



28 EISIC – 2025

Development of a Bid/No Bid Decision Tool for Strategic Decision Making: An SME Case Study

Chioma Adeomi,
University of the West of Scotland

Chioma.adeomi@uws.ac.uk;

Michele Cano,
University of the West of Scotland

Michele.cano@uws.ac.uk;

James B. Johnston,
University of the West of Scotland

jamesb.johnston@uws.ac.uk;

Ryan M. Gibson,
University of the West of Scotland

Ryan.gibson@uws.ac.uk;

Mark McGlinchey, mmcglinchey@forte-engineering.co.uk;

Derek Riddell, driddell@forte-engineering.co.uk

ABSTRACT:

Purpose: This paper explores the various factors that could influence the decision to bid or not bid for contracts for an SME in the UK rail construction industry and presents the development of a structured Bid/No-Bid Decision Tool.

Methodology: A weighted criteria method was adopted to develop a Bid/No-Bid Decision Tool tailored to the case study SME in the UK rail construction industry and evaluated key factors such as project location, scope, client relationship, complexity, resource availability, financial implications, and deal-breaking conditions

Findings: The resulting tool provides a structured approach to assess bidding opportunities based on predefined, weighted criteria. This enables better prioritisation of limited resources and supports more strategic decision-making, as opposed to relying solely on intuition or experience.

Research limitations/implications: The findings are based on the context of a single SME within the UK rail construction industry, which may limit the generalisability of the tool across different sectors or business environments. Further testing and validation in other settings could enhance its applicability.

Originality/Value: This paper addresses the gap between traditional gut-feeling-based bidding decisions and the need for structured decision-making processes. The tool provides valuable

assistance for businesses in choosing what projects to focus their bidding efforts on to achieve the best outcomes, particularly for SMEs with limited resources.

Keywords: bid/no-bid decisions, bidding decisions, rail, construction, SME, United Kingdom

Paper type: Case Study

1. INTRODUCTION:

The global construction industry is the largest sector in the world contributing to about 13% of global GDP as of 2024 (Boury 2024). In the United Kingdom (UK), it is considered to be a “truly nationwide industry” due to its impact in both individual homes and public/private infrastructure (UK Government 2019). As at Quarter 4 2024, the gross value added of the construction industry in the UK was £38.37billion (Office for National Statistics (UK) 2025) and contributes approximately 6 - 7% to total economic output (Office for National Statistics (ONS) 2024) making the industry an important one for the economy. Within the construction industry, the rail sector is of strategic importance to the economy and supports the UK net zero goals (Rail Uk 2024) by providing sustainable transportation options. Its importance is highlighted by the significant projects in the integrated rail plan with investments of up to £96 billion in rail construction and upgrades (GOV.UK 2021).

1.1 The role of SMEs in the economy:

Small and medium enterprises (SMEs) are the backbone of the business population in the UK and accounts for about 99.8% of the business population (GOV.UK 2025). SMEs in the UK now have access to nearly £400 billion yearly spend as a result of the Procurement Act 2023 (Cabinet Office, Gould MP 2025). As at the start of 2024, 16% of SMEs were found to be operating in construction (FSB 2025). In the rail sector, SMEs play a crucial role and contribute strategically to the sector with Network Rail having about 70% of its direct suppliers as SMEs (Clark 2024). This aligns with its commitment that supporting SMEs is crucial for growth in the sector. However, one dilemma faced by businesses especially SMEs is the decision to bid or not bid on a project particularly due to the limited resources.

1.2 Bid or No-bid Decision:

Generally, businesses in the rail construction sector grow by competitively bidding for projects and successfully delivering on these projects. The success of the business is highly dependent on the choice of projects carried out. Hence, errors in the decision-making process could ultimately result in a loss for the business (Gamage & Perera 2021). The decision to participate in a bidding process (also known as tendering) has a significant impact on the health and prospects of the business. It could be said that one of the major decisions a business must make is whether to bid or not bid on a project (Polat & Bingol 2017). Choosing not to bid often means forfeiting the potential profits that could come from that project; however, the business also needs to carefully assess its capability, available resources and expertise while making the choice (Leśniak & Plebankiewicz 2015).

Tendering is defined as the ‘the process of preparing and submitting for acceptance a conforming offer to carry out work for a price, thus converting the estimate to a bid (Patil & Waghmare et al.

2016). It is a crucial phase that involves significant information and document exchange. It is a costly and time-consuming process hence it should be based on a careful analysis of the opportunity, its potential benefits, and associated costs (Lewis 2015).

1.3 Relevance of the study:

Historically, businesses base the decision on whether to bid or not bid on a project on gut feelings or instinct which is influenced by their knowledge and understanding of the business and or industry. However, this is sometimes fraught with problems. As there are limited resources and even limited time, the amount of effort required to put in a bid implies that it is important that the effort yields the result of successfully winning the bid.

Previous research has shown that there are various factors such as the need for work, type of work, client's reputation, expected profit etc that could influence the decision to bid or not bid on a project. Also, there are various tools which have been identified to assist decision makers on the right projects to bid on (Duygu & Ozbek 2020). Previous tools developed are quite academic and may be more suited to larger companies. No research has been found that focuses on an industry tool that can be used by SMEs in the UK to guide their decision making.

This study therefore focused on the development of a tool that can be used by an SME in the rail construction sector to guide the decision to bid or not bid on a project.

2. LITERATURE REVIEW:

2.1 The Bidding Process:

Bidding is a competitive process in which companies present their project proposals and cost estimates to secure a contract. The process generally begins with the public disclosure of project details, followed by an invitation for interested parties to submit their bids. Participants then submit detailed bids that provide details on their experience, capabilities, and pricing. These proposals are then evaluated, and the most suitable contractor is chosen based on factors like quality, cost, and ability to deliver (Van Phan, Nguyen et al. 2024).

2.2 Factors influencing bid or no bid decisions:

Previous research has established that one of the key decisions that firms in the construction sector have to take is the decision to bid or not bid (Binshakir *et al.* 2023; Lan et al. 2012) and have emphasised that the success of a business is highly influenced by the choice of projects undertaken (Binshakir et al. 2023). However, bid decisions are usually heuristic in nature and often dependent on the experience, judgement and perception of the decision maker (Ahmad & Minkarah 1988).

One of the earlier studies on factors influencing the bidding decision was by Ahmad & Minkarah (1988) in which they investigated the factors that influenced general contractors in the United States (US) to bid for a project. They reviewed 31 factors and identified the top 5 factors as: type of job; need for work; owner reputation; historic profit; and degree of hazard. In addition, they found that certain factors (such as type of job, competitors and experience, make contractors optimistic about bidding while others (such as need for work, and location) made them feel desperate about bidding hence influencing their decision to bid.

Further research has occurred since then building on the earlier work across various countries and continents. In the UK, Shash (1993) identified top 3 factors influencing the bid no bid decision but found that the greatest influence was the need for work and the location of the project. However, Lowe & Parvar (2004) found that only 8 of the 21 reviewed factors showed a significant relationship with the decision to bid. These factors are strategic and marketing (non-monetary) contribution of the project, competitive analysis of the tender environment, competency project size, competitive advantage – lowest cost, resources to tender for the project, feasibility of alternative design to reduce cost, external resources (implementation) and tendering procedures.

In China, a study of factors influencing the bid or no-bid decisions for Chinese international contractors identified 41 factors with 9 of the factors being significant noting that the significance of the factors differed with the size of the company (Li, Chen et al. 2020). On the other hand, a study on the bid/no-bid decision factors in an economic downturn revealed that expected profitability was critical to deciding to bid for a project and that Chinese contractors prioritise payment security and profit margins perhaps due to the reduced investment, fewer projects, and intense competition in an economic downturn, forcing contractors to prioritise survival. The factors related to expected profitability in this study were identified as Terms of payment, Client's reputation for timely payment, client's original price estimate, profit history for similar projects and contract type (Wang et al. 2020).

In Saudi Arabia, Bageis & Fortune (2009) evaluated 87 factors and found that the top factors were the client's financial capacity, prompt payment habit of the client, project payment system, clarity of work/specifications and project cash flow. They further found that the weight of importance assigned to the factors was influenced significantly by the Contractor size, classification status, and the client type. More recent research by Alsaedi et al. (2019), supported this and identified the top factors to be size of the job, type of the job, company's strength in the industry, designer/design quality, rate of return and project cash flow. Furthermore, a study by Aldossari (2024) classified construction projects into two types- building projects and infrastructure projects. The study found that Infrastructure projects prioritised "project risks" and "project type," while building projects emphasised "availability of qualified labour.". In addition, more experienced contractors valued "contractor's financial capacity," while less experienced contractors focused on "project risks, but they found that the highest ranked factor was the client's ability to pay. Other critical factors identified in same study were the clarity of scope of work, project cash flow, the need for work and the availability of qualified workforce

Studies in Palestine found that contractors prioritise clients with reliable payment capabilities (Enshassi et al. 2010; Mahamid 2022). In addition to this, other factors- financial values of the project, due date of payments, clarity of the contract clauses, clarity of the drawings and duration of the project were identified as being critical by Enshassi et al. (2010). Furthermore, Mahamid (2022) found that current workload and the need for work highly influenced the contractors' bidding strategy.

In Australia, Shokri-Ghasabeh & Chileshe (2016) evaluated 26 factors and found that the top ranked factors were client financial capability, project risk, project future benefits/profitability and Number of competitors/bidders. A study in Qatar identified 43 factors influencing bid/no-bid decisions with

ten critical factors, however the most significant factor was found to be previous experience with the employer (Jarkas et al. 2014). Binshakir et al. (2023) when reviewing the factors that affect bidding for sustainable construction projects in the United Arab Emirates (UAE) identified forty factors that influence bidding decisions of which ten were considered to be significant. However, the study noted that the need to ensure the clients financial stability is more critical than other considerations that are typically prioritised in traditional construction projects.

In Tanzania, Chileshe et al. (2021) identified 30 factors of which 11 were considered to be significant. However, the most significant factor was availability of capital. Similarly, a study in Sri Lanka by Dodanwala & Santoso (2025) noted that contractor related factors such as general overhead and degree of difficulty with obtaining a bank loan were considered significant. A study in Nigeria by Olatunji et al. (2017) analysed 41 factors, of which 11 were considered to be statistically significant, however most of these factors were not rated highly by the contractors.

Ahmed et al. (2024) identified 43 bidding factors and found that the most studied factors in theoretical discussions were experience in similar projects, availability and costs of rental labour/equipment/material, and current workload. Conversely, the most studied factors in developed models were number of competitors, project size, and project complexity level. The study also noted that several factors were frequently overlooked, with insurance premium and tax liability being the most neglected. From a global perspective, Oo & Lim et al. (2022) study identified 28 factors and highlighted that client-related financial factors (payment terms, reputation) and project-specific considerations (size, complexity) were the most influential factors impacting bidding decisions.

It is relevant to note is that there is a moderate misalignment between the industry perceptions of what is important, and the perception found in academic literature (Ahmed & El-Adaway 2024) which suggests that real life factors may differ from what has been documented. Furthermore, there is no general consensus on the factors that influence the bidding decisions of a business as the importance of the influencing factors vary by the size of the company (Shokri-Ghasabeh & Chileshe 2016; Li et al. 2020), the organisational strategy (Wang et al. 2020) and the country.

2.3 Bid Decision Models:

Previous studies have led to the development of numerous models that support the bid/no-bid decision, each using varying methodology, influencing factors and analytical approaches. One of the earliest models was the deterministic worth-evaluation model by Ahmad (1990) which was based on a two-stage process - a deterministic attention-focusing method and a probabilistic decision method.

In the early 2000s, Wanous et al. (2000), developed the parametric solution which is considered to be a universal or one-size fits all approach to bidding decision making. Lin & Chen (2004) developed a fuzzy linguistic model that allows the decision makers to use linguistic terms (e.g., "high", "medium", "low") instead of the traditional numeric values and then converts these terms into fuzzy numbers for computation and further analysis. Around the same period Egemen & Mohamed (2007) developed the bid reasoning model that takes into account the strategic goals of the company highlighting the need for the bid/no-bid decision to align with an organisations' strategic objectives.

In 2011, Cheng et al. (2011) developed the Multi-Criteria Prospect Model for Bidding Decision (BD-MCPM) to address the complexity and subjectivity of bidding decisions, a model that is considered useful in standardising bidding strategies and aligning bid decisions with risk tolerance. The data envelopment analysis (DEA) approach was used to develop an empirical framework that provided an advantage of eliminating arbitrary subjective weighting and an ability to accommodate numerous variables and factors (El-Mashaleh 2013). Plebankiewicz (2014) proposed the use of mathematical models based on fuzzy sets theory which he found to be relevant to all aspects of construction bidding decision making, however in a further study on this Leśniak & Plebankiewicz (2015) developed a tentative version of a model based on the fuzzy sets theory however the usability of the model in real-world or industry would be dependent on the model being developed into a computer program.

By 2016, Shi et al. (2016) developed a model through an integration of Rough Sets, Niche Particle Swarm Optimization (NPSO) and GRNN (General Regression Neural Network) which is considered to improve accuracy of bid decision making. In the same year, Hwang & Kim (2016) developed a model using logistic regression and emphasised the alignment with company's bidding policies and strategies and a need to continually update the data used by the model. On the other hand, Al-Humaidi (2016) developed a computer program based on the fuzzy TOPSIS (Technique for Order Preference by Similarity to Ideal Solution) that can be used to consider multiple projects (up to 5) simultaneously. In 2017, Chisala (2017) developed a Simple Additive Weighted Scoring (SAWS) model using linearly weighted least-squares to generate importance scores and weights of the factors influencing bid/no bid decision, while Polat & Bingol (2017) developed a model using DEA that helps to address some of the subjectivity of the bid process. In 2019, Kumar & Raj (2019) developed a simpler model using DEA that calculates the favourability score for bidding opportunities different from the efficiency score calculated in the model developed by Polat & Bingol (2017). Marzouk & Mohamed (2018) proposed the fuzzy fault tree model which aimed to overcome limitations of traditional methods, such as reliance on historical data and subjective expert judgments and was considered to be suitable for any construction environment.

More recent models have focused on models that use computer programming such as Duygu & Ozbek (2020) that developed a tool on Microsoft Excel using Analytic hierarchy process (AHP) that has an advantage of reflecting the individual decision makers subjective preferences in a structured way, providing a unique result per individual while also able to aggregate several decisions from various individuals. However, a critical limitation on this model is that the cost and risk factors influencing bid decisions were excluded from the model.

Leśniak (2021) used statistical methods to develop two bid support models- The LOG (logistic regression) and LDA (logistic discriminant analysis models in a study which confirmed that the LDA model performed better than the LOG model, however it was noted that the tool is merely a decision support that should not replace human judgement.

In 2022, Gunduz & Al-Ajji (2022) developed the CHAID (Chi-squared Automatic Interaction Detector), and CRT (Classification and Regression Tree) decision tree algorithms based on an evaluation of key risk factors grouped into - Owner risk, Project risk, Bidding situation risk, Contract risk and Contractor risk. The study also found that the CHAID Model achieved 81% accuracy for

small-medium contractors and 77.5% for large contractors while the CRT Model achieved 82% accuracy for small-medium contractors and 80% for large contractors. In the same year, de Araujo et al. (2022) developed a classification model that uses various criteria to determine the attractiveness level of a project for an organisation based on their strategic goals. The model integrated fuzzy logic (Triangular Fuzzy Numbers, TFN) with the ELECTRE TRI-C method to handle subjective judgments and uncertainties in early project phases.

Mohamed et al. (2022) also proposed a mixed-method approach that overcomes the shortcomings of earlier models which did not clearly separate qualitative and quantitative influences on bidding decisions. Their hybrid framework consists of two components: a Rule-Based Expert System (RBES) that assesses qualitative factors in a binary (yes/no) format, and a Fuzzy Expert System (FES) that applies fuzzy logic to evaluate quantitative factors. Borayek et al. (2024) developed a decision-making tool using VBA and based on matrix analysis. Table 1 contains a summary of all the models reviewed.

Table 1: Summary of Bid Models

Year	Model	Reference
1990	Deterministic worth evaluation	(Ahmad 1990)
2000	Parametric solution	(Wanous <i>et al.</i> 2000)
2004	Fuzzy linguistic approach	(Lin & Chen 2004)
2011	Multi-Criteria Prospect Model for Bidding Decision (BD-MCPM)	(Cheng <i>et al.</i> 2011)
2013	Empirical framework using DEA	(El-Mashaleh 2013)
2014	Fuzzy sets theory	(Plebankiewicz 2014)
2016	Rough sets (RS)- NPSO- GRNN model	(Shi <i>et al.</i> 2016)
2016	Bid-decision making model using Logistic Regression	(Hwang & Kim 2016)
2016	Fuzzy TOPSIS	(Al-Humaidi 2016)
2017	Simple additive weighted scoring (SAWS) model	(Chisala 2017)
2018	Fuzzy fault tree	(Marzouk & Mohamed 2018)
2017/2019	DEA approach/model	(Polat & Bingol 2017) (Kumar & Raj 2019)
2020	Excel based tool using Analytic hierarchy process (AHP)	(Duygu & Ozbek 2020)
2021	Statistical models- LOG (logistic regression) and LDA (Logistic discriminant analysis) models	(Leśniak 2021)
2022	CHAID and CRT decision tree model	(Gunduz & Al-Ajji 2022)
2022	Classification model	(de Araujo & Alencar et al. 2022)
2022	Mixed qualitative -quantitative approach	(Mohamed & Jafari et al. 2022)

2.4 SMEs and Bidding Decisions:

In the UK, SMEs are identified using 3 main criteria- the number of employees, annual revenue and total assets (balance sheet total). They typically have less than 250 employees, and with either annual

turnover of less than £44million or total asset less than £38million (GOV.UK 2025). This suggests that SMEs have limited resources and are SMEs are more likely to feel the need for tools to support bid decision making (Leśniak 2021).

A previous study by (Bageis & Fortune 2009) found that the weight of importance given to the factors influencing the bid/no-bid decision was inconsistent, and the various factors differed for small and medium business enterprises when compared with the larger enterprises. This was supported by (Li et al. 2020) who suggested that the influencing factors may be determined by the size of the company and attributed this to the risk vulnerability level of the company. These differences can be illustrated in the following studies: In Australia, Shokri-Ghasabeh & Chileshe (2016) found that SMEs prioritised client financial capability and payment terms, while larger enterprises focused more on project risk and strategic planning. Similarly, Binshakir et al. (2023) observed that SME contractors prioritised client-related factors, while large contractors placed greater emphasis on project-related factors such as project risks and complexity.

In Sri Lanka, Dodanwala & Santoso (2025) found that SMEs considered contractor-related factors to be the most critical when deciding whether to bid on a project. This suggests that SMEs have unique concerns that influence the bid/no-bid decision.

3. METHODOLOGY:

The methodology employed in this study is a case study approach, a qualitative research strategy that enables the exploration of a current issue or situation in detail and within its real-world context, particularly when the boundaries between the phenomenon and its environment are ambiguous and the researcher lacks control over variables (Yin 2009).

The selected case study was an SME in the rail construction industry in the UK participating in public sector projects either as the principal contractor or as a subcontractor. The two individuals selected for the interview were the two experts and primary decision makers on whether to bid or not bid for a project.

The study focused on developing a bid/no-bid decision support tool that is tailored to the need of an SME in the UK rail construction industry. The objective was to create a structured, transparent, and user-friendly mechanism for evaluating project opportunities, thereby supporting more informed and consistent decision making. Given the lack of consensus in previous research regarding the factors influencing the bid / no-bid decisions, this study conducted semi-structured interviews within the selected SME case study organisation to identify and validate the most relevant and critical factors influencing their decision to bid for a project and affirm their relative importance to the organisations business objectives.

To develop the bid decision support tool incorporating these validated factors, the weighted criteria method was adopted. This method provides a data-driven approach that ranks project opportunities based on predefined criteria. It was adopted due to its simplicity, adaptability, and effectiveness in multi-criteria decision-making environments (Odu 2019). Microsoft Excel was selected as the development platform owing to its accessibility and familiarity among end-users within the business.

Step 1: Identification of the factors influencing the bid/no-bid decisions

This stage involved the identification of the decision factors/criteria relevant to the bid/no-bid process. This was carried out through semi- structured interviews with the primary decision-makers in the company to identify the factors that would influence their decision to bid for a project. These criteria were then categorised into groups.

Step 2: Assign the weights to be attributed to the factors

This step involved determining the relative importance of each factor based on the organisational strategic goals and objectives. A weighting scheme was developed using expert judgement by consultation with the senior management team. The final weights were then normalised to ensure that their total was equal to 100%.

Table 2: Criteria and assigned weighting

Criteria	max score	weight
Client Relationship	30	15.0%
Contractual arrangements	30	30.0%
Scope of Works	30	25.0%
Location, Resource & Complexity	30	10.0%
Financial	30	20.0%
Total	150	100.0%

Step 3: Develop a rating scale for each criterion

A rating scale was then developed for each criterion depending on the type of criteria, the organisational requirements and the favourability of the criteria to the business bidding decision.

Figure 1: Rating Scale

LOCATION RATING Scotland 5 London 1 North East 3 North West 4 South West 2 South East 2 Wales 3 Northern Ireland 3 Other 1	YES/NO RATING Yes 5 No 1	SECTOR RATING Private 1 Public 5	BAND 1- Unfavourable 2- Below Average 3- Neutral 4- Above Average 5- Favourable	BAND- POOR TO EXCELLENT 1- Poor 2- Fair 3- Good 4- Very Good 5- Excellent	COMPLEXITY RATING Very Complex 1 Complex 3 Normal 5	SERVICES RATING Design Only 3 Installation Only 4 Design & Installation 5 Consultancy Only 2	CONTRACT VALUE RATING £0 - £100,000 3 £101,000 - £500,000 4 £501,000 - £1,000,000 5 > £1,000,000 3
MARKET COMPETITION RATING Direct Award 5 Framework 4 Open Competition 3 Outside Industry 2	NEW/EXISTING RATING New 1 Existing 5	BAND- EXTENSIVELY TO NOT AT ALL 1- Extensively 2- Substantially 3- Moderately 4- Minimally 5- Not at all	BAND- SUFFICIENCY 1- Not sufficient at all 2- Barely sufficient 3- Moderately sufficient 4- Mostly sufficient 5- Fully sufficient	NO OF LOCATION RATING 1 5 2 4 3 3 4 2 ≥5 1	CRITERIA WEIGHT max w CLIENT RELATIONSHIP 15.0% 5 CONTRACTUAL ARRANGEMENTS 30.0% 9 SCOPE OF WORKS 25.0% 8 LOCATION, RESOURCE AND COMPLEXITY 10.0% 3 FINANCIAL 20.0% 6	RISK LEVEL RATING 1- High Risk 1 2- Moderate Risk 2 3- Neutral 3 4- Low Risk 4 5- Very Low Risk 5	
NEGATIVE CASHFLOW RATING Zero £0 5 £1- £50,000 4 £50,001 - £100,000 3 £100,001 - £200,000 2 >£200,000 1		BAND- RESOURCES 1- Full Agency Resources 2- Mostly Agency Resources 3- Balanced Agency & In-House 4- Mostly In-House Resources 5- Full In-House Resources	BAND 1- Very Likely 2- Likely 3- Neutral 4- Unlikely 5- Very Unlikely				

Step 4: Tool development on Microsoft Excel

The decision tool was structured as a decision matrix with criteria, rating/score, weight, user-input scale and an automatically calculated weighted score. Rating each criterion was defined based on

the criterion and scores were assigned to it based on favourability of the criterion with natural language words used to assess the criterion.

The weighted criteria was then calculated using the formula for each category of criteria.

$$= (\text{Weight \%}) \times (\text{Score})$$

This was then summed up to get the total weighted score using the formular

$$= \text{SUM (Weighted Scores)}$$

Additional features such as data validation, conditional formatting, and cell protection were applied to enhance user experience and ensure data integrity

Step 5: Validation and Pilot testing

The tool was validated by testing it against historical project bid data. Its recommendations were compared with the actual outcomes of past bids. Based on user feedback and management insights into the real performance of these bids, the rating scale was further refined. Additional feedback was also gathered regarding the tool's ease of use, clarity, and usefulness in supporting decision-making. Following validation, the tool was integrated into routine bid evaluation procedures providing a standardised framework for bid/no-bid decisions.

4. FINDINGS AND DISCUSSION:

The development of the bid/no-bid decision tool using a weighted criteria method in Microsoft Excel provided significant insights into its effectiveness in supporting SMEs in selecting the projects to invest their efforts in bidding. This section presents the key findings from the implementation of the decision tool and a subsequent discussion of its practical implications, limitations and areas for improvement.

4.1 Identification of Critical Decision factors:

The business identified primarily five groups of factors critical to their decision to bid or not bid on a project. In order of importance these groups are Contractual arrangements, Scope of works, Financial, Client relationship and Location, resource & complexity.

1. *Contractual arrangements:* This was considered to be the most critical factor by the business and had the highest weighting in the decision tool. This group of factors assessed the favourability of the form of contract, the payment terms, the delay damages, the defect liability period, the performance bond or guarantees required as well as the level of insurance required as documented in the contractual requirements of the job. Consistent with previous studies the type (form) of contract that include the payment terms (policy) and the bond requirements have been identified as significant factors that influence the decision to bid (Dodanwala, Santoso 2025, Enshassi, Mohamed et al. 2010) however, one study pointed out that insurance premium has been overlooked in the consideration of factors affecting bidding decisions (Ahmed et al. 2024).

2. Scope of works: This group of factors assessed the level of strategic fit of the project, clarity of the scope of works, design suitability and constructability, favourability of the program, milestones and sequence of works, the level of third-party interfaces and the level of potential risks associated with completing the job. Earlier studies have identified that need for work being the most critical factor influencing the decision to bid or not bid for a project. While that is not mentioned by the business as influencing their decision- it is possible that the assessment of the strategic fit may be influenced by the need for work, current workload and experience in similar projects which have been identified by Shash (1993) as significant factors influencing contractors' decisions in the UK. Furthermore, the concerns about clarity of scope of works, design suitability and constructability could be validated from the study by Jarkas et al. (2014), Aldossari (2024) and Enshassi et al. (2010) which highlighted that unclear and/or incomplete drawings and design specifications, complex or uncoordinated plans can cause frequent disruptions, reduced productivity, increased costs, delays and potentially drive up the risks associated with project delivery. Furthermore, Aldossari (2024) identified clarity of the scope of the work as a significant factor influencing bidding decisions.
3. Financial: This group of factors assessed the contract value, the market competition, negative cashflow, profitability, likelihood of requiring additional financing or the possibility that significant extra costs will be required as well as if there is the possibility of an unusual expense with an unknown supplier. For the study, market competition referred to the type of bid and included the options- direct award, framework, open competition and outside industry. These options were defined based on the type of bids that aligned with their goals and strategy; however, their preferred option was for direct award projects. Cash flow is also considered a significant factor as it affects the contractor's ability to successfully deliver and complete the project (Aldossari 2024).
4. Client Relationship: This group of factors grouped client relationships into two- new and existing clients. For new clients, the client's reputation, credit rating and if the client was a public sector or private sector client was assessed. On the other hand, for existing clients, the business assessed their relationship with the client, the client's management ability and payment history. However, the business preferred existing clients that they have a good relationship with. This aligns with previous study by Jarkas et al. (2014) which found that the contractor's bidding decision is significantly influenced by the employer (client) characteristics—such as fairness, personal attitude, level of strictness, tendency to make changes during construction, financial stability, reliability in honouring agreements, and timeliness in processing payments. Also, Olatunji et al. (2017) identified the previous relationship with client, Mahamid (2022) identified client's reputation and promptness of payments as significant factors influencing bidding decisions while Enshassi et al. (2010) and Oo et al. (2022) identified clients' reputation.
5. Location, Resource and Complexity: This group of factors assessed the region/location where the project will take place to be certain that this is a location that the business wants to work. It further assessed how many locations (sites), the level of complexity of the project, the services required, the resources required and to what extent the use of subcontract would be required to deliver the project. There was a preference for projects with single job/site

locations rather than multiple location as the risks inherent in the delivery of multiple location projects is higher than for single location. Mahamid (2022) identified location as a key factor influencing the decision to enter a bid.

The services required were categorised into design only, installation only, design and installation and consultancy only. The business preferred design and installation jobs where they had full control of the end-to-end delivery of the project as compared to design only or installation only jobs. In terms of resources required for the project- the options ranged from whether the job could be completed with full use of in-house resources to full use of agency resources. Based on the assigned weighting of the option, the business preferred jobs that would utilise in-house resources rather than a huge dependency on agency resources. Availability of labour has been identified as a factor influencing the decision to bid (Chileshe & Kavishe et al. 2021)

The use of subcontractors in the construction industry for the delivery of projects is fairly common (Shash 1993), however the options assessed the level of dependence on subcontractors to deliver the project with the preference for no use or minimal use of subcontractors.

4.2 Potential Deal Killers:

In addition to the five categories of factors, the business identified potential deal killers in which case there was no need to bid for the project. These potential deal ‘killers’ were:

- i. The achievability of the timescales for submitting the tender. The business prioritised putting in a good quality tender rather than just meeting the timelines and just putting in a tender, hence where the timelines for submitting the tender was deemed to be insufficient to the business, the decision would be No bid.
- ii. A second potential deal ‘killer’ identified was if it was a client they wanted to work with. This factor is considered to be subjective, however the business considered client reputation or past experiences with the client and where this was not a client, they wanted to work with the decision would be no bid without assessing all the various categories of factors.
- iii. The third potential deal ‘killer’ identified was whether there are stipulations that the business would be unable to meet. Where there were such stipulations, the decision would be no bid.
- iv. The fourth identified potential deal ‘killer’ was if there was unlimited liability. Unlimited liability within the context of bidding for a project meant that the business will be liable for everything that occurs on the project which introduces significant risks as well as a huge potential for huge losses beyond the budgeted value of the project to the business. Hence where there was unlimited liability, the decision would be no bid.

4.3 Practical Benefits of the Tool:

The developed bid/no-bid decision tool offered several practical benefits to the organisation. First it provided a standardised approach to bid or no bid decisions within the organisation thereby reducing the dependency on intuition and gut feelings in decision making. Second, incorporating the clearly

defined criteria and the assigned weights created a more consistent approach that enhanced strategic alignment and enabled the organisation to focus on projects that align with the long-term strategic goals. Third, the tool saved the time and cost by creating a shared understanding of the bidding criteria and enabling the organisation to filter out unsuitable bids early, reducing the amount of wasted proposal efforts.

Finally, the tool's implementation in Microsoft Excel enhanced its practicality. The platform is widely used, does not require specialised software or technical expertise, and is easily adaptable to other spreadsheet tools. This ensured rapid adoption by staff and allowed the tool to be integrated seamlessly into existing workflows, making it a cost-effective solution for SMEs. Over time, the organisation reported increased confidence in its bid decisions, better alignment with business goals, and greater efficiency in pre-bid review processes.

4.4 Limitations and Challenges:

The bid decision support tool was developed in this research solely to support the decision makers in making more informed and consistent decisions when evaluating project opportunities based on the preferences of the decision makers and company strategic goals but there are several limitations.

First, the use of the weighted criteria method introduces subjectivity, as both the weighting and rating of criteria rely on individual judgment. Second, the tool was developed within a single SME context, with factors and weightings tailored to that organisation's strategic priorities. This limits its applicability to other firms with different goals or operating environments.

Third, the tool does not incorporate or evaluate actual bid outcomes, meaning it cannot predict success rates or support performance benchmarking. Its role is limited to internal decision consistency rather than outcome validation.

Finally, while Excel was chosen for ease of use, it presents constraints in scalability, version control, and integration with broader enterprise systems.

Future enhancements could include incorporating additional case studies, integrating historical bid data, and migration to platforms such as Power BI or custom-built applications to improve scalability and functionality.

5. CONCLUSION:

While several studies have explored the factors influencing bid/no-bid decisions and proposed various models to support bidding strategies, there has been limited research focused specifically on small and medium-sized enterprises (SMEs) within the UK rail construction industry. This study aimed to address that gap by developing a structured decision-support tool tailored to the needs of an SME, with the goal of aligning bidding decisions more closely with the organisation's strategic objectives. In doing so, the tool moves decision-making away from reliance on instinct, intuition, or informal judgement, towards a more consistent and transparent approach.

The research identified five key categories of criteria that influence bid/no-bid decisions: contractual arrangements, scope of works, financial considerations, client relationships, and location, resources,

and project complexity. Among these, contractual arrangements were deemed the most critical by the organisation. In addition to these primary factors, the study also highlighted several potential "deal-killers" that could override other considerations. These included unrealistic tender timescales in which the timeline for submitting the tender is unachievable, a lack of desire to work with the client, stipulations that the business would be unable to meet, and clauses involving unlimited liability.

The tool delivered practical benefits by standardising the bid evaluation process, enhancing alignment with strategic goals, and enabling early filtering of unsuitable opportunities. Its Excel-based implementation ensured ease of adoption and integration into existing workflows, resulting in improved decision confidence and greater efficiency for the organisation. The findings contribute to both academic understanding and practical application by offering a practical decision-making approach for SMEs in the rail construction industry.

REFERENCES:

- AHMAD, I., 1990. Decision-Support System for Modeling Bid/No-Bid Decision Problem. *Journal of Construction Engineering and Management*, **116**(4), pp. 595–608.
- AHMAD, I. and MINKARAH, I., 1988. Questionnaire Survey on Bidding in Construction. *Journal of Management in Engineering*, **4**(3), pp. 229–243.
- AHMED, M.O. and EL-ADAWAY, I.H., 2024. Exploring the Influences on Construction Bidding Decisions: Insights from Literature and Industry Experts, *Construction Research Congress 2024* 2024, pp. 350–360.
- AHMED, M.O., EL-ADAWAY, I.H. and CALDWELL, A., 2024. Comprehensive understanding of factors impacting competitive construction bidding. *Journal of Construction Engineering and Management*, **150**(4), pp. 04024017.
- ALDOSSARI, K.M., 2024. Exploring Bid/No-Bid Decision Factors of Construction Contractors for Building and Infrastructure Projects. *Buildings (Basel)*, **14**(10), pp. 3114.
- AL-HUMAIIDI, H.M., 2016. Construction projects bid or not bid approach using the fuzzy technique for order preference by similarity FTOPSIS method. *Journal of Construction Engineering and Management*, **142**(12), pp. 04016068.
- ALSAEDI, M., ASSAF, S., HASSANAIN, M.A. and ABDALLAH, A., 2019. Factors affecting contractors' bidding decisions for construction projects in Saudi Arabia. *Buildings*, **9**(2), pp. 33.
- BAGEIS, A.S. and FORTUNE, C., 2009. Factors affecting the bid/no bid decision in the Saudi Arabian construction contractors. *Construction Management and Economics*, **27**(1), pp. 53–71.
- BINSHAKIR, O., ALGHANIM, L., FATHAQ, A., ALHARITH, A.M., AHMED, S. and EL-SAYEGH, S., 2023. Factors affecting the bidding decision in sustainable construction. *Sustainability*, **15**(19), pp. 14225.

BORAYEK, M.N., SALEH, N.M. and ATTIA, T.M., 2024. Exploring Factors Affecting Bidding Decision of Construction Firms in The New Era of Construction Industry in Egypt. *Engineering Research Journal*, **183**(4), pp. 133–155.

BOURY, A., 2024-last update, UK Construction Industry Trends 2024 | The Access Group. Available: <https://www.theaccessgroup.com/en-gb/construction/resources/uk-construction-industry-trends/> [Mar 24, 2025].

CABINET OFFICE and GOULD MP, G., 25/02, 2025-last update, New public procurement rules to drive growth, opportunities for small businesses and exclude suppliers that fail to deliver. Available: <https://www.gov.uk/government/news/new-public-procurement-rules-to-drive-growth-opportunities-for-small-businesses-and-exclude-suppliers-that-fail-to-deliver> [14/03, 2025].

CHENG, M., HSIANG, C., TSAI, H. and DO, H., 2011. Bidding decision making for construction company using a multi-criteria prospect model / Statybos įmonės apsisprendimas dalyvauti konkurse naudojant daugiakriterinį perspektyvų modelį. *Journal of civil engineering and management*, **17**(3),.

CHILESHE, N., KAVISHE, N. and EDWARDS, D.J., 2021. Critical factors influencing the bid or no-bid decision of the indigenous small building contractors in Tanzania. *Construction Innovation*, **21**(2), pp. 182–202.

CHISALA MAXWELL L., 2017. Quantitative Bid or No-Bid Decision-Support Model for Contractors. *Journal of Construction Engineering and Management*, **143**(12), pp. 04017088.

CLARK, D., -11-06, 2024-last update, Network Rail strengthens commitment to SMEs | Rail Industry Connect | Connecting you with rail industry insight and best practice. Available: <https://www.railindustryconnect.co.uk/network-rail-strengthens-commitment-to-smes/> [Apr 21, 2025].

DE ARAUJO, M.C.B., ALENCAR, L.H. and DE MIRANDA MOTA, C.M., 2022. Classification model for bid/no-bid decision in construction projects. *International Transactions in Operational Research*, **29**(2), pp. 1025–1047.

DODANWALA, T.C. and SANTOSO, D.S., 2025. Critical Factors Influencing the Bid/no-Bid Decisions of Small and Medium-Sized Contractors in Sri Lanka. *International journal of construction education and research*, **21**(1), pp. 24–49.

DUYGU, K. and OZBEK, M.E., 2020. Development of a Construction Project Bidding Decision-Making Tool. *Practice Periodical on Structural Design and Construction*, **25**(1), pp. 04019032.

EGEMEN, M. and MOHAMED, A.N., 2007. A framework for contractors to reach strategically correct bid/no bid and mark-up size decisions. *Building and Environment*, **42**(3), pp. 1373–1385.

EL-MASHALEH, M., 2013. Empirical Framework for Making the Bid/No-Bid Decision. *Journal of Management in Engineering*, **29**(3), pp. 200–205.

ENSHASSI, A., MOHAMED, S. and EL KARRIRI, A., 2010. Factors affecting the bid/no bid decision in the Palestinian construction industry. *Journal of Financial Management of Property and Construction*, **15**(2), pp. 118–142.

FSB, 2025-last update, UK Small Business Statistics. Available: <https://www.fsb.org.uk/media-centre/uk-small-business-statistics> [April 21, 2025].

GAMAGE, I.S. and PERERA, B., 2021. Framework to facilitate bid/No bid decision making of the contracting organisations in Sri Lanka, *Proceedings of International Conference on Business Management* 2021.

GOV.UK, April 11, 2025-last update, Supplementary information: Small and Medium-sized Enterprises definition (HTML). Available: <https://www.gov.uk/government/publications/procurement-act-2023-short-guides/supplementary-information-small-and-medium-sized-enterprises-definition-html> [June 18, 2025].

GOV.UK, Nov 18, 2021-last update, Integrated Rail Plan: biggest ever public investment in Britain's rail network will deliver faster, more frequent and more reliable journeys across North and Midlands. Available: <https://www.gov.uk/government/news/integrated-rail-plan-biggest-ever-public-investment-in-britains-rail-network-will-deliver-faster-more-frequent-and-more-reliable-journeys-across-no> [April 21, 2025].

GUNDUZ, M. and AL-AJJI, I., 2022. Employment of CHAID and CRT decision tree algorithms to develop bid/no-bid decision-making models for contractors. *Engineering, Construction and Architectural Management*, **29**(9), pp. 3712–3736.

HWANG, J. and KIM, Y., 2016. A bid decision-making model in the initial bidding phase for overseas construction projects. *KSCE Journal of Civil Engineering*, **20**, pp. 1189–1200.

JARKAS, A.M., MUBARAK, S.A. and KADRI, C.Y., 2014. Critical factors determining bid/no bid decisions of contractors in Qatar. *Journal of Management in Engineering*, **30**(4), pp. 05014007.

KUMAR, J.K. and RAJ, V., 2019. A study on key factors influencing bid decision model for construction projects, *IOP conference series: materials science and engineering* 2019, IOP Publishing, pp. 012004.

LAN OO, B., LO, H. and TECK-HENG LIM, B., 2012. The effect of bidding success in construction bidding. *Engineering, Construction and Architectural Management*, **19**(1), pp. 25–39.

LEŚNIAK, A., 2021. Statistical methods in bidding decision support for construction companies. *Applied Sciences*, **11**(13), pp. 5973.

LEŚNIAK, A. and PLEBANKIEWICZ, E., 2015. Modeling the Decision-Making Process Concerning Participation in Construction Bidding. *Journal of Management in Engineering*, **31**(2), pp. 04014032.

LEWIS, H., 2015. *Bids, Tenders and Proposals - Winning Business through Best Practice (5th Edition)*. Fifth edition. edn. London: London: Kogan Page Publishers.

- LI, G., CHEN, C., ZHANG, G. and MARTEK, I., 2020. Bid/no-bid decision factors for Chinese international contractors in international construction projects. *Engineering, Construction and Architectural Management*, **27**(7), pp. 1619–1643.
- LIN, C. and CHEN, Y., 2004. Bid/no-bid decision-making—a fuzzy linguistic approach. *International Journal of Project Management*, **22**(7), pp. 585–593.
- MAHAMID, I., 2022. Critical factors influencing the bid/No-bid decision in the Palestinian construction industry. *Engineering, Technology & Applied Science Research*, **12**(1), pp. 8096–8100.
- MARZOUK, M. and MOHAMED, E., 2018. Modeling bid/no bid decisions using fuzzy fault tree. *Construction innovation*, **18**(1), pp. 90–108.
- MOHAMED, E., JAFARI, P. and HAMMAD, A., 2022. Mixed qualitative–quantitative approach for bidding decisions in construction. *Engineering, Construction and Architectural Management*, **29**(6), pp. 2328–2357.
- ODU, G.O., 2019. Weighting methods for multi-criteria decision making technique. *Journal of Applied Sciences and Environmental Management*, **23**(8), pp. 1449–1457.
- OFFICE FOR NATIONAL STATISTICS (ONS), Nov 22, 2024-last update, Construction statistics, Great Britain - Office for National Statistics. Available: <https://www.ons.gov.uk/businessindustryandtrade/constructionindustry/articles/constructionstatistics/2023> [Mar 21, 2025].
- OFFICE FOR NATIONAL STATISTICS (UK), Feb 13, 2025-last update, Gross value added (GVA) of the construction industry in the United Kingdom (UK) from the 1st quarter of 1997 to 4th quarter of 2024. Available: <https://www.statista.com/statistics/540236/gross-value-added-construction-industry-gva/> [Mar 28, 2025].
- OLATUNJI, O.A., AJE, O.I. and MAKANJUOLA, S., 2017. Bid or no-bid decision factors of indigenous contractors in Nigeria. *Engineering, Construction and Architectural Management*, **24**(3), pp. 378–392.
- OO, B.L., LIM, T.H.B. and RUNESON, G., 2022. Critical Factors Affecting Contractors’ Decision to Bid: A Global Perspective. *Buildings (Basel)*, **12**(3), pp. 379.
- PATIL, T.C., WAGHMARE, A.P. and GAWANDE, P.S., 2016. Tender and bidding process in construction projects. *IJISET-International Journal of Innovative Science, Engineering & Technology*, **3**(3), pp. 492–498.
- PLEBANKIEWICZ, E., 2014. Modelling decision-making processes in bidding procedures with the use of the fuzzy sets theory. *International Journal of Strategic Property Management*, **18**(3), pp. 307–316.
- POLAT, G. and BINGOL, B.N., 2017. Data envelopment analysis (DEA) approach for making the bid/no bid decision: A case study in a Turkish construction contracting company. *Scientia Iranica*, **24**(2), pp. 497–511.

RAIL UK, -11-14, 2024-last update, Rail Crucial to unlocking economic growth and achieving net zero ambitions. Available: <https://railuk.com/environment/rail-crucial-to-unlocking-economic-growth-and-achieving-net-zero-ambitions/> [Apr 21, 2025].

SHASH, A.A., 1993. Factors considered in tendering decisions by top UK contractors. *Construction Management and Economics*, **11**(2), pp. 111–118.

SHI, H., YIN, H. and WEI, L., 2016. A dynamic novel approach for bid/no-bid decision-making. *SpringerPlus*, **5**, pp. 1–10.

SHOKRI-GHASABEH, M. and CHILESHE, N., 2016. Critical factors influencing the bid/no bid decision in the Australian construction industry. *Construction Innovation*, **16**(2), pp. 127–157.

UK GOVERNMENT, 2019-last update, Construction Sector Deal. Available: <https://www.gov.uk/government/publications/construction-sector-deal/construction-sector-deal#fn:1> [21/03, 2025].

WANG, J., WANG, L., YE, K. and SHAN, Y., 2020. Will bid/no-bid decision factors for construction projects be different in economic downturns? A Chinese study. *Applied Sciences*, **10**(5), pp. 1899.

WANOUS, M., BOUSSABAIN, A.H. and AND LEWIS, J., 2000. To bid or not to bid: a parametric solution. *Construction Management and Economics*, **18**(4), pp. 457–466.

YIN, R.K., 2009. *Case study research: Design and methods*. Sage.