workload during this period due to many of their colleagues that were unwell. Not all organizations were captured in the questionnaire distribution exercise because emails were returned or contact numbers given in the public domain were not operational. Additionally, some firms were closed during this period mainly with consultants working from home.

The questions were developed in line with the research objectives that were to investigate the use of PII in the building sector in Zambia. The building sector was chosen because it has the highest number of projects undertaken. The questionnaire was distributed using two main modes firstly the questionnaires was self-administered to accessible organizations and secondly emails were sent to organizations with the Google form as a mode of data collection. Consent to participate in the study was obtained through phone conversation after which data was collected through the research instrument. The participants were general insurance companies and consultants (quantity surveyors-QS, architects, civil/structural engineers and project managers) as shown in Table 1. The questions were closed and open-ended in nature (See the links in the appendix to connect to the questions used).

Expert sampling was used to select the sample sizes for the participants, one from each firm involved in building projects as shown in Table 1 namely insurance companies' quantity surveying firms, and engineers owing to the small sample sizes. A randomized approached was used for Architects. Kumar (2011) explains that expert sampling gives confidence that the opinions from the sample of the selected experts are more credible since the experts are believed to be more knowledgeable and familiar with the field of enquiry (professional insurance indemnity). For the insurance companies, only those offering PII were targeted. According to Saunders et al, (2016), data collected from the field in its raw form has very little meaning and application, hence the need to interpret and analyse it in order to draw meaning and make the information more useful and applicable. Descriptive statistical analysis was used to analyse responses from closed questions because the selection of insurance firms and consultants was not random. Additionally, content analysis was conducted for open-ended questions.

4. Results and Discussion

4.1. Response Rate

The response rates were 5.1 % and 6.2% for architects and civil/structural engineers respectively while the response rate for quantity surveyors (QS) was 48%. The consultant QS are the only consultants whose results are reported because they were deemed to be representative of the quantity surveying population. The data collected from architects and civil/structural is not reported because results were not representative of the population from which they were drawn. Several attempts were made to increase the response rate for reporting purposes but due to the voluntary nature of research the (Creswell, 2014; Kumar 2011) two groups (architects and civil/structural engineers) were omitted in the reporting. For insurance companies the response rate was 71%. It may be argued that the sample sizes in terms of numbers are small but small samples are not uncommon in built environment studies due to various reasons such as few experts in areas of specialty, few service providers such as insurance firms in this study. Other reasons include but not limited to low volume of activity in the insurance sector of the industry sector and small population of firms which cannot be controlled. Various research papers in the built environment have utilised small samples and have produced credible results. Some of these studies include 23 from Pheng and Gracia (2002), 35 from Sarkar and Mangrola (2016), 32 from Pheng et al. (2016), 30 from Owusu-Manu et al. (2017), 43 from Muleya et al. (2020) and 35 from Tembo et al. (2022).

4.2 Characteristics of Respondents

The respondents were general insurance companies (from various positions as shown in Table 2. Education levels for insurance respondents ranged from diploma to Masters' degree (3 had diploma, 6 had a bachelors' degree, 2 had master's degree). QS Consultants respondents had levels ranging from Bachelors' degree to Masters' (11 had

bachelors' degree and 1 had a master's degree). The selected respondents were qualified and with adequate experience in insurance and QS respectively. In terms of experience from the insurance firms, most of the respondents had more than 10 years of experience with a count of seven firms and the QS consultants had experience of between five to 10 years with a count of 8 firms. Others had more than 10 years of experience with a count of seven firms, with only one respondent with less than one year of experience. Five out of the 12 insurance practitioners were male and seven of the 12 were male. The age distribution for insurance practitioners was; one was above 45 years, six had an age range from 36-45 and five had age range of 25-35. For the QS consultants there was one female and 11 males out of a sample of twelve. Of these, three had worked in construction for more than 20 years, one worked for 11-15 years, one for 16-20 years, six for 5-10 years and one for less than 5 years but above one year. Of these, four firms had offered consultancy services in construction for more than 20 years, three for 11-15 years, two for 5-10 years and 3 for less than 5 years but above one year.

Table 2. Details of Insurance Practitioners

No.	POSITION OF RESPONDENT	PRIMARY PROFESSION
1	Underwriter	Insurance & Automobile Engineering
2	Assistants Underwriter	Insurer
3	Insurance business development and customer service executive	Insurance
4	Assistant Manager	Insurance
5	Manager-Underwriting	Insurer
6	Underwriter	Accounts/IMIS
7	Sales Representative	Sales and Marketing
8	Executive	Insurance
9	Accounts Executive	Underwriting
10	Underwriter	Assessment of Risks
11	Customer service executive	Insurer/Banker
12	Senior Manager Operations	Insurance

None of the insurance firms had been in existence for less than 5 years; over half of them had been in existence for over ten years as shown in Fig 1. The selected respondents were qualified and with adequate experience in insurance and construction respectively.

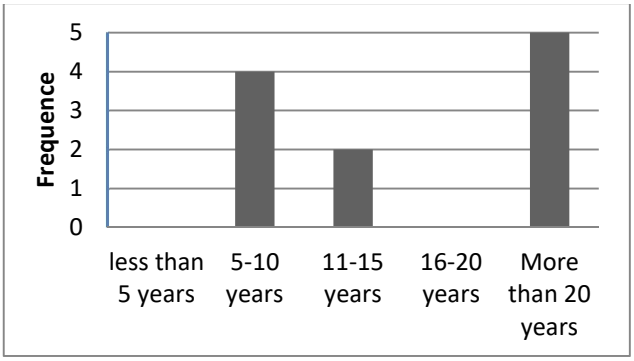

Fig. 1. Years of existence of insurance firm

4.3. Risk Factors Faced by Consultants

Several risks are faced by consultants with the most common being errors and omissions in design drawings (Table 3). This shows that engineers and architects are main contributors as they have the design function in their professions. Omissions in contract document could stem from the omission in designs presenting challenges to the QS and also presenting challenges to the project manager if these risks are not mitigated before execution of projects. The risks are an indicator that all consultants are affected in one way or the other therefore, it is prudent that all of them should obtain insurance cover.

Table 3. Risk Factors Faced by consultants

Risk Factors	Frequency
Delay in Contractor's Payment Certification by the consultant	0
Delay in Consultant's Approval of Shop Drawings	1
Delay in Consultant's Response to Requests for Information	1
Lack of Coordination among Design Disciplines	1
Delay in Consultant's Approval of Materials Submission	2
In adequate budgeting and contingencies	2
Poor coordination and communication	2
Ineffective monitoring of risks	3
Holding key decisions in isolation	3
Unclear Drawings and Technical Specifications	4
Inadequate specification	4
Inadequate site investigation	4
Omission in design contract documents	5
Errors and Omissions in Design Drawings	9

4.4. Risks Covered by PII

Below are some of the comments from the insurance companies. It appears from this that the PI cover is designed for all risks related to any given profession. However, from insurance respondent (IR5) establishing liability for certain risks may be a challenge due to multiple consultants and IR4 also suggested that they have a standard policy not specifically tailored to any given profession within the construction consultants.

IR1: *Professional negligence in performance of professional duties of the insured.*

IR2: *Negligence of the insured while performing their duties as professional in good faith.*

IR3: *Professional Indemnity cover, all sums including legal costs which the insured shall become legally liable to pay the third parties arising out of professional negligence.*

IR4: *Most of the above (risk factors) in table 3 are excluded on the standard policy but can be added to the policy at an extra cost.*

IR5 *"The indemnity insurance will cover any damages in relation to the professional practicing the said service. Since most of the professional technocrats handling projects usually hail from different firms performing different disciplines of practice. In these cases, it is very difficult to determine the level of professional negligence and hence leads to the joint venture not using professional indemnity. Usually, it is often included as a clause depending on the type of contract used".*

The cover for the PII from the findings seems to have challenges associated with it. It would be helpful to have

specific consultants have specific risks covered as opposed to a standardised one which is current practice. Moreover, should a claim be made, it may be easy for the insurance companies to escape liability because what is covered is not specifically itemised or stated.

4.5. Uptake of Professional Indemnity Policy by Construction Consultants in Zambia

The cover obtained is on an annual basis as indicated by all the insurance firm respondents. It was revealed that all consultants get PII cover to varying degrees. Some get on an individual basis while others get for individual project. Quantity surveyors and Engineers get some cover 58% of the time while Architects and Project managers get cover 75% of the time. Findings reveal that there are times when architects and quantity surveyors do not get cover and this was indicated as practiced on very small projects.

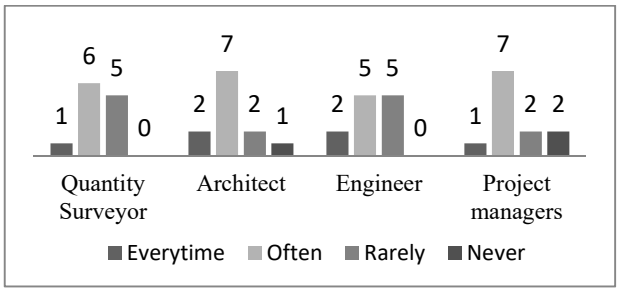

Fig. 2. Frequency of cover obtained by consultants

Nevertheless, in countries where it is law for a consultant to get cover, professionals would not have the option of avoiding cover regardless of project size. Comparing Professional Indemnity Insurance with other construction related insurance policies brings out the attitude of the construction consultants towards the cover. The results show that the uptake of professional indemnity insurance is low, with 6 out of 12 responses indicating that the uptake is on the low-end, 3 indicate average and only 3 out of 12 being on the other extreme. From the results it can be concluded that the uptake of professional indemnity policy by construction consultants in the Zambian construction industry is low.

Among the quantity surveyors 8 out of 12 were very knowledgeable over PII and the remaining 4 rated their knowledge moderate. The QS is the main consultant that is directly engaged in preparing contract documentation. If some are not very knowledgeable on how the PII works it can be speculated that numbers could be higher among the other consultants. Further, 9 out 12 QS firms have PII policy for their firms while 3 do not have. QS firms generally obtain PII cover for the firm as opposed to specific projects they are engaged in. This could be because they have noticed that many of their inefficiencies stem from design which is not their professional duty. This means that any inefficiency in their role could easily be blamed on designers (architects and engineers). The aforementioned can be an additional reason as to why the uptake of PII is low among individual consultants. Moreover, all firms that obtain PII do so only when it's a contractual requirement on a project. It is also more common that the consultants who take PII are from the private sector because public sector consultants seem to believe that they have some protection against liability as indicated by all public sector consultants.

The fact that there are insurance firms that have never insured some particular consultants as shown in Fig 2 (architects and project managers), with one of the reasons being that they have never received proposals from those particular consultants, could indicate to some extent that the idea of getting professional indemnity cover is not taken seriously by some of the consultants and clients despite the fact that the standard forms of contracts used between clients and consultants in the ZCI having a clause (liability, indemnity and insurance) stating that consultants should at all times from the commencement of works maintain an adequate professional indemnity cover with a reputable insurer. It is unclear how the professionals who do not obtain cover protect themselves from liability. Sibanyama et al. (2012) established that claims occur in the Zambian construction industry against consultants.

4.6. Uptake of Professional Indemnity by Construction Consultants in Comparison with Other Professionals

Before making any comparisons, with other professionals that take up professional indemnity insurance, the professionals had to be identified. This was done by asking the insurance firms which professionals get PII outside construction industry. The following were the findings: a total of 12 responses were received of which 10 insurance firms indicated lawyers, 11 indicated accountants, 11 indicated medical practitioners and one of the insurance firms included insurance brokers and agents. Another respondent stated that all professionals that require membership of a professional body are supposed to get the PI cover however, this is not evident among construction professionals. Comparing the uptake by construction consultants and the identified professionals outside the construction industry the results are suggesting that the uptake is Low. 2 out of 12 insurance firms indicated very low, 5 out of 12 indicated low, 4 out of 12 indicated averages and 1 out of 12 indicated very high. This result further amplifies the assertion that there is a gap that must be closed with regards to PII and construction consultants in the Zambian construction industry, considering that the construction industry is one of the industries with high risks faced by stakeholders.

4.7. Calculation of the Cover

There are various ways in which the cover is calculated. 7 out of 12 respondents stipulated that the professional indemnity policy is calculated by applying a rate to the limit of liability of a firm or project, 2 out of 12 respondents stipulated that they apply a rate on the annual turnover of the client, 1 out of 12 respondents stipulated that they calculate the total premiums plus 3% value added tax (VAT), 1 out of 12 indicated that they apply a rate to the limit of liability plus 3% Insurance premium levy. "Insurance Premium levy is a levy that is imposed on all insurance premiums for all classes of insurance business excluding re-insurance and commissions earned on brokerage. 1 out of 12 respondents stipulated that they calculate by applying a rate on the limit of liability or turnover plus per capita loading on the number of skilled professionals involved. This shows that no insurance companies actually base their PII cover on the project to be

undertaken. This raises the question on the adequacy of the cover calculated.

4.8. Limit of Professional Indemnity Cover

A limit is the highest amount the insurance company/firm is willing to pay for a claim that the insurance policy covers, in case the claim exceeds the limit of cover the excess amount will have to be covered by the insured firm and not the insurance firm, therefore it could be concluded that the limit of cover is one of the most important aspects or concepts that requires understanding when considering purchasing an insurance policy. According to Hussin and Ismail (2016) the limit of indemnity helps determine whether or not the cover will be sufficient to cover the anticipated risks. From the responses received one thing that comes out prominent is the limit of professional Indemnity cover which varies depending on the factors being considered. The broad theme of the limit varying was further divided into five subcategories, which are from the responses received; the reason for the categories is that, the factors that define the variation were different. 6 out of 11 responses stipulated that the limit of professional indemnity cover varies depending on the requirements from the clients, 1 out of 11 responses stipulated the limit of professional indemnity varies depending on the annual turnover of the insured, 1 out of 11 responses stipulated the limit of professional indemnity varies depending on the contract used, the type of contract was not specified, 1 out of 11 stipulated that the limit of professional indemnity cover varies depending on the risks involved, 1 out of 11 stipulated that the limit of professional indemnity cover varies determined by the cost of the project. Literature also affirms that the professional indemnity cover varies and that the main player in the variation is the client (insured). The decision by the client (insured) may be affected by other factors like the amount of risk they are likely to encounter on a particular project (AON, 2018; JLT, 2018). Only one QS firm considers project and another one the risks involved; half base it on client requirements. The client requirements can only be beneficial as a criterion if the client is knowledgeable.

4.9. Factors and Requirements Considered When Evaluating Applications for Professional Indemnity Insurance

The factors and requirements formulated from the questionnaire survey and literature have been presented in Fig 3. These are presented using frequencies. Fig 3 indicates that some factors are considered more than others depending on the insurance company preferences. The type of work undertaken is considered by most of the insurance firms as the most critical factor to consider, followed by cost of project, duration of project and experience of the applicant. From these factors it is evident that acquiring the PI is fairly easy, the factors will only affect the limit of indemnity and how much the insurance company can cover the consultant(s) considering the factors that are being focused on.

Requirements considered for an application of PI cover were identified as; contract agreement, practicing certificate, company registration information, ability to pay the premium, academic qualification, type of consultancy, professional registration, legal advice, annual income from project, and Curriculum vitae of the professionals. While from the QS firms, one needs contract details, CVs for professionals, practicing certificate, academic qualifications. Clearly, from the list of these requirements, it could be deduced that none of them is restrictive in nature meaning that they can be easily provided. Consultants therefore can manage to takeout cover for professional indemnity without restrictions due to the requirements needed.

The primary function of an insurance cover is to protect the client (policy holder) against possible chance of loss that may be as a result of risks they may encounter from specific activities they engage in. From the responses received not all the consultants obtain PII. Literature revealed that in the Zambian construction industry the consultants are among the highest contributors of the common prevalent risk factors that occur on building projects in the industry (Tembo-Silungwe and Khatleli, 2019). The direct implication of this phenomenon is that consultants (quantity surveyors, architects, civil/structural engineers and project managers) are susceptible to claims against them as they carry out their professional duties.

4.10. Claims on Professional Indemnity Insurance

8 out of 12 insurance firms have never settled any claim(s) against construction consultants and only 4 out of 12 insurance firms have settled consultant claims therefore consultants should get PI cover. From the 4 that have settled claims, results show that engineers have the most claims followed by architects and then quantity surveyors and project managers (See Fig 4). Aggregating the number of claims each insurance firm receives per year, 3 of the 4 respondents indicated less than 5 and the other 1 indicated between 5 and 10.

These results present a gap between what is in the literature and what is currently happening in the Zambian construction industry. From the literature that was reviewed on perceptions on the risks affecting building projects in Zambia by Tembo-Silungwe and Khatleli, (2019) and an overview of construction claims by Sibanyama, et al,, (2012), it was established that consultants are among the highest contributors of most risks that occur on projects in the Zambian construction industry. This indicates that consultants are more at risk of claims against them than most professionals but the results present a different picture with only a few numbers of claims. Perhaps other mechanisms are used for their security such as bonds and other contractual clauses.

4.11. Use of Professional Indemnity Insurance by Construction Consultants from Insurance Firms/Companies' Perspective

The comments from the respondents are presented in the Table 4, with only 7 out of 12 adding their views on the current situation on professional indemnity insurance in the Zambian construction industry. The respondents were identified as IR for confidentiality purposes. From the comments, two paramount lines of thought came out; the first is that there is need to create awareness on the importance of buying professional indemnity insurance in the construction industry and the second is that professional indemnity should be made compulsory for all

construction professionals, IR 7 adds that government should put up legislation to make PI compulsory (IR5&IR).

In other construction industry like the United Kingdom (UK), it is mandatory for every professional to have the PI cover before they can be engaged on a project supported (Emils, 2016). The two lines of thought are hinged on the following factors as identified from the comments; the construction industry has been growing in the past few years indicating more risk to the involved parties. Further, the risks that are involved are too high, the sums involved are too huge to be paid by a firm, PI guarantees professional execution of projects and protects the client (Mason, 2016). The other comments stress that the uptake of the professional indemnity is very low by construction professionals (IR4 & IR4). These comments clearly suggest that action needs to be taken in order to improve the current Professional Indemnity environment. It is unclear whether the policy is affordable because no concern was raised by insurance companies and QS consultants. Nevertheless, it was the general view of QS consultants that PII in Zambia is not very developed. This could be the reason for the low up taken by professionals. For example, RICS has made it as part of rules of conduct for all their members to acquire PI insurance cover (RICS, 2019).

5. Discussion

PII is a security that is utilised by consultants as a mode of risk transfer for professional negligence. This research investigated the factors and requirements that are considered when applying and evaluating an application for a professional indemnity cover, the risks prevalent among consultants and their cover in the PI and the extent to which Professional indemnity insurance is utilised in the ZCI. These will now be discussed in detail.

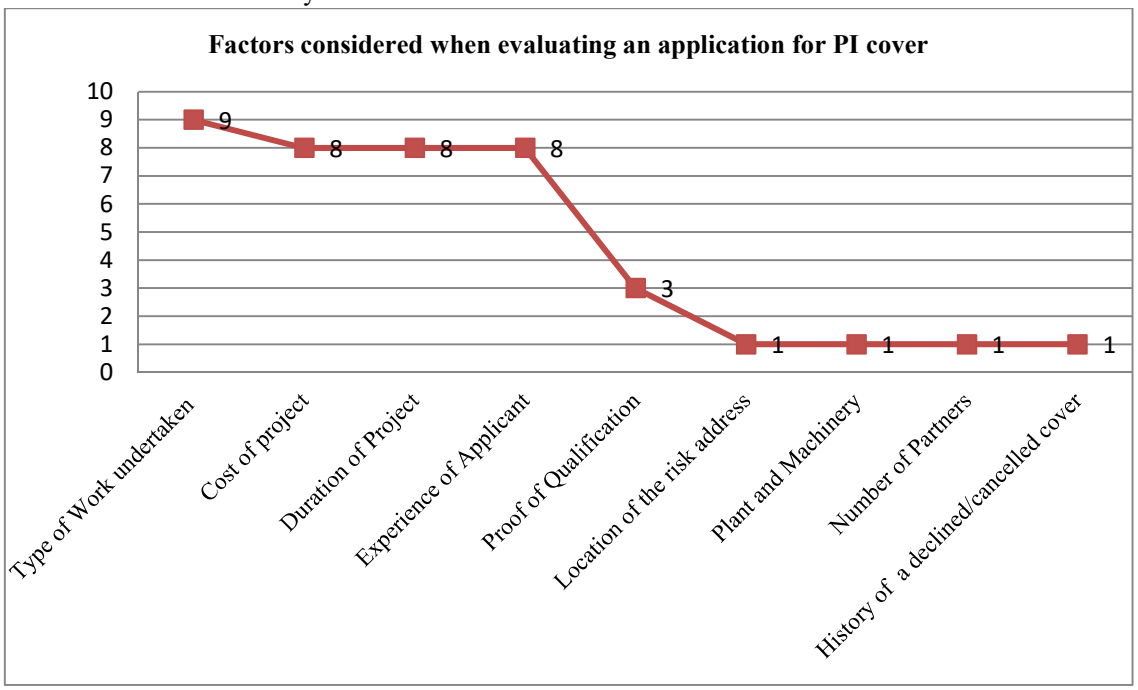

Fig. 3. Factors considered in evaluation of PII cover

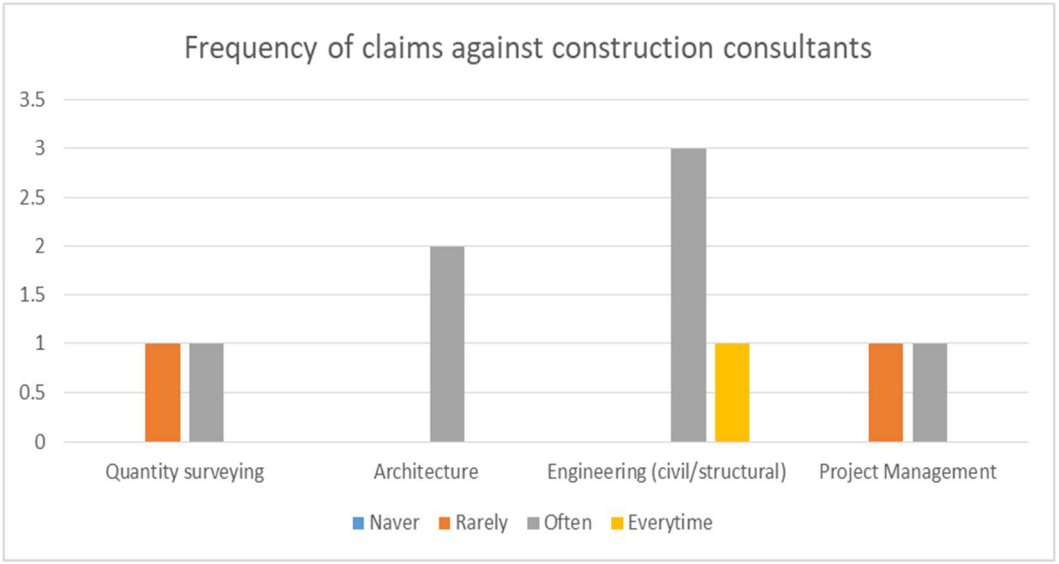

Fig.4 Frequency of claims against construction consultants

Table 4. Comments on the use of PII by construction consultants from insurance firms

Respondent	Comment
IR1	*There is need to create awareness on the importance of buying Professional Indemnity Insurance especially by in the construction industry that has been booming for the past few years in Zambia. Professional Indemnity Insurance is a liability policy that protects contractors and other professions against damages when they are sued for losses resulting from performing their profession duties.*
IR2	*Professional indemnity cover should be made compulsory to all members of the Zambian construction industry. The risk involved is too high to be paid by a single company.*
IR3	*The uptake is very low in Zambia unless where they compulsory required to take*
IR4	*Very few take up professional indemnity policy and this is not good for our country.*
IR5	*The government should put up legislation to make all professionals have a professional indemnity insurance cover so as to safeguard the general public at large.*
IR6	*The policy should be made mandatory as the sums involved are usually huge.*
IR7	*PI cover ought to be compulsory insurance to guarantee professional execution of projects and protect clients' errors and omissions due to professional negligence.*

The construction consultants in the Zambian construction industry use the PII to varying extents. The architects and project managers get more PII cover compared to quantity surveyor and engineers. The firms that use the cover do so because it is a contractual requirement yet in other industries like in the UK it is utilised because it is a mandatory requirement (RICS, 2019). Both consultants and insurance companies suggested that the cover should be mandatory. In terms of cover it was reported that firms get PI cover for their firms and individuals. In the case where the firms' cover is being relied upon. It is unclear how this cover applies to professionals on a particular project as type of work undertaken, cost of project, duration of project and experience of applicant vary. The primary requirements are contract agreement, company registration, practicing certificate and ability to pay premiums as aspects considered in obtaining cover. From the requirements, relying on the firm's cover does not put into consideration the project in question. The consultant firms should get project specific cover. The cover is usually for a 12 months period. Other international insurance firms that offer professional indemnity use the same mechanism in their professional indemnity policies (AON, 2018) however renewing of the policies in the Zambian construction industry is not guaranteed for those that obtain cover due to the non-mandatory nature of the PI utility. The insurance companies indicated that firms would normally not renew the cover for projects that are beyond 12 months. This results in not having professional cover for projects with durations beyond 12 months hence the need to have the cover for the entire project duration as mandatory.

The consultants are generally aware that they need to obtain PI to cover themselves on projects but are not very familiar with how the PI is calculated or what risks it covers. This may be the reason why its uptake is low. Additionally, there is a belief that the PI market in Zambia is in its infancy hence the hesitation by professionals to take up PII. Furthermore, other contractual mechanisms such as bonds and clauses may be viewed as adequate to cover consultants.

The outcome of low uptake of PI is not unique to Zambia as seen in the results in Section 4.5. Kanchana (2022) and Chandana and Kanchana (2021), point out that taking up PI is not mandatory in the Sri Lankan construction industry compared to other countries where it is requirenment. This has resulted in low levels of PI uptake prompting scholars to recommend sensitisation to industry stakeholders on its importance and mitigation against vulnerability among professionals. Further Hussin and Ismail (2016) observed that despite PI being implemented in Malaysia, the uptake among consulting engineers is still low with calls to the Malaysian government to enforce the uptake of PI.

The top five risks that professionals face include errors and omissions in design drawings, Omission in design contract documents, inadequate site investigation, inadequate specification and unclear drawings and technical specifications. The risks are mainly design inclined. This is problematic because design issues would affect all the other work which others would do such as the construction, the estimates, budgets and documents produced. It is possible that QS's are relying on the designers' slip to cover themselves as they do not obtain cover to the same extent as designers. However, in the event that the designs have no deficiencies and QS has no cover, this opens them up to claims and lawsuit. This therefore reinforces the practice of each consultant obtaining their own cover.

Professional indemnity is used to some extent in the ZCI varyingly among the consultants as indicated earlier Fig 3. Fig 4 shows that engineers have the most claims against them followed by architects. Engineers do not often take out a PI on building projects unless it is required contractually. The cover is calculated by applying a rate to the limit of liability and is not really tied to expected liability on a project as the insurance firms use standard policies which do not itemize the areas of cover. The argument was that this would make the cover expensive. This approach poses questions on the adequacy of the cover provided in this way as Roger et al. (2021) propose risks specific PII cover.

5. Conclusion

Various factors and requirements considered for an application for PI insurance have been identified. The most considered factors include, type of work undertaken, cost of project, duration of project and experience of applicant while the primary requirements are contract agreement, company registration, practicing certificate and ability to

pay premiums. The factors and requirements indicated that it is relatively easy to acquire the PI cover procedurally in the ZCI yet affordability is unclear. Furthermore, risk factors that the current PI policy uses in the ZCI covers have been identified with, the top five being; errors and omissions in design drawings, omissions in design contract documents, unclear drawings and technical specification, inadequate specification, and inadequate site investigation though this is based on a general cover.. It was established that PII in most cases is not enforced; this was in line with the information received on claims and uptake of the cover. Based on the results from this study and literature revealed, gaps in PI enforcement were observed. The Zambian government through the ministries of infrastructure and Finance should derive mechanisms of enforcing PI in the construction industry in order to protect clients and professionals.

To an extent, it could be stated that some professionals are more reactive than proactive when it comes to professional indemnity insurance as cover is taken out usually for the firm rather than for specific projects engaged in. Therefore, it is prudent that professionals (consultants) seek to understand the risks that the PII covers to better manage their risks and get sufficient cover. Further, consultants are encouraged to collaborate with stakeholders on projects to encourage the use of the PII. Insurance firms offering the PI should in consultation with the individual consultants strive to make tailor made policies that are consultant specific to improve the uptake of the PI. The use of a standardised cover across different consultants calls for insurance companies to better understand the dynamics of the construction industry and the various risks faced by each consultant so as to address the individual consultant needs.

The study had some limitations such as insufficient sample size for Architects and engineers hence their perceptions are not captured in this research and this resulted in the inability to carryout robust statistical measurements. Furthermore, the study would have elicited more information from a semi-structured interview but respondents opted for a questionnaire which could be answered at their convenience. Lastly, there are few recent publications on professional indemnity in the construction industry particularly in middle- and low-income countries. The limitation creates gaps in knowledge that needs to be closed. Therefore, more studies are needed in middle- and low-income countries to understand the utility of professional insurance. Additionally, a study should be done in the Zambian construction industry to capture engineers and architects specifically, to consider their utility of professional indemnity insurance**.**

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Author Contributions

Chipozya Kosta Tembo contributed to conceptualization, methodology, validation, draft preparation, manuscript editing, visualization, supervision, and project administration. Paul Hangoka contributed to conceptualization, methodology, analysis, investigation, data collection, and Project administration. Franco Muleya contributed in manuscript editing, and visualization. All authors have read and agreed with the manuscript before its submission and publication.

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Appendix

Below are links to some of the questions used in the study. The first link is for sample questions for insurance companies while the last link is for questions for consultants.

https://docs.google.com/forms/d/e/1FAIpQLSf3faz9YBt-uCYvV151PhE17-sxVTM6NsPl3hFV6eQYJeosWw/viewform?vc=0&c=0&w=1&flr=0&usp=mail_form_link

https://docs.google.com/forms/d/e/1FAIpQLSf_pllLs8DF0_F7W3ihV91nUvEaOSUa9TT6IA8hUfB3EmUag/viewform?vc=0&c=0&w=1&flr=0&usp=mail_form_link

Chipozya Kosta Tembo is a senior lecturer in the department of Construction Economics and Management at the Copperbelt University in Kitwe, Zambia. She obtained a PhD from Witwatersrand University in South Africa. She holds a Master's Degree in Construction Law from the Wolverhampton University in the UK and a Bachelor's degree in Building Science (Construction Management and Quantity Surveying) from the Copperbelt University in Zambia. She is a registered engineer with the Engineering Institute of Zambia, Member of the Chartered Institute of Arbitrators and a member of the Surveyors Institute of Zambia. Some of her areas of research interest include contract management. Risk management, sustainable construction materials and practices, project procurement and development of small and medium enterprises in construction.

Paulson Hagonka Jr. is currently a consultant at MECON Engineering Limited and a board member at GLADCON Limited. He holds a Bachelor of Science degree in Quantity Surveying from The Copperbelt University in Kitwe, Zambia. He was honoured as the best graduate class of 2021. Some of his research interests are contract management, and procurement.

Franco Muleya an Associate Professor in the department of Construction Economics and Management at the Copperbelt University in Kitwe, Zambia. He obtained his PhD from Anglia Ruskin University in the United Kingdom where he also served as Graduate Teaching Assistant and Tutor in the Faculty of Science and Technology. He holds a Master's Degree in Management of Projects from the University of Manchester in the UK and a Bachelor's degree in Building Science (Construction Management and Quantity Surveying) from the Copperbelt University in Zambia. He is a registered quantity surveyor with the Quantity Surveyors Registration Board in Zambia and a Fellow of the Surveyors Institute of Zambia. He has also worked as a quantity surveyor, site engineer and quality control engineer. He is a past member of the Chartered Institute of Building (CIOB). Some of his areas of research interest include quality management in construction, sustainable construction materials and practices, project finance and modelling construction plant