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ASSESSMENT OF PROFESSIONAL PRICING STRATEGIES IN THE BUILT ENVIRONMENT: CASE STUDY OF SOUTH AFRICA

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Abstract

Inequality in professional fees across built environment professions poses a significant challenge within the construction industry. This study employs document analysis, focusing on projects as case studies, to investigate fee structures across various professions, including quantity surveyors, project managers, architects, structural engineers, civil engineers, electrical engineers, mechanical engineers, and occupational health and safety officers. The analysis reveals considerable variability in fee percentages across projects, suggesting that fee determination is influenced by factors such as project complexity, size, risk, location, and market conditions. Despite this variability, certain patterns emerge, such as higher fee percentages for projects with increased complexity or value. Additionally, competitive pricing strategies are observed, with professionals adjusting fee percentages to remain competitive within the market. These findings underscore the importance of tailored fee structures, informed by project-specific requirements and industry standards, to address the issue of inequality in professional fees and ensure fair compensation for built environment professionals.

Keywords: Built Environment, Discounting, Influence of Fees, Professional Service.

1. INTRODUCTION

The built environment industry includes a wide range of professional services that shape society's physical infrastructure. Historically, pricing tactics in this domain have been led by recommended guidelines fees, which were produced by professional bodies to ensure equitable remuneration and industry norms (Smyth, 2005). However, in recent years, professional practitioners such as quantity surveyors have experienced growing customer demand to offer reduced prices, which is typically affected by competitive market conditions (Prinsloo & Andersen, 2015). Clients may sometimes establish fee limits to control project expenses, further complicating the price environment. As practitioners navigate these uncharted waters, the fundamental question emerges: how can built environment professionals strike a delicate balance between adhering to erstwhile guidelines, responding to the competitive landscape through fee reductions, and accommodating client expectations regarding service fees? This study embarks on a comprehensive investigation, employing a quantitative research methodology that integrates a thorough literature review with a discerning case study analysis.

The construction industry is critical to defining the physical environment and propelling economic progress (Hoxley, 2007). Architects, quantity surveyors, engineers, project managers, and construction managers are among the experts who work together to execute

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effective projects in this dynamic sector (Babatunde et al., 2020). However, the lack of a standardised Tariff for Professional Fees (ToPF) has resulted in inconsistent charge structures and practices, threatening the industry's sustainability and efficiency. The practice of discounting professional fees in the built environment industry has garnered attention due to its potential implications for project outcomes. While the literature on this specific topic remains relatively limited, studies related to cost-cutting measures, project budgets, and quality trade-offs offer valuable insights into the broader context of discounted fee strategies. Factors influencing how professionals like quantity surveyors are averse to utilising new systems and innovations stem from the seeming prioritisation of construction digital tools over livelihood (Gilchrist et. al., 2021). This was reported as the factor affecting and contributing to devaluing of the profession services through excessive competition on fees. It was further supported by industry professionals that they currently do more for less and if they do not adopt to the use of digital tools which will assist reduce time spent on projects, they will remain stagnant with having to discount their services without good returns. Smith (2014) delved into the consequences of cost-cutting measures within the construction industry. The study emphasised that while reducing costs may attract clients in the short term, it can lead to compromised project quality and increased risks. The findings highlight the need to adopt digital technology which will help with improving the quantity measurement to ascertain the cost of the project.

The current literature provides a foundation for understanding the potential effects of discounted professional fees on finished projects within the built environment (Okonkwo and Wium, 2018; Govender et al., 2022). However, there remains a significant gap in research specifically exploring this relationship. This quantitative case study aims to contribute empirical evidence to this discourse by investigating the impact of discounted fees on a range of project outcomes. By doing so, this research seeks to inform practitioners and policymakers about the implications of pricing strategies in the built environment industry. Also, it addresses the important need for a well-defined ToPF in the construction sector, with an emphasis on quantity surveyors.

The approach used by construction companies to determine bid prices is an element of their strategy used to win jobs in competitive tenders. Jaśkowski et al. (2019) focus on the price definition component of the bidding strategy. Building Information Modelling (BIM) has triggered the way the construction industry operates in particular 5D BIM as discussed in the study by Smith (2014). Moreover, Musonda (2019) focuses primarily on the role of the construction project manager in South Africa whereby BIM has been perceived as merely being software. In the construction industry, 3D modelling helps to capture all life cycles of buildings from engineering surveys to design, operation, and demolition work. The Sandagomika et al. (2021) study's purpose is to investigate the human capacities to be built in order to implement the lean concepts and propose organisational-level strategies to build those capacities in large-scale contractors of Sri Lanka to foster lean construction. The final model presents the unskilled, craft, administrative, and professional & managerial level human capacities to be built by large-scale contractors and strategies to be used for building those capacities to foster lean in the construction industry. Olatunji et al. (2021) study building information modelling (BIM) penetration in quantity surveying (QS) practice. Male (1990) offers a theoretical and

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exploratory examination of professional authority and power and how it may affect the field of quantity surveying in the future. Male (1990) contends that one of the fundamental pillars of professional power and authority is the professional knowledge base of quantity surveying and its connection to the abilities employed by quantity surveyors in rendering services to clients. Previous research investigations have yielded general and specific assumptions regarding the ethical attitudes of quantity surveyors, as well as their professional training and personal background (Christabel et al., 2003). Professional quantity surveyors with varying ages, membership levels, and work experiences are found to have notable differences in their ethical attitudes.

Smyth (2005) aims to determine the level of cooperation that design teams exhibit in real-world scenarios. Since their professional position naturally strains relationships, quantity surveyors and cost consultants must acquire a wider range of competencies beyond what is immediately required of them. The inability of quantity surveyors to satisfy the need for "value for money" (VfM) in the construction of sustainable buildings is hampered by this issue. Cunningham (2014) examines the function and competencies of quantity surveyors in overseeing the financial administration of construction projects including buildings. The different qualities and abilities needed by chartered quantity surveyors to carry out their professional responsibilities are also described by Cunningham (2014). It can be challenging to define competence in any field of work, particularly in professional positions that are complicated and involve a variety of specialists in the built environment sector. This study reviews the present landscape and analyses the possible benefits to highlight the significance of a standardised ToPF in enhancing transparency, promoting fair remuneration, and guaranteeing the execution of high-quality construction projects.

2. METHODOLOGY

The researchers adopted a quantitative approach for the study. This quantitative case study aims to bridge this gap by providing empirical evidence on the outcomes of projects that employed discounted professional fees. A similar case study design was adopted by (Mao et al., 2016). The methodology employed in the study is consistent with the demand for additional investigation into the complex relationship between pricing strategies and project success, (Ramabodu, 2023). This study aims to identify the precise impacts of discounted fees on factors including project completion time, budget adherence, quality, and customer satisfaction by performing a thorough examination of completed projects across multiple built environment industry sectors. The goal of this research is to discover trends and anomalies that can guide future initiatives for professionals and stakeholders by examining the variances in fee patterns from 2014 to 2017. The study explores a comparative examination of fee structures in the built environment industry for various professions.

The study primarily focuses on past project cost data from Gauteng region case studies in South Africa. The dataset, which was gathered from numerous case studies, includes project values, fees, and fee percentages from 2014 to 2017. The project managers in charge of the designated projects provided the project data; however, to respect ethical and privacy concerns, project

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names were not disclosed (Vanclay et al., 2013). Document analysis was used, looking through contract documents to find the required project cost information. A detailed discussion and descriptive analysis were conducted on the gathered data. Projects worth up to R43 703 349,21 in professional fees, in line with government-published fee schedules, were the criterion for selecting projects for case studies. Additionally, all projects had to be situated in the Gauteng region.

3. RESULTS, ANALYSIS AND DISCUSSION

3.1 Fees (%) For Quantity Surveyors Professionals Per Project

Figure 1 presented a bar chart titled "Fees (%) For Professional Per Project". It displays the cost of work as a percentage for a series of projects labeled P1 through P32. Each project is represented by a vertical bar, which indicates the fee percentage charged by a professional for that particular project. The projects are arranged along the horizontal axis, while the vertical axis represents the cost of work as a percentage. The first bar, corresponding to project P1, shows a fee percentage of approximately 8.7%. The tallest bar appears to be for project P25, with a fee percentage close to 28.54%. The shortest bar is for project P1, as previously mentioned. The percentages vary across the projects, with some projects having very similar fee percentages, for example, P18, P19, and P20 all hover around the 21.7% to 21.9% range.

3.2 Fee Structure Analysis:

The fees as a percentage of the cost of work vary considerably across the 32 projects, indicating a variable pricing model rather than a flat rate. The range is from as low as approximately 8.7% (P1) to as high as approximately 28.54% (P25), suggesting that the quantity surveyor's fees are likely influenced by factors specific to each project. The majority of the projects have fees between roughly 12% and 22%, which might be considered the standard range for the professional's services.

3.3 Identifying Trends:

There is no clear ascending or descending trend across the projects in sequence, which implies that the fee percentage does not increase or decrease with the progression of projects from P1 to P32. However, there is a notable cluster of higher fees in the middle of the graph, particularly from P21 to P26, which may indicate that these projects had some complexities or additional services that warranted higher fees.

3.4 Comparison Across Different Projects:

When comparing the cost of work across different projects, it is evident that there is no uniform fee percentage. This could be due to a variety of reasons such as project size, complexity, risk, location, client type, or market conditions at the time the fee was quoted. Projects P1, P6, P10, and P29-P32 have lower fee percentages, possibly indicating smaller scopes of work, and lower risk, or perhaps these were projects where the quantity surveyor aimed to be more competitive in pricing. On the other end, Projects P24, P25, and P26 have the highest fees, which could suggest larger or more complex projects that require more in-depth work, carry more risk, or

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reflect a higher market rate for the services provided at the time. The analysis presented in the excerpt offers valuable insights into the fee structure of quantity surveyors across a range of projects.

Variable Pricing Model: The observed variability in fee percentages suggests that quantity surveyors employ a variable pricing model rather than a flat rate. This indicates that fees are tailored to the specific requirements, complexities, and characteristics of each project. This indicates an unfair distribution of pricing across projects (Cruywagen and Snyman, 2006).

Factors Influencing Fees: Various factors such as project size, complexity, risk, location, client type, and market conditions influence fee determination. For instance, larger or more complex projects may command higher fees due to the increased level of expertise and effort required. Clients and quantity surveyors need to carefully consider these factors when negotiating fees, ensuring that the pricing accurately reflects the scope and nature of the project. It also highlights the importance of transparency in fee discussions to avoid misunderstandings or disputes later on (Coetzee et al., 2015).

Projects with lower fee percentages reflect quantity surveyors' efforts to be competitive in pricing, possibly due to factors such as market competition or client preferences. Clients may benefit from a range of pricing options and competitive bids, encouraging quantity surveyors to provide high-quality services at competitive rates. However, clients need to ensure that lower fees do not compromise the quality or thoroughness of the services provided (Laryea et al., 2020).

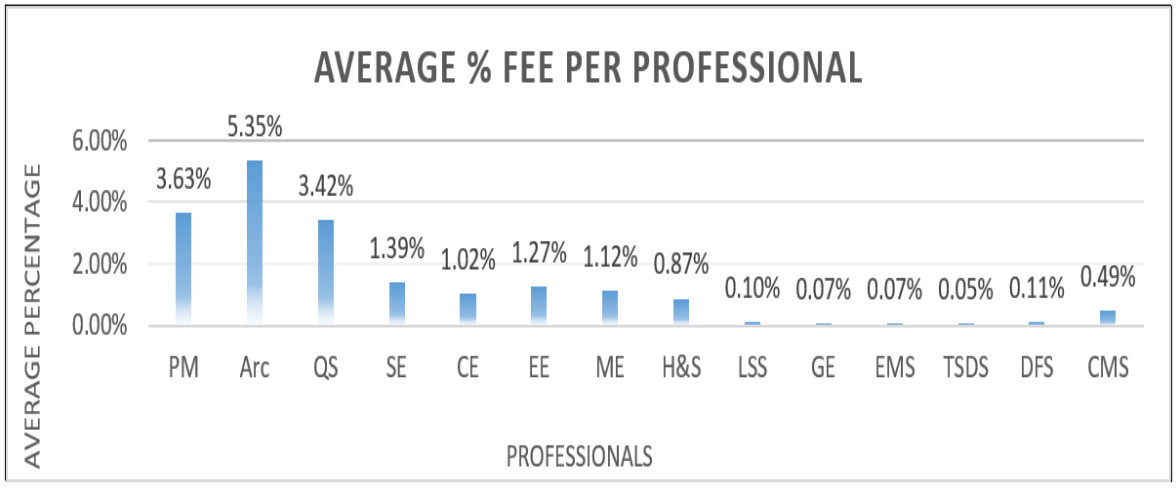

Figure 1: Fees (%) For Quantity Surveyors Professionals per Project

3.5 Project Value and Cost of Work per Project

Figure 2 compares the project value (PV) and the cost of work (CW) across various projects, labeled P1 through P31. Two sets of bars represent each project: one for the project value (in blue) and one for the cost of work (in orange). Project value (PV) generally appears to be significantly higher than the cost of work (CW) for all projects. The majority of projects have

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a project value that ranges under 50 million Rands, while the cost of work is much lower, suggesting a considerable difference between overall project value and the costs directly associated with the quantity surveyor's work. The last project, P31, has an exceptionally high project value, indicated by a blue bar reaching up to 250 million Rands, which is substantially higher than any other project displayed. However, its associated cost of work, while higher than other projects, is not proportional to its project value, suggesting a lower percentage fee than the total value. There is a general trend where the cost of work (CW) is a small fraction of the project value (PV), which is consistent across all projects. The fee for their services (cost of work) is a fraction of the total project value, which is a typical structure in quantity surveying where fees are a percentage of the total project cost. The high project values, especially the spike in P31, indicate substantial investments in projects, which reflects economic growth or significant development in certain sectors or regions within South Africa.

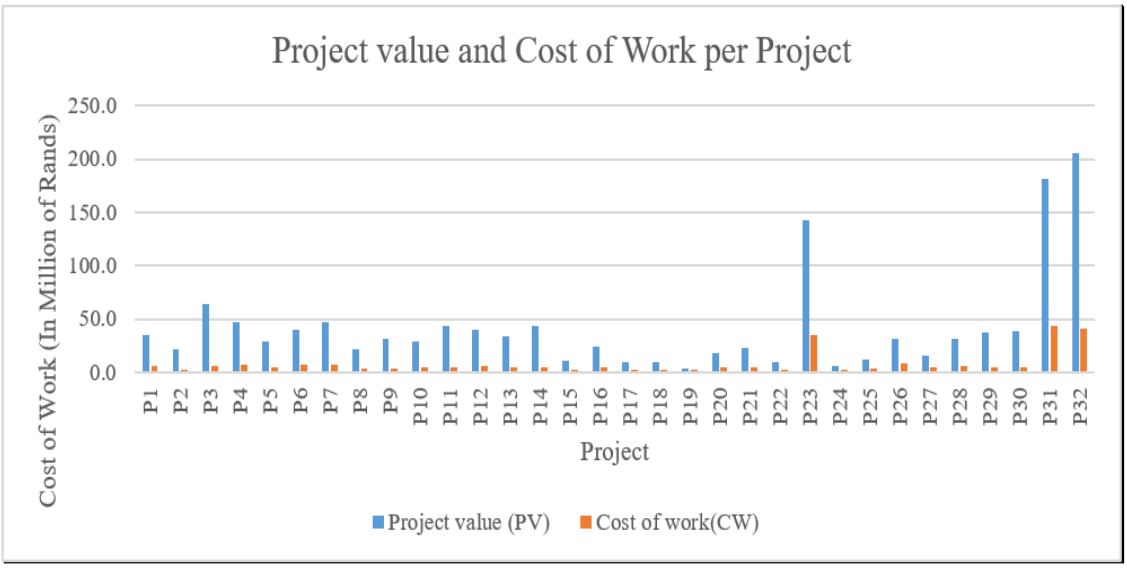

Figure 2: Project Value and Cost of Work per Project

The comparison reveals that project value generally exceeds the cost of work for all projects. This suggests that the total value generated by these projects is significantly higher than the costs directly associated with the quantity surveyor's work. While the majority of projects have a project value under 50 million Rands, the cost of work is much lower. This indicates a notable difference between the overall project value and the costs specifically attributed to the quantity surveyor's services.

Project P31 stands out with an exceptionally high project value, significantly surpassing the values of other projects. However, its associated cost of work is not proportional to its project value, suggesting a lower percentage fee relative to the total value. There's a consistent trend across all projects where the cost of work is a small fraction of the project value. This is in line with the typical structure in quantity surveying where fees are calculated as a percentage of the total project cost. The high project values, particularly the spike in P31, indicate substantial

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investments in projects. This reflects economic growth or significant development in certain sectors or regions within South Africa (ECSA, 2021a).

3.6 Fees (%) For Project Managers and Architect Professionals Per Project

Figure 3 is a dual bar chart depicting the percentage fees for project managers (PM) and architect professionals (AS) per project, with the projects labeled P1 through P32. Each project has two bars side by side, with blue representing project managers and orange representing architect professionals. The vertical axis represents the cost of work as a percentage, which allows for the comparison of fees relative to the project cost. The fees for project managers (PM) vary across the projects. The lowest percentage observed is around 1.1% (P9) and the highest is approximately 9.6% (P25). There is a noticeable peak at P25, indicating a significantly higher fee percentage for project management in that project compared to others. The fees for architect professionals (AS) also fluctuate across the projects. The lowest fee percentage for architects is around 2.4% (P1), and the highest is around 9.7% (P25). Similar to project managers, a peak in the fee percentage is observed at P25 for architects, suggesting that this project required more involvement or had complexities warranting higher fees. Both project managers and architects charge their highest fees for the same project (P25), which is due to the project's scale and complexity requiring more extensive management and architectural services. Generally, project manager fees tend to be lower than architect fees, as indicated by the blue bars often being shorter than the orange bars. The variation in fees does not appear to follow a clear sequential pattern but seems project-specific. This could be due to various factors that affect the fee structure, such as project size, complexity, risk, and individual negotiation with the client.

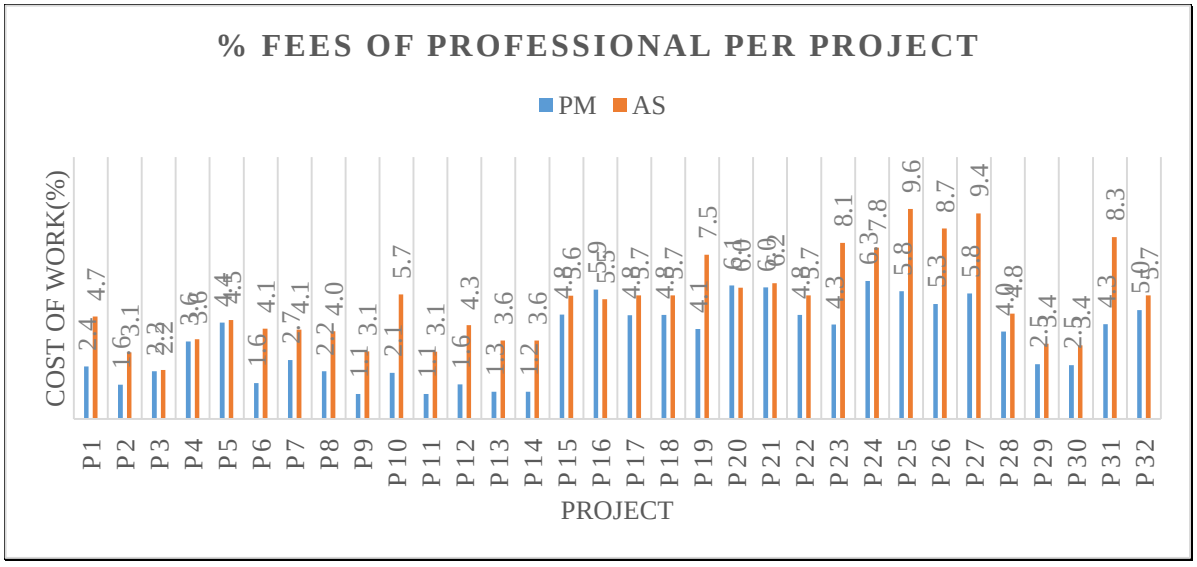

Figure 3: Fees (%) For Project Managers and Architect Professionals per Project

When comparing the two professions across the projects, it is evident that there is no standard fee percentage. Each project has a unique fee structure, possibly tailored to the specifics of the

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work required by each professional role. Certain projects (like P11, P15, P19, and P27) have closer fee percentages between the two professions, suggesting that the roles of project managers and architects were perhaps more equally weighted in terms of workload and responsibility (Prinsloo and Andersen, 2015); (SACQSP, 2015).

3.7 Fees (%) Comparison For Quantity Surveyors and Structural Engineers Per Project

Figure 4 compares the fee percentages of Quantity Surveyors (QS) and Structural Engineers (SE) across a series of projects, from P1 to P32. Each project has two bars representing the fee percentages of the two professions: blue bars for Quantity Surveyors and orange bars for Structural Engineers. The fee percentages for Quantity Surveyors generally range between approximately 2% and 5.3%, with a few exceptions where the percentage is slightly higher or lower. Structural Engineers' fees are consistently lower than those of Quantity Surveyors across most projects, typically ranging between 1% and 3%, with some variation above or below these figures in certain projects. There is a noticeable trend where both professions have their highest fees in the latter projects, specifically P26, P28, and P30. This could indicate more complex or high-value projects towards the end of the series. The most significant difference in fee percentages between the two professions appears in projects P26, P28, and P30, where Quantity Surveyors' fees are over 5%, whereas Structural Engineers' fees are around or below 2.5%. The lowest fees for both professions are seen in the earliest projects (P1, P2, P3, etc.), suggesting that these might have been smaller in scope or complexity.

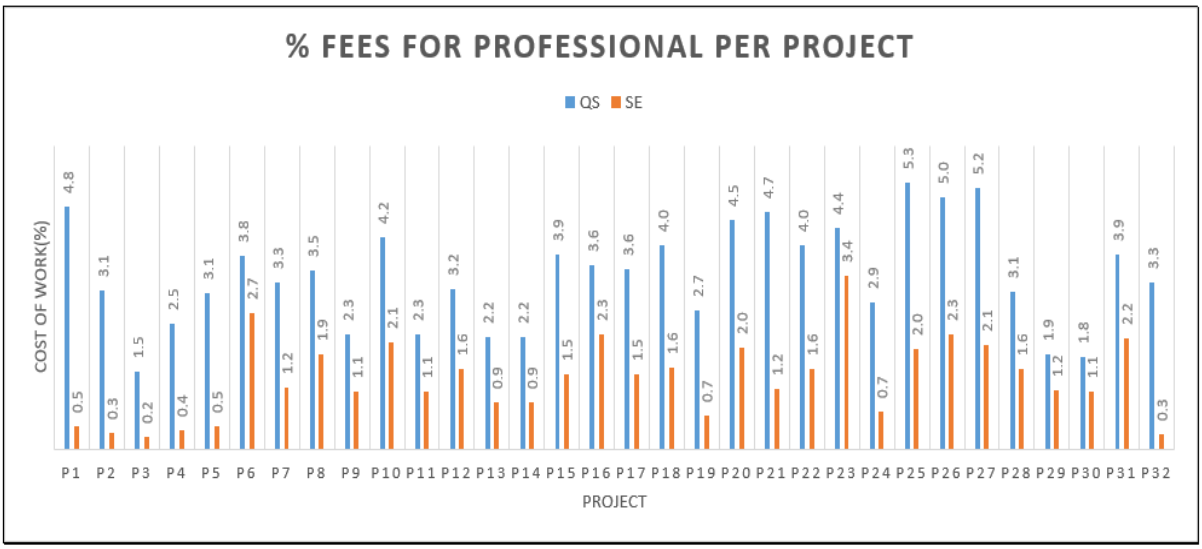

Figure 4: Fees (%) Comparison for Quantity Surveyors and Structural Engineers per Project

Both Quantity Surveyors and Structural Engineers show variability in their fees across different projects, which is indicative of a tailored approach to pricing that factors in the unique aspects of each project (Okonkwo and Wium, 2018). Quantity Surveyors tend to charge higher percentages than Structural Engineers, which could be due to the nature of the services

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provided, the typical market rates for these services, or the perceived value of the work done by Quantity Surveyors. External factors such as economic conditions, market demand for these professionals, and the competitive landscape could also influence the fee structure (Okonkwo and Wium, 2018); (Prinsloo and Andersen, 2015).

3.8 Fees (%) Comparison For Civil Engineers and Electrical Engineers Per Project

The graph in Figure 5 illustrates the fee percentages charged by Civil Engineers (CE) and Electrical Engineers (EE) for various projects, labeled P1 through P32. The fees are expressed as a percentage of the cost of work, with blue bars representing Civil Engineers and orange bars representing Electrical Engineers. The fees for Civil Engineers show some variability across the projects, ranging from just under 1% to around 3.5%. The graph does not show a distinct pattern or trend over the sequence of projects, indicating that the fees are project-specific. Electrical Engineers (EE): The fee percentages for Electrical Engineers also vary, generally staying below 2.5% except for a few projects where the fees peak at or just above 3.5%. In many projects, the fees for Civil Engineers are higher than those for Electrical Engineers. However, there are several projects where Electrical Engineers' fees surpass those of Civil Engineers, most notably in projects P21, P22, and P23, where the orange bars are significantly higher. There doesn't appear to be a clear ascending or descending trend across the project numbers for either profession. This suggests that the fee percentages are not necessarily related to the order of the projects but rather to the specifics of each project. The greatest disparities in fees between the two professions occur in projects P21-P23, where Electrical Engineers charge substantially more in percentage terms than Civil Engineers. In contrast, in projects like P13 and P30, Civil Engineers' fees are noticeably higher.

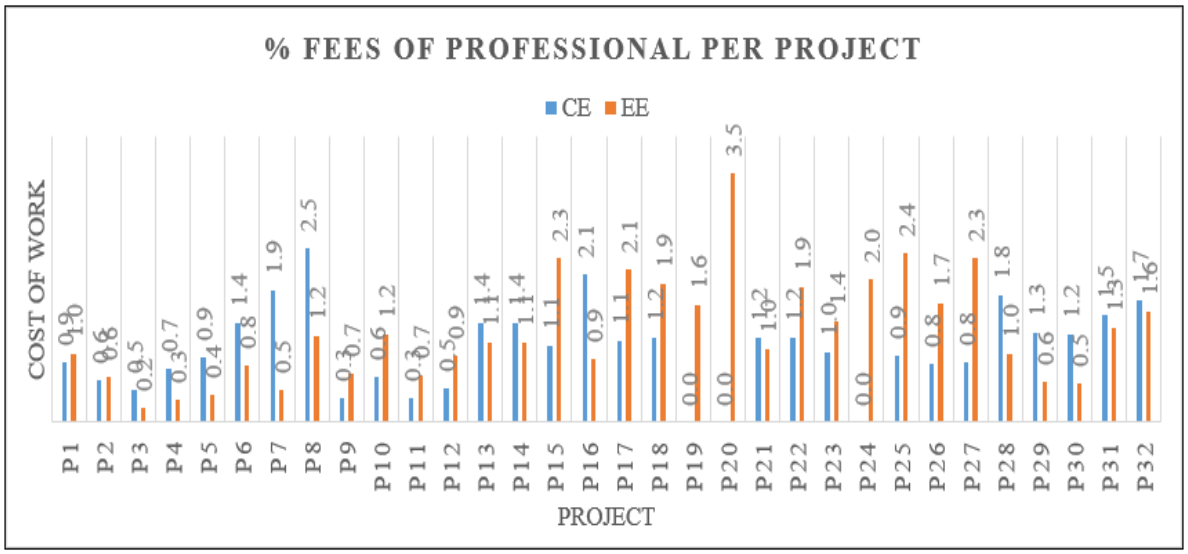

Figure 5: Fees (%) Comparison for Civil Engineers and Electrical Engineers per Project

The differences in fees likely reflect the unique requirements and complexities of each project. For example, projects with extensive electrical work might command higher fees for Electrical

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Engineers due to the specialised nature of the work. Projects, where Civil Engineers' fees are higher, might involve more civil work or complicated structural challenges requiring the specific expertise of a Civil Engineer (Saka et al, 2019).

3.9 Fees (%) Comparison For Mechanical Engineers and Occupational Health and Safety Officers Per Project

Figure 6 compares the fee percentages of Mechanical Engineers (ME) and Occupational Health and Safety Officers (OH) across various projects, labelled P1 through P32. The blue bars represent the fee percentages for Mechanical Engineers, and the orange bars represent the fee percentages for Occupational Health and Safety Officers. The fee percentages for Mechanical Engineers fluctuate more significantly across the projects than those for Occupational Health and Safety Officers. Mechanical Engineers' fees seem to reach the highest percentage at project P24, with a fee of around 5.5%. Occupational Health and Safety Officers' fees tend to be more consistent, staying generally below 1% across all projects. There is a notable peak in fees for Mechanical Engineers at project P24, suggesting a project that required a more substantial contribution or specialty services from the Mechanical Engineers. The lowest fee percentages observed for both professions are at the beginning of the project series (P1-P3).

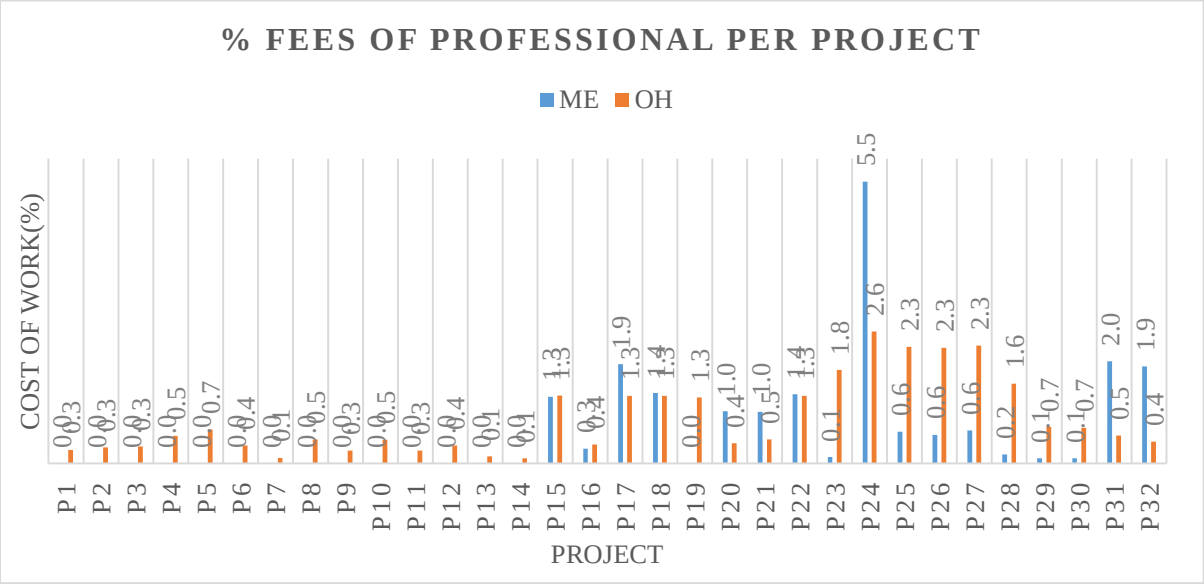

Figure 6: Fees (%) Comparison for Mechanical Engineers and Occupational Health and Safety Officers per Project

Occupational Health and Safety Officers show a relatively consistent fee percentage, which could suggest a standard rate or approach to pricing their services across different projects. In contrast, Mechanical Engineers exhibit more variability, indicating a more dynamic pricing structure that may reflect the complexity or specific demands of each project. The comparison indicates that Mechanical Engineers command a higher fee percentage than Occupational Health and Safety Officers, which may be due to the technical complexity of their work or higher market rates for engineering services. The pronounced peak for Mechanical Engineers

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at P24, and to a lesser extent at P17 and P20, could be attributed to projects that required intensive engineering work, perhaps due to project scale, complexity, or the need for specialised engineering solutions. The relatively low fees for Occupational Health and Safety Officers compared to Mechanical Engineers could reflect the nature of their work, which may be less variable and potentially require a less intensive involvement in the project's design and execution phases (Olatunji et al., 2021).

4. CONCLUSION

In conclusion, the analysis of fee percentages for quantity surveyors, project managers, architects, structural engineers, civil engineers, electrical engineers, mechanical engineers, and occupational health and safety officers across various projects provides valuable insights into the fee structures within the construction industry. The analysis of all professions revealed significant variation in the percentage of fees charged for various projects. This variety implies that a wide range of factors, such as project size, complexity, risk, location, and market conditions, have an impact on the decision of fees. The lack of distinct upward or downward trends between the projects suggests that the fee percentages are more closely linked to the particular features and specifications of each project than they are to the projects' relative order. This emphasizes how crucial it is to modify price schedules to meet the specific requirements of each project. Across all professions analysed, projects with higher degrees of value or complexity typically had larger charge percentages. This suggests that professionals may charge higher fees for projects that require more extensive expertise, effort, or specialty services.

The analysis also highlights situations in which professionals might use aggressive pricing tactics, such as lowering their fee percentages, to win business or maintain their position as market leaders. Though fee percentages vary, several patterns come through, like the usual cost ranges for various professions and the percentage of project value that goes toward fees. These patterns reflect the norms and procedures that are common in the construction sector. Analysing charge percentages across a variety of professions offer insightful information about the intricate dynamics of determining fees in the construction sector. Gaining insight into these dynamics can help stakeholders negotiate fees, plan projects, and allocate resources more wisely, all of which will ultimately lead to the successful delivery of construction projects.

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