



FIG WORKING WEEK 2023

28 May - 1 June 2023 Orlando Florida USA

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Analysis of Risk Triggers in Public Tertiary Education Building Projects

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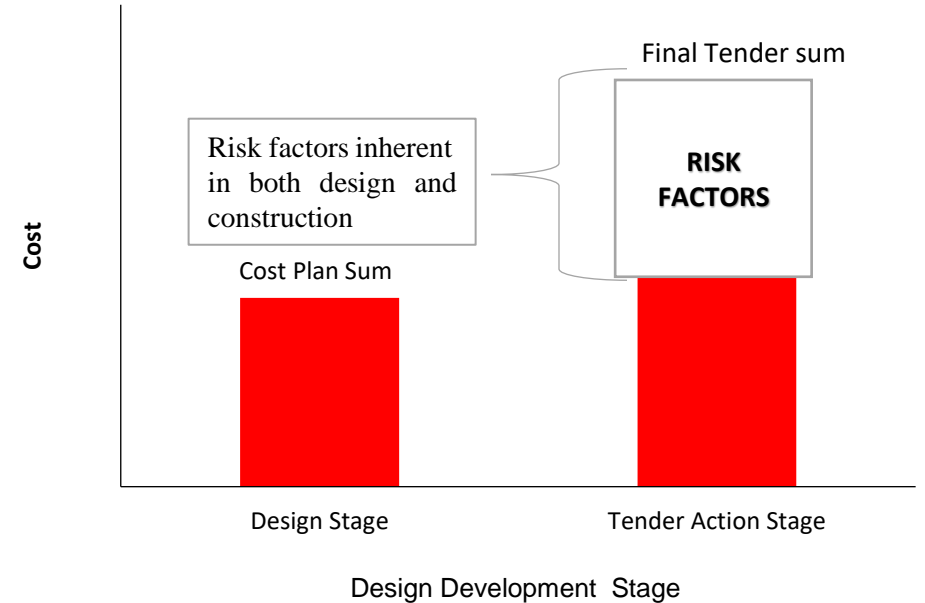
studies

(UK, Middle East, Asia and Africa)

traditional procurement

(where cost plans were used)

deviations are inevitable



- while many budget overruns are due to certain circumstances observed as risk factors •
- what triggers risks in public tertiary education building projects (TEBP)?



- The aim of the study is to determine the risk triggers in public tertiary education building projects (TEBP) with a view to enhancing the performance of these projects.

Objectives

- To identify the various risk triggers in building projects from literature.
- To assess respondents' perceptions on the identified risk triggers.



Literature Review

Table 1: Risk Triggers

Factors	Reference Sources
Location of the project	(Adedokun & Agboola, 2018; Akanni et al., 2015; Aydogan & Koksai, 2013; Ayegba et al., 2014; Bing & Tiong, 1999; Uher & Loosemore, 2004)
Financial constraints	(Abdul-Rahman et al., 2011; Abdul Rahman et al., 2013; Beck et al., 2005; Lau & Kong, 2019; Musso & Schiavo, 2007)
Materials used	(Babu, 2015; Kuebutornye et al., 2018; Nwachukwu & Emoh, 2011)
Complexity of the projects	(Adedokun & Agboola, 2018; Ayegba et al., 2014; Ishtiaq & Jahanzaib, 2017; Kim & Wilemon, 2003; Lebcir & Choudrie, 2011; Luo et al., 2016; Maylor et al., 2008; Wood & Ashton, 2010)
Methods of construction	(Adeleke et al., 2019; Ayegba et al., 2014; Ehsan et al., 2010; Obalola, 2017)
Project duration	(Adeleke et al., 2019; Bing & Tiong, 1999; Ehsan et al., 2010; Obalola, 2017)
Economic requirements	(Adedokun et al., 2019; Adeleke et al., 2019; Lester, 2006; Obalola, 2017)
Special and legal conditions	(Adeleke et al., 2019; Jaafari, 2001; Obalola, 2017)
Contract type	(Bing & Tiong, 1999; Håkansson et al., 2007; Osipova, 2008)
Use of the building	(Adedokun et al., 2019; Ayegba et al., 2014)
Contract value	(Adedokun et al., 2019; Bing & Tiong, 1999)



Research Methodology

- Research Design: Quantitative method
 - Research Respondents: **452**
 - Census Method -

Methods of Data Analysis

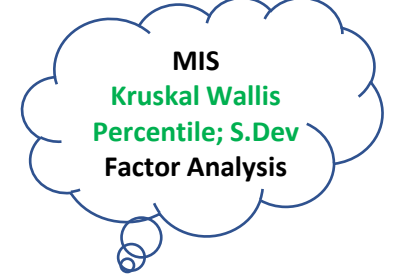


Table 2: Population of the respondents

RESPONDENTS	AAUA	ACEO	FUTA	OSUSTECH	RUGIPOLY	TOTAL
Consultants	150	39	72	18	0	279
Clients	14	12	21	11	14	72
Contractors	68	14	42	8	22	154
Total						495

Table 3: Sampling frame

RESPONDENTS	AAUA	ACEO	FUTA	OSUSTECH	RUGIPOLY	TOTAL
Total	213	59	119	31	30	452

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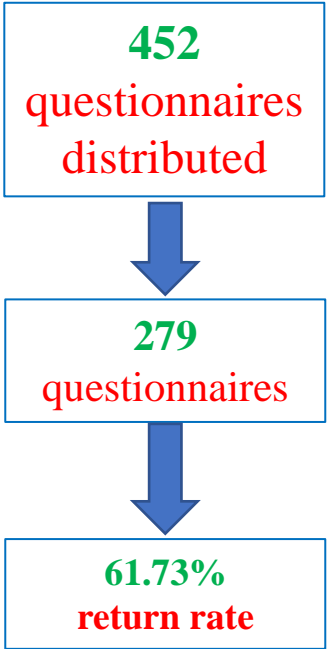
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Data presentation

Table 4:
Demographics of
the respondents

Category	Classification	Frequency	Percent
Profession	Quantity Surveying	96	34.4
	Architecture	42	15.1
	Building	48	17.2
	Structural/Civil Engineering	51	18.3
	Electrical Engineering	27	9.7
	Mechanical Engineering	15	5.4
	Total		279
Years	1 – 5	42	15.1
	6 – 10	69	24.7
	11 – 15	63	22.6
	16 – 20	63	22.6
	Above 21	42	15.1
Mean	13.04	Total	279
Type of Organization	Client organization	69	24.7
	Contracting firm	96	34.4
	Consulting firms	114	40.9
	Total	279	100.00

13years approx.



Data presentation
Cont'd

Table 5: Factors triggering risk in TEBP

Factors	Mean	Std. Deviation	Rank	Asymp . Sig.
1. Financial constraint	4.02	.881	1	.530
2. Location of project	3.96	.974	2	.220
3. Project type	3.91	1.035	3	.720
4. Complexity of the projects (nature of design)	3.90	.986	4	.021
5. Materials used	3.83	1.024	5	.606
6. Contract value	3.75	.913	6	.211
7. Methods of construction	3.75	1.014	7	.628
8. Project duration (time limit)	3.71	1.124	8	.010
9. Economic requirements	3.61	.997	9	.000
10. Special and legal conditions	3.44	1.023	10	.292
11. Use of the building	3.34	1.104	11	.005

7 factors out of 11
Convergent Views



Test Statistics: a) Mean Item Score, b) Kruskal Wallis Test (Grouping Variable – Type of organization)

Aiyegba, Ijigah and Agbo (2014) , Bing and Tiong (1999)

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Table 6: Risk Triggers Rotated Component Matrix

	Component			
	1	2	3	4
Complexity of the project (nature of design)	0.788			
Methods of construction	0.778			
Materials used	0.747			
The use to which building will be put	0.663			
Economic requirements		0.829		
Special & legal conditions		0.741		
Project duration (time limit)		0.674		
Financial constraint		0.543		
Project type			0.836	
Location of project			0.774	
Contract value				0.898
% Variances	21.285	19.720	14.506	12.963
Reliability scores (Cronbach's alpha)	0.753	0.724	0.711	-

1 ✓ Project Technical Factors

2 ✓ Project Requirements & Constraints

3 ✓ Project Characteristics/Attributes

4 ✓ Project Value/Worth

Chetty (2020), Forcada *et al.* (2017), Adedokun *et al.* (2019)

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Conclusion & Recommendation

- existence of factors triggering risks in TEBP, leading to risk occurrence & non-performance in terms of cost , time, quality etc.
- out of the eleven factors, financial constraints, location of the project, and project type are the top three risk triggers in TEBP.
- these findings provide important insights that could inform policies and strategies aimed at enhancing the performance of TEBP.
- adequate provisions for funds should be made by the client while also removing the administrative bottlenecks (constraints) in the release of fund to the contractor.

via speedy processing of payment certificates
by the consultants to enhance cashflow



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Thank you!!!



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