

Client's Perception on Architect's Performance in Contract Administration

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Abstract:- In most contract administration, clients perceived that, the performance of architect have no significant impact while undertaking their responsibilities, this justification attributed the client's responses negatively toward engaging the services of architect to managing and coordinating contract activities. Based on this factor, this research paper intended to study the relevant of clients and the architects in contract administration with regard the architect responsibilities. Therefore, the framework of this methodology, employed inductive approach to obtain the necessary information on how does clients perceived architect performance. Data was collected using mixed method (quantitative and qualitative method) to identify the problem related to the Architect performance. The data obtained was analysed to figured out the negative and positive responses of the clients. The result obtained shows that, the image of architect in contract administration is subjective depending on the magnitude of the contract, majority of the respondents highlighted the advantage of architect services on an average platform, because majority of the client within the scope of the research work were not contracting out their project due to cost of hiring Architect compared to employing non architect to serve in place of the Architects, the client expresses that, majority of Architect are not concentrating in interpreting contract document, terms and conditions between the parties involve in contract administration. Hence, with regard the subject and the result obtained, architect should work in accordance to their professional ethics in carrying out their responsibilities in order to manage contract administration effectively.

Keywords: Clients Perception; Architect; Performance; Contract Administration.

I. INTRODUCTION

Contract administration is defined as the management of contract undertaking by client, Architect, contractor and other professional bodies relevant to constructions work, it involves negotiating, supporting and managing effective contracts expenses, and ensuring compliance with the terms and conditions, as well as documenting and agreeing on any changes or amendments that may arise during the project implementation (Gunduz and Elsherbeny, 2020). Clients plays important role in contract administration as they initiated and provide resources for the construction work. However, the architect interprets the client initiation into reality and also form the basic framework for which the contract will be carried out (Surahyo, 2018). The intention of this research paper was to obtain the necessary

information that will guide the researcher to draw a framework for assessing client's perception on architect performance, so that the end product of this work, will contribute toward enhancing the values of Architect in their field of endeavour and as well as administering contract activities effectively.

A. Problem Statement

Most clients perceived that architect's performance has little or insignificant to be given priority, based on the following;

- The privilege given to Architect to coordinate, document and communicate effectively about the issues relevant to the contract activities is misused
- The client perceived that, Architect role in contract management have little importance to deliver effective control of services.

B. Aim and Objectives

a) Aim

This paper intended to study the impact of client perception on architect's performance in contract administration. And to assess the client's responses on the negative and positive contribution services rendered by the architect through the following objectives.

b) Objectives

- To assess the client's perception on architect's performance.
- To assess the responsibilities of architects related to contract services.
- To identify the impact of architect performance in contract administrations.

C. Scope

The major area of this research paper, intend to determine architect's performance in contract administration of private building construction in Bauchi State.

D. Justification

Architects are expected to be the key pioneer in administering contract, because, their design provide the basis to negotiate and manage effective contracts expenses in any construction works. Majority of contract administration are managed by other professional or non-professional personnel, this because, Architect have lost their privilege to coordinate proper contract services to their clients. This research paper intends to figure out the problems associated to the architect performance in contract activities.

II. CONTRACT ADMINISTRATION

According to Kurniawan and Latief (2021), contract administration is the process of systematically and efficiently managing contract creation, execution, and analysis for the purpose of maximizing financial and operational performance as well as minimising risk. Contract administration involves making decisions and the timely flow of information to enable completion of the project as required by the contract documents including review and observation of the construction project. This is important to the client and Consultant to determine that the work is proceeding in conformity with the contract documents, and to detect any inaccuracies, ambiguities or inconsistencies in the project development (Gunduz and Elsherbeny, 2021). In administering contract, the architect administers contract impartially, although, he is generally employed by the client, and he is responsible for ensuring that the contract documentation is appropriate, accurate and all items under the contract, such as variations are properly coordinated (Sexton *et al.*, 2020). El-Adaway *et al.* (2018) assert that, contract administration is one of the most important jobs related to construction projects and involves numerous tasks occurring before and after contract execution and work order issuance. All work must be administered in accordance with the contract specifications, terms and conditions, state and federal laws and regulations.

According to Ajator (2017), Proper contract administration can be efficiently acquired through the followings:

- Developing proper and accurate bid and contract documents
- Complying with contract documents and specifications
- Enforcing state and federal regulations
- Ensuring quality control by overseeing, inspecting and reviewing sampling and testing of all materials and work keeping and maintaining accurate project records
- Recording, verifying and preparing monthly pay estimates
- Negotiating and processing of change orders, supplemental agreements and other contract modifications in a timely manner promoting good public relations and
- Setting and maintaining a high professional standard

A. The client

According to Sampaio *et al.* (2021), the client is referred to as the 'employer', who employs consultants, contractors and suppliers, it can be an individual, group of people, corporate body or government which own and initiate building project. The client has an important role in the process of project development in which they will appoint advisors authorise work to take place, agree costs and timetable and appoint professionals to execute the project, the following are role of a client (Aluko *et al.*, 2021).

- Being responsible for the execution of the project from the initial idea to implementation
- Choosing the players involved in all stages from design through construction to long term management
- Ensuring that the relevant permissions are secured (planning etc.) in partnership with the professionals appointed to the project
- May also be financier and eventual owner

It is worth mentioning that in many building projects the role of client may also be split, projects can have different stakeholders and funders each of whom play different role in the process of development and construction management (Pushpamali *et al.*, 2021).

B. Client Needs

According to Coskun and Sancar (2021), the continuing involvement of the architect during the construction phase helps assure the client that the completed building will reflect the design intent, and further ensures the quality of materials and workmanship. When the architect is retained by the client to administer the construction contract, the architect is the client's representative in dealing with the contractor. The architect will be available for advice and consultation with the client. Ogu and Imafidon (2021) viewed that, in monitoring the construction, the architect will be alert to whether the contractor has carried out the design intent and the contract requirements relating to quality of workmanship and materials. The architect will endeavour to guard the owner against defects and deficiencies in the work. Clients who are building or renovating small commercial buildings or single-family residences are good markets for this service because they often lack experience with the building process and do not have the ability to oversee construction themselves (Ayodele and Akugbe, 2020). These clients should readily recognize the benefit of having the architect interact with building contractors and code inspectors on their behalf. Developers of multifamily residential or larger commercial facilities generally do not see the need for these services, as they prefer to use their own personnel. Architects who are not retained for services during the construction stage should refrain from visiting the site or volunteering uncompensated services (Lindblad and Karrbom, 2021).

The standard of care requires design professionals to render the same quality of service whether properly compensated or not. In these cases, the architect might seek indemnification for lack of involvement mandated by the client (Ahuja *et al.*, 2020). Among owners of owner-occupied buildings, concern for quality is a major motivator. Institutional and public owners of complex facilities such as sports arenas, hospitals, and schools are usually more than willing to pay for the architect's oversight and administration services. Aluko *et al.* (2020) assert that, most federal, state, and local government agencies are interested in architect-provided construction administration services, regardless of the type of facility involved. On the other hand, corporate clients who are constantly in the building market may be more confident of their ability to administer the construction phase, since they are more likely to have on-staff experts who are competent to handle it. A general rule of thumb is that about 25 percent of the architect's total compensation for services accounts for construction administration (Rahmani, 2021).

This fee percentage is generally sufficient to compensate the architect for the following services during construction (Perera and Dewagoda, 2021):

- Spending one day per week on site, attending a meeting and observing the progress of construction
- Responding to questions from the contractors and material suppliers
- Reviewing shop drawings and submittals
- Reviewing and certifying monthly applications for payment
- Authoring clarifications and minor changes to the documents
- Assisting consultants with construction administration duties
- Record keeping
- Project closeout responsibilities

C. The Architect

The Architect is a person engaged by a client in work related to the design and construction of a building. He is responsible in the preparation of drawings, and employing the services of other professional to provide; structural design, mechanical design, bills of quantities, specifications and other expressions of purpose according to which a project to be executed (Assaf *et al.*, 2018).

According to Yap *et al.*, (2021), Fernandez-Antolin *et al.*, (2020) & Thneibat and Al-Shattarat (2021), the following are responsibility of an architect in administering a project:

- Architects should organise and manage their professional work responsibly and with regard to the interests of their clients.
- Architects provide drawing for the project.
- Architects are expected to perform with integrity and avoid any action or situations which are inconsistent with their professional obligations.
- Architects should maintain their professional service and competence in areas relevant to their professional work, and discharge the requirements of any engagement with commensurate knowledge and attention.

Michalak and Michalowski (2021) assert that, an architect serving as a construction administrator observes construction for conformity to construction drawings and specifications. These documents are part of the legal contract between the client and general contractor and when interpreting these legal documents, the architect's role shifts. The architect serves not as the client's direct agent but in a quasi-judicial capacity, showing partiality to neither owner nor contractor (Kalachi *et al.*, 2020). At other times during the construction phase the architect acts as the owner's representative and agent in the 1970s and early 1980s, in an effort to save money and fast-track construction, many developers started using non-architect construction managers for construction administration services (Kurniawan and Rahman, 2020). This placed architects in an awkward position, as they retained risk for the completed structure while not being compensated for their site observation services and other duties. Damci *et al.* (2020) opined that, Architects have strong incentives to serve as

construction administrators. Through construction administration, the architect can support the continuity, quality, and intent of the design. The architect serving as a construction administrator can better manage and limit project risks by facilitating project communications and maintaining clear project records. Serving as construction administrator also enables the architect to identify and correct problems in time to eliminate or minimize negative impact on construction costs (Iqbal *et al.*, 2020).

D. Architect Performance

According to Marisa and Yusof (2020), Architect Performance depending on the type and complexity of the contract administration, the responsibility of the Architect in construction management is to set the correct expectations. A process of discovering needs and understand the entire system and client requirement including interactions with the teams involve in the contract. Kelly and Ilozor (2020) opined that, assessment of the architect performance during the contract process will lead to understanding the schedules and processes in place which can then be fixed or improved in a future implementation phase. Architects should look at as an overall contract process and try to coordinate immediate problem in order to rule out performance. The goal of the client should be identified clearly base on the architect performance (Mbugua and Winja, 2021). There has been a dramatic change in the architect's role in recent years and there is now no automatic dual role for the architect, whereas the architect acts as design manager who is responsible for co-ordinating design tasks, the loss of the leadership role means that the architect is no longer in a position to influence the rest of the contract process (Awuzie *et al.*, 2021). This is mainly because of the increasing competitiveness and the influence of the other professions. Furthermore, the architect's role as the strategic advisor for the client in contract administration is diminishing. The reason for this is because architects have failed to satisfy their clients. According to Nwaki and Eze (2020) & Adelese and Abulude (2020), client dissatisfaction would appear to have arisen as architects moved away from being responsible for programme and financial control, the areas most of concern to clients, toward pure design. It would also appear to have arisen because clients and architects have different perceptions of quality in construction. Architects tend to interpret quality in terms of the finished product while clients increasingly see it in terms of control of the design and the construction process (Rong *et al.*, 2020). Therefore, increasingly clients are looking to an independent professional to act in the role of the client's contract administration.

III. RESEARCH METHODOLOGY

The basis of this research work was subjected to analysing performance using individual perception. The research paper identified the views of private clients with respect to performance of Architect in managing contract. The process employed the studies of relevant literatures and documents, and also induced questionnaire as a primary source of data collection to the targeted respondents to obtain relevant information on the subject matter. However, the research work adopted inductive approach, to

assess the private client perception in Bauchi Metropolis using a mono method of data collection in a numerical format so as to be able to quantify the effect of the research problem.

A. Research purpose

The purpose of this research, was an attempt to explain perception of client on the quality of architect performance in administering contract. The researchers also try to establish background to identify architect responsibilities and other matters that influence performance.

B. Research design

The design of this research paper adopted the approaches used by (Saunders *et al.* (2016) in which, the design comprises different layers similar to an onion. The concept explained the stages at which research work was guided, and the ideas behind it, explain the principles of research techniques.

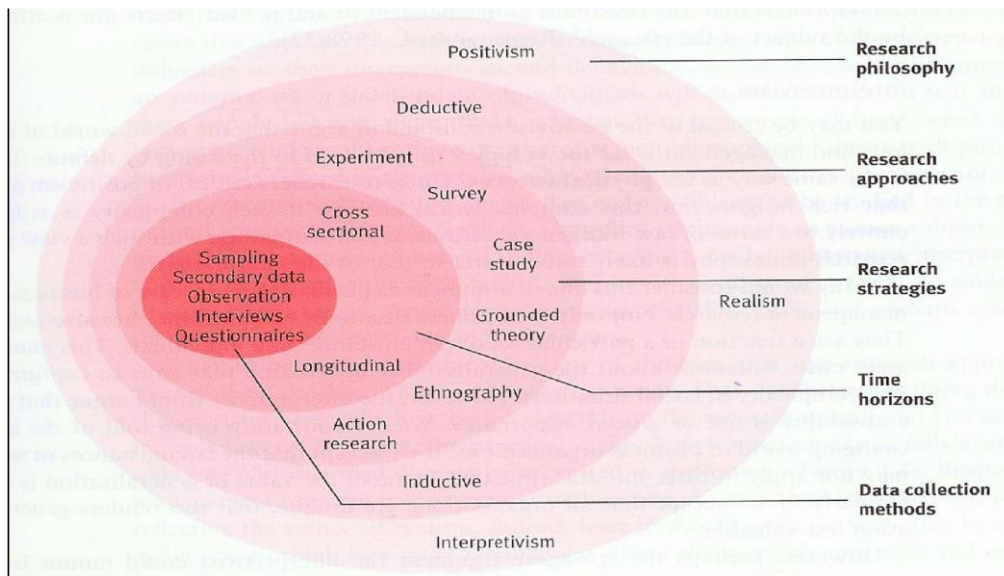


Fig. 1: Saunders et al., 2016

C. Data Collection techniques

The strategy employed for data collecting in assessing the client perception on architect performance, the researcher employed mono method, this constituted quantitative data to be collected from secondary and primary sources, in which, Questionnaire survey was used to capture the preferences of the respondents so as to measure the quality of the related problem of the study.

D. Data Validity

One of the most essential considerations when carrying out the research survey, potential respondents were selected, which are the private client, this is because, to ensure accurate data collected from the proper respondents. It is also based on the respondents who understand the problem of the research paper and can respond honestly, and correctly without bias.

E. Research instrument

The instrument adopted for this research work, after going thorough study on relevant problems, questionnaire survey was used,

F. Source of data

- Private clients that have recently completed or undertaking building construction project in Bauchi Metropolis.

- The selection of these clients was on simple random sampling method in order to obtain different and unbiased opinion from the targeted respondents.

G. Population of the study

The research employed purposive sampling at random on thirty (30) private clients to be the targeted population for this research study.

H. Data analysis

The quantitative data obtained from the sampled population was analysed using SPSS (statistical package) to assess the client perception on the architect performance.

IV. DATA PRESENTATION AND ANALYSIS

The chapter discusses the findings and analyses the result of the data obtained. Also, the chapter demonstrates the empirical results in a tabular form.

A. Empirical result

The SPSS analysis software was employed to analyse the collected questionnaires from the respondent on the client perception. The result of this analysis eventually highlights the performance of architect in contract administration. The questions of questionnaire were defined based on the objectives of the research problem. Therefore, the research work seeks to determine the level of performance of Architect display in administering contract services. The

questionnaire was divided into two sections (A and B). Section (A) defined personal information and section (B) defined the subject of the research work.

B. Data analysis

The information and data gathered through questionnaire were compiled and processed using average index method in relation to the objectives and scope of study. Result from the findings were illustrated in tabular form for easier understanding. The Statistical Package for Social Sciences

(SPSS) version 23.0 was the tool used for organising the data and performing data cleaning.

a) Section A

From table 1 below shows, 28 % of the respondents ranges between the age of 31-45yrs, 60% from 46-60%, 8% from 61-75 and only 4% came from 76-80yrs. This shows that, the 60% are those from the average age ground have the ability to respond to the questions of the research problem. And also, all the respondents are males as shown on table 2 blow.

Age	Result	Percentage (%)
31-45	7	28.0
46-60	15	60.0
61-75	2	8.0
76-80	1	4.0

Table 1: Ages of the Respondents

SPSS Statistic Software

Gender	Result	Percentage (%)
1	30	100

Table 2: Gender of the Respondents

SPSS Statistic Software

92% of the respondent are married and responsible people, the data obtained from these group could be reliable because of their maturity and responsibility, and only 8% are single as shown on the table 3 below.

Status	Result	Percentage (%)
Single	2	8.0
Married	23	92.0

Table 3: Marital Status of the Respondents

SPSS Statistic Software

Occupation	Result	Percentage (%)
Civil servant	4	16
Public servant	8	32
Business man	13	52

Table 4: Occupation Status of the Respondents

SPSS Statistic Software

From the table 4 above, 52% of the targeted respondent are Businessmen 32 % are public servant while 16% are government work. This result interpreted that, the data obtained is reliable because, a civil/public servant may

have knowledge-oriented background to be bias on the architect performance than those on the other group which are Businessmen, them, will provide accurate result, because of their subjectivity to contract activities.

Client	Result	Percentage (%)
Private	23	92.0
Public	2	8.0

Table 5: Work Status of the Respondents

SPSS Statistic Software

The table 5 above indicate that 92% of the respondent owned the construction work and most of the building are; residential and shopping malls/offices. Also, 8% of the

respondent are private own building but for public use (mosque).

b) Section B of the research questionnaire

Project Type	Result	Percentage (%)
Residential	18	72.0
Office	1	4.0
Business oriented bldg.,	4	16.0
Filling station	1	4.0
Religious building	1	4.0

Table 6: Types of Projects Handled by Respondent

SPSS Statistic Software

Result from the table 6 above indicate that 72% of the respondent are constructing residential building, 16% constructing business building; shopping centre, while construction of office block, filling station and religious building have 4%. Result obtained from this question, indicate that that, majority of private client build their own houses.

With reference to question 2 of this section and table 7 below, only 24% of the respondent are contracted the work to contractor, and 76% handle their constructing work themselves. It is clear that majority of private clients in Bauchi Metropolis prefer to handle construction work without contracting it out. But most of them depend on the supervision of either architect of any other project manager.

Contracting out project	Result	Percentage (%)
Yes	6	24.0
No	19	76.0

Table 7: Number of Projects Contracting Out

SPSS Statistic Software

Architect services	Result	Percentage (%)
Yes	12	48.0
No	13	52.0

Table 8: Number of Projects Involving Architect Services

SPSS Statistic Software

The above table 8, only 48% of the private client out of the targeted respondent employ the services of architect while 52% do not invite Architect to participate in their construction’s activities. With reference to the above table 9 below, it is related to table 7, the question was asked to determine the purpose for which those clients do not employ the services of architect. Based on this, 50% of the clients

seek the services of Architect for just design and supervision, 25% to design and build, 16.7% contract and 8.3% to manage the contract activities. This section indicated that most of the contract on-going, the services of Architect is just to support by providing design basis for the construction work.

Demand for architect	Result	Percentage (%)
To design only	3	25.0
To design and supervise	6	50.0
As a contractor	2	16.7
As a manager	1	8.3

Table 9: Types of Services Demanded from Architects

SPSS Statistic Software

With reference to the above table 10 below, the performance of architect in contract administration was assessed and 50% of the client rated the cost of hiring

Architect services is too expensive, 37.5% complaint that Architect are not honest in their practice and 12.5% complain of their inconsistency.

Architect performance	Result	Percentage (%)
Inconsistency	1	12.5
Not honest	3	37.5
Expensive	4	50.0
Not compliance	0	0.0

Table 10: Assessing Architects Performance in terms of Cost

SPSS Statistic Software

Client perception was assessed to determined Architect performance as shown on the table 11 below. Majority of the respondent rated the architect performance at

satisfactory level. This mean that architect is not handling their responsibilities effectively.

Client perception on Architect performance	Result	Percentage (%)
Excellent	4	16.0
Very good	6	24.0
Average	3	12.0
Satisfactory	7	28.0
Not-satisfactory	5	20.0

Table 11: Assessing Architects Performance

SPSS Statistic Software

Client perception was assessed to determined Architect performance as shown on the table 12 below. 52% of the respondent rate architect in average level.

Architect performance in contract administration	Result	Percentage (%)
Excellent	4	4.0
Very good	6	12.0
Average	3	52.0
Satisfactory	7	28.0
Not-satisfactory	5	4.0

Table 12: Assessing Architects Performance on Contract Delivery

SPSS Statistic Software

Architect performance expectations by client in contract administration	Result	Percentage (%)
Excellent	20	80
Very good	3	12
Average	2	8
Satisfactory	0	0
Not-satisfactory	0	0

Table 13: Assessing Architects Performance in terms of Satisfying his Clients

SPSS Statistic Software

Client’s expectation on architect performance is always higher based on the fact that, their responsibilities is assumed to dominate the building industry. The result obtained from table 12 above have given clear indication that, about 80% of those private clients are expecting architect performance objectively.

• **Introduction:** The present chapter explains an overall summary of the research and demonstrates the primary findings of the research as well as the result of data analysis of empirical study employed. This chapter also reports the limitations of the research and demonstrates specific applicable suggestions for Architect whom are the concern.

V. FINDING

Base on the analysis tabulated, the finding of this research work has put into consideration the designed objectives of the research work from the perception of the private client on architect performance. The result obtained shows that, the image of architect in contract administration is subjective depending on the magnitude of the contract, majority of the respondents highlighted the advantage of architect services on an average platform, because majority

of the client within the scope of the researched work did not contract-out their project for the following:

- Cost of hiring Architect is higher compared to employing non architect to serve in place of the Architect
- Architect commitment, prevent them from carrying out their duty responsibly, this is why, most of the respondent score the performance average.
- Majority of the respondent express that, most of the architects are concerned with their financial benefits rather than concentrating on the contract document, terms and condition between the parties involved.

The result of this research paper did not favor the architect in terms of his performance in contract administration.

VI. CONCLUSION

The subject of this research work details out the architect services in contract administration. From the performance result and finding, analysis have shown that, the expectation on architect responsibilities, on the side private client perception, yielded negative interpretations to the profession in general. Though, most of the private client refuses to admit their work into contractual condition due to their involvement in previous contract experience.

Therefore, the position of the private client on architect performance was rate on the average level.

VII. RECOMMENDATION

With regard the subject and the result obtained, architect should consider professional ethics in carrying out their responsibilities in order to coordinate contract administration with high degree of expectation.

CONTRIBUTION TO KNOWLEDGE

The researched work concentrated on the services of architects can render toward the development of sustainable environment, the result obtained revealed that, for the architects to practice professionally, the architect must ensure to have the knowledge of their professional ethics. This knowledge will guide them to understand the principles and standards required in carrying out his/her job.

REFERENCES

- [1.] Adelese, S. A., & Abulude, F. O. (2020). Perception of Some Professionals in Ondo State, Nigeria on the Impact of Outsourcing in Construction Projects. *Continental J. Applied Sciences Adelese and Abulude (2020)*, 15(2), 25-44.
- [2.] Ahuja, S., Nikolova, N., & Clegg, S. (2020). Professional identity and anxiety in architect-client interactions. *Construction Management and Economics*, 38(7), 589-602.
- [3.] Ajator, U. O. (2017). The Imperatives of Effective Documentation in Contract Administration and Management in Nigeria. *Global Journal of Research in Engineering*.
- [4.] Aluko, O. R., Idoro, G. I., & Mewomo, M. C. (2020). Relationship between perceived service quality and client satisfaction indicators of engineering consultancy services in building projects. *Journal of Engineering, Design and Technology*.
- [5.] Aluko, O. R., Idoro, G. I., & Ajayi, S. O. (2021). Perceived service quality of architectural consultancy firms and client satisfaction in building projects in Nigeria. *Journal of Engineering, Design and Technology*.
- [6.] Assaf, S., Hassanain, M. A., Hadidi, L., & Amman, A. (2018). A systematic approach for the selection of the architect/engineer professional in construction projects. *Architecture, Civil Engineering, Environment*, 10(4).
- [7.] Awuzie, B. O., Monyane, T. G., Koker, C. D., & Aigbavboa, C. O. (2021). Evaluation of Factors Influencing Environmental Sustainability Performance of Construction Projects in South Africa. *Sustainability and Climate Change*, 14(2), 122-132.
- [8.] Ayodele Emmanuel, I., & Akugbe Collins, O. (2020). Clients Versus Consultants Assessment of Project Success in Nigeria. *Journal of Engineering Research and Reports*, 35-43.
- [9.] COŞKUN, H., & Sancar, S. (2021). Client satisfaction as perceived by Architects and Civil Engineers. *Turkish Journal of Engineering*, 5(3), 100-104.
- [10.] Damci, A., Arditi, D., Polat, G., & Turkoglu, H. (2020). Motivation of civil engineers and architects in Turkey. *Organization, technology & management in construction: an international journal*, 12(1), 2044-2052.
- [11.] El-Adaway, I. H., Abotaleb, I. S., Eid, M. S., May, S., Netherton, L., & Vest, J. (2018). Contract administration guidelines for public infrastructure projects in the United States and Saudi Arabia: Comparative analysis approach. *Journal of construction engineering and management*, 144(6), 04018031
- [12.] Fernandez-Antolin, M. M., del-Río, J. M., del Ama Gonzalo, F., & Gonzalez-Lezcano, R. A. (2020). The relationship between the use of building performance simulation tools by recent graduate architects and the deficiencies in architectural education. *Energies*, 13(5), 1134.
- [13.] Gunduz, M., & Elsherbeny, H. A. (2020). Operational framework for managing construction-contract administration practitioners' perspective through modified Delphi method. *Journal of Construction Engineering and Management*, 146(3), 04019110.
- [14.] Gunduz, M., & Elsherbeny, H. A. (2021). Critical Assessment of Contract Administration Using Multidimensional Fuzzy Logic Approach. *Journal of Construction Engineering and Management*, 147(2), 04020162.
- [15.] Iqbal, S., Ehtisham, N., Bukhari, S. F. K., & Mahmood, S. (2020). The Assessment of Risk Management & Engineering Management Practices at Project Planning Phase on Performance of Construction Projects. *Journal of Business and Social Review in Emerging Economies*, 6(4), 1369-1378.
- [16.] Kalach, M., Abdul-Malak, M. A., & Srour, I. (2020). Architect and engineer's spectrum of engagement under alternative delivery methods: Agreement negotiation and formation implications. *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 12(1), 04519048.
- [17.] Kelly, D., & Ilozor, B. (2020). Performance outcome assessment of the integrated project delivery (IPD) method for commercial construction projects in USA. *International Journal of Construction Management*, 1-9.
- [18.] Koc, K., & Gurgun, A. P. (2021). Ambiguity factors in construction contracts entailing conflicts. *Engineering, Construction and Architectural Management*.
- [19.] Kurniawan, D., & Rahman, A. (2020, May). Critical risk factor affecting project performance in West Sumatera. In *IOP Conference Series: Materials Science and Engineering* (Vol. 849, No. 1, p. 012009). IOP Publishing.
- [20.] Kurniawan, A., & Latief, Y. (2021, March). Evaluation of risk quality control in construction company. In *IOP Conference Series: Materials*

- Science and Engineering* (Vol. 1098, No. 2, p. 022033). IOP Publishing.
- [21.] Lindblad, H., & Karrbom Gustavsson, T. (2021). Public client's ability to drive industry change: the case of implementing BIM. *Construction Management and Economics*, 39(1), 21-35.
- [22.] Marisa, A., & Yusof, N. A. (2020). Factors influencing the performance of architects in construction projects. *Construction Economics and Building*, 20(3), 20-36.
- [23.] Mbugua, M., & Winja, M. (2021). Identification and Ranking of Key Performance Indicators in Building Construction Projects in Kenya. *Engineering, Technology & Applied Science Research*, 11(1), 6668-6673.
- [24.] Michalak, J., & Michałowski, B. (2021). Understanding of Construction Product Assessment Issues and Sustainability among Investors, Architects, Contractors, and Sellers of Construction Products in Poland. *Energies*, 14(7), 1941.
- [25.] Nwaki, W. N., & Eze, C. E. (2020). Lean construction as a panacea for poor construction projects performance. *ITEGAM-JETIA*, 6(26), 61-72.
- [26.] Ogbu, C. P., & Imafidon, M. O. (2021). Influence of selection criteria on clients' satisfaction with construction consultancy services in Nigeria. *Journal of Engineering, Design and Technology*.
- [27.] Perera, B. A. K. S., & Dewagoda, K. G. (2021). Streamlining the management of payment delays: the case of Sri Lankan Government building construction projects. *Journal of Financial Management of Property and Construction*.
- [28.] Pushpamali, N. N. C., Agdas, D., Rose, T. M., & Yigitcanlar, T. (2021). Stakeholder perception of reverse logistics practices on supply chain performance. *Business Strategy and the Environment*, 30(1), 60-70.
- [29.] Rahmani, F. (2021). Challenges and opportunities in adopting early contractor involvement (ECI): client's perception. *Architectural Engineering and Design Management*, 17(1-2), 67-76.
- [30.] Rong, X., Zhang, S., Bakhtawar, B., Hussein, M., Abdelmageed, S., Tariq, S., & Zayed, T. (2020). Performance assessment for modular integrated construction projects in Hong Kong. *International Journal of Architecture, Engineering, and Construction*, 9(3), 12020017.
- [31.] Sampaio, C., Cardoso, P., Rossier, J., & Savickas, M. L. (2021). Attending to Clients' Psychological Needs During Career Construction Counselling. *The Career Development Quarterly*, 69(2), 96-113.
- [32.] Saunders, M., Lewis, P. & Thornhill, A. (2016). *Research Methods for Business Students*. 7th edition. sl: Harlow: Pearson Education.
- [33.] Sexton, D., El-adaway, I. H., Abdul Nabi, M., & El Hakea, A. H. (2020). Using the simplified acquisition of base engineer requirements in construction projects: Contract administration guidelines. *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 12(3), 04520018.
- [34.] Surahyo, A. (2018). Construction contract administration. In *Understanding construction contracts* (pp. 225-241). Springer, Cham.
- [35.] Thneibat, M. M., & Al-Shattarat, B. (2021). Critical success factors for value management techniques in construction projects: case in Jordan. *International Journal of Construction Management*, 1-22.
- [36.] Yap, J. B. H., Lim, B. L., Skitmore, M., & Gray, J. (2021). Criticality of project knowledge and experience in the delivery of construction projects. *Journal of Engineering, Design and Technology*.