

Exploring Malaysian Landscape Practitioner Standpoint Towards Risk Definition In Landscape Architectural Project

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Abstract

In Malaysia, landscape architectural projects are known for being fast-paced and subjective, making them susceptible to various risks. A project practitioners must comprehensively understand risk perception to manage project risks through a systematic risk management approach effectively. This study aim to define the concept of risk perception from the viewpoint of landscape architecture professionals. The study conducted semi-structured interviews with twenty-four landscape architect professionals in the Klang Valley region of Malaysia. Content and thematic analysis were used to analyze the study's data, which helped identify common themes and patterns in the responses. The study's results reveal that landscape risk perception is deficient, with risks seen as a threat to the project, uncertain, and inevitable. These findings indicate that landscape architecture professionals lack understanding of the potential risks involved in their projects. The study's findings provide valuable insights for project practitioners to evaluate their current risk definition conception and to enable implement the most effective risk management system to manage project risks.

keywords: Risk, Risk Definition, Risk Management, Landscape Architecture, Project

Introduction

Landscape projects in Malaysia are characterized by their dynamic, complex, and fast-tracked nature, with a subjective outcome that poses various challenges and risks to the projects (Godi & Sibelius, 2012). Such risks can impact the project's quality, cost, time, and scope objectives, making it essential to manage them systematically beforehand (Farooq et al., 2018; Loosemore & Cheung, 2015; PMI, 2021). As part of the construction industry, landscape

architectural projects are classified under professional construction services (ASLA, 2019) and require landscape practitioners, who typically possess technical and project management skills, to act as project managers (Muthuveeran et al., 2021). However, various environmental factors, project processes, and stakeholders involved in landscape architectural projects in Malaysia make them prone to risks, such as safety, financial, technical, quality, and environmental risks (Mohit, 2018; Omer et al., 2019; Razi et al., 2020).

Thus, landscape architectural project practitioners must comprehend risk definition and practice effective project management. Nevertheless, a preliminary study by Muthuveeran et al (2022) suggests that Malaysian landscape architecture practitioners have a shallow understanding of risk management in their projects. Therefore, this study aims to define the concept of landscape architectural project risk definition based on the perspective of landscape architecture professionals.

Risk Definition

The Concise Oxford English Dictionary defines risk as "*a situation where there is exposure to danger, harm, or loss.*" At the same time, the Cambridge Dictionary defines it as "*possible danger or loss or injury.*" Although risk has been extensively studied, it has no universal definition. Different stakeholders have contributed to developing and broadening the definition of risk over time based on their research and understanding of the concept. This study reviews definitions of risk from various sources, including international or national standards, national statutes, government, other organizations, and professional bodies or societies, as outlined in Table 1.

Table 1

Risk definition and identified keywords

Definition of Risk	Identified Keywords	Source
International and National Standards		
"...combination of the probability of an event and its consequence"	Probability; consequence	ISO/IEC/IEEE (2006), PD ISO/IEC Guide 73:2002 (2002)
"...likelihood of an event occurring that will have an impact on objectives"	Likelihood; impact; objective	PAS 99:2006 (2012)
"...chance of something happening that will have an impact upon objectives, measured in terms of likelihood and consequences"	Chance; impact; objectives; likelihood; consequences	PD 6668:2000 (2000)
"...effect of uncertainty on objectives"	Uncertainty; objective	ISO 31000:2009 (2009), ISO 31000:2018 (2018)
"...combination of the probability or frequency of occurrence of a defined threat or opportunity and the magnitude of the consequences of the occurrence"	Probability; threat; opportunity; consequences	BS 6079-3:2000 (2000)

<i>"...uncertainty inherent in plans and the possibility of something happening (i.e. a contingency) that can affect the prospects of achieving business or project goals"</i>	Uncertainty; possibility; affect goals	BS (2000)	6079-3:2000
<i>"...the chance of something happening that will have an impact upon objectives. It is measured in terms of consequences and likelihood"</i>	Chance; impact; objectives; likelihood; consequences	AS/NZS (1999), Gaidow and Boey (2005)	4360:1999
<i>"...the chance of injury or loss as defined as a measure of the probability and severity of an adverse effect to health, property, the environment, or other things of value"</i>	Injury; loss; probability; severity; adverse effect	CAN/CSA-Q850-97 (2002)	
Professional Bodies and Societies			
<i>"...an uncertain event or set of circumstances that should it or they occur have an effect on the achievement of one or more of the project objectives"</i>	Uncertain; objectives	effect; APM (2010, 2012)	
<i>"...an uncertain event or set of events that, should it occur, will have an effect on the achievement of objectives. A risk is measured by a combination of the probability of a perceived threat or opportunity occurring, and the magnitude of its impact on objectives"</i>	Uncertain; objectives; probability; threat; opportunity; impact	effect; OGC (2007)	
<i>"...an uncertain event that affects the objective of a project that is about to start and includes results and extent of influence it may cause"</i>	Uncertain; objective; influence	effect; PMAJ (2005b)	
<i>"...an uncertain event or condition that if it occurs, has a positive or negative effect on the project"</i>	Uncertain; negative	positive; GAPPS (2007)	
<i>"An uncertain event or condition that, if it occurs, has a positive or negative effect on a project's objectives"</i>	Uncertain; negative; objectives	positive; effect; PMI (2017)	
<i>"the implications of uncertainty about the level of project performance achievable"</i>	Implication; uncertainty; performance	IAPPM (2008)	
<i>"...factors that might adversely affect project outcomes"</i>	Factors; effect; outcomes	adverse AIPM (2008)	
<i>"...the combination of the probability of an event and its consequences"</i>	Probability; consequences	PD ISO/IEC Guide 73:2002 (2002)	
<i>"The likelihood of an event, hazard, threat, or situation occurring and its</i>	Likelihood; threat;	hazard; situation; IEEE Std 1540-2001 (2001)	

<i>undesirable consequences; a potential problem</i>	undesirable; consequences; problems	
<i>"...is the possibility of suffering loss"</i>	Possibility; loss	SEI (1994)
<i>"...the potential that a given threat will exploit vulnerabilities of an asset or group of assets to cause loss and/or damage to the assets; usually measured by a combination of impact and probability of occurrence"</i>	Potential; threat; vulnerability; loss/damage; impact; probability	ITGI (2007)

The reviewed definitions of risk share some commonalities, with specific keywords commonly used across various sources. These keywords include probability or likelihood, impact or effect, uncertain or uncertain, and threat or negative words such as harm, danger, consequences, and opportunity. The reviewed definitions empower project practitioners to select the most suitable definition for their organizational context. Different organizations issue these definitions to provide different perspectives for better decision-making. Risk is the probability or likelihood of an event occurring, and its potential consequences can be favorable or unfavorable. Project practitioners can choose the most appropriate definition for their specific organizational context. Although there are some variations in the wording, most definitions include the concepts of probability and consequences, uncertainty, and their effects on objectives. Some definitions also include the potential for both positive and negative outcomes and the consideration of threats and vulnerabilities. Overall, these definitions help organizations understand and manage risk systematically and effectively.

Methodology

An exploratory case analysis was used, which involved four stages: a preliminary study, data collection, analysis, and interpretation. The first stage was a preliminary study, which included conducting a background study on the research's history, needs, gaps, and goals. The second stage involved conducting semi-structured interviews with twenty-four professional landscape practitioners in the Klang Valley. Open-ended questions allowed for flexible and unrestricted responses (McNamara, 2017). The interviewees were professional landscape practitioners who held managerial and decision-making positions in their current organization, had over ten years of experience in the sector, and had been involved in various project sizes, locations, and scopes throughout the entire cycle of landscape architectural projects in the urban region of Klang Valley, Malaysia. Each interviewee was assigned an alphanumeric code from L01 to L24 to ensure anonymity. The information of the interviewees is shown in Table 2. The third stage involved collecting audio recordings and project documentation, which were transcribed and analyzed using *ATLAS.ti 9* qualitative research software. Content analysis was used to identify and describe the codes, categories, and topics (Mayring, 2014). The thematic analysis was conducted to create thematic maps linking various themes and determining data patterns (Maguire & Delahunt, 2017). Finally, the study discovered the mapped and reported interpretations that exploring risk definition from the landscape practitioners standpoint in Malaysian landscape architecture projects.

Table 2
Interviewees' information

Interviewees	Interviewees' Position	Interviewees' Background		Interviewees' Background		Organisation
		Education	^a Years of experience	^b Years Established	^c Headcount Size	^d Total Ongoing Project
L01	Director	Abroad	Expert	Established	Small	Medium
L02	Proj. Director	Local	Intermediate	Established	Small	Medium
L03	Director	Abroad	Expert	Established	Small	High
L04	Director	Local	Expert	Established	Small	Medium
L05	Principal	Local	Intermediate	New	Small	Low
L06	Director	Local	Expert	Established	Small	Low
L07	Director	Local	Intermediate	New	Micro	Medium
L08	Director	Local	Intermediate	New	Micro	Low
L09	Director	Abroad	Expert	New	Small	Low
L10	Director	Abroad	Expert	Intermediate	Small	Medium
L11	Associates	Local	Intermediate	Established	Small	Medium
L12	Head Contract	Local	Intermediate	New	Small	Medium
L13	Director	Abroad	Expert	Intermediate	Small	Low
L14	Director	Local	Intermediate	New	Small	Medium
L15	Director	Local	Expert	Established	Small	Medium
L16	Director	Local	Intermediate	Intermediate	Micro	Medium
L17	Principal	Local	Intermediate	Intermediate	Small	Medium
L18	Director	Local	Intermediate	New	Micro	Low
L19	Proj. Director	Abroad	Expert	Established	Small	Medium
L20	Director	Local	Intermediate	New	Small	Medium
L21	Director	Abroad	Expert	Established	Small	Medium
L22	M.D.	Local	Expert	Established	Small	Medium
L23	Director	Local	Intermediate	New	Micro	Low
L24	Director	Local	Intermediate	Intermediate	Small	Medium

Notes:

^a *Beginner (< 10 years) / Intermediate (10 < 20 years) / Expert (> 20 years)*

^b *New (< 10 years) / Intermediate (10 < 20 years) / Established (> 20 years)*

^c *Micro (< 5) / Small (5 < 30) / Medium (30 < 75): Malaysia's Small and Medium Enterprises (SME) classification*

^d *Low (< 20) / Medium (20 < 40) / High (> 40)*

Finding

The research investigated the current understanding of risk definition. Interviewees showed a show card which illustrates the definition of risk by various standards and institutions. Interviewees were requested to express their understanding and perception of risk in landscape architectural projects.

The content analysis finding presents the viewpoints of several interviewees regarding their understanding of risk definition in the context of a project, depict in Figure 1. L15 and L18 anticipate potential issues, which they perceive as a risk. L05 points out that poor design and budget overruns can be a source of risk. On the other hand, L02, L03, and L14 believe that not meeting stakeholders' expectations is a risk. L20, L21, and L23 associate risk with negative consequences, while L22 views challenges as risks. L12 and L17 consider problematic project

activities as risks, while L06 and L10 relate risk to outcomes that lead to financial and operational losses. However, L22 views risk as an opportunity and suggests that new designs can be a trademark for a business profile.

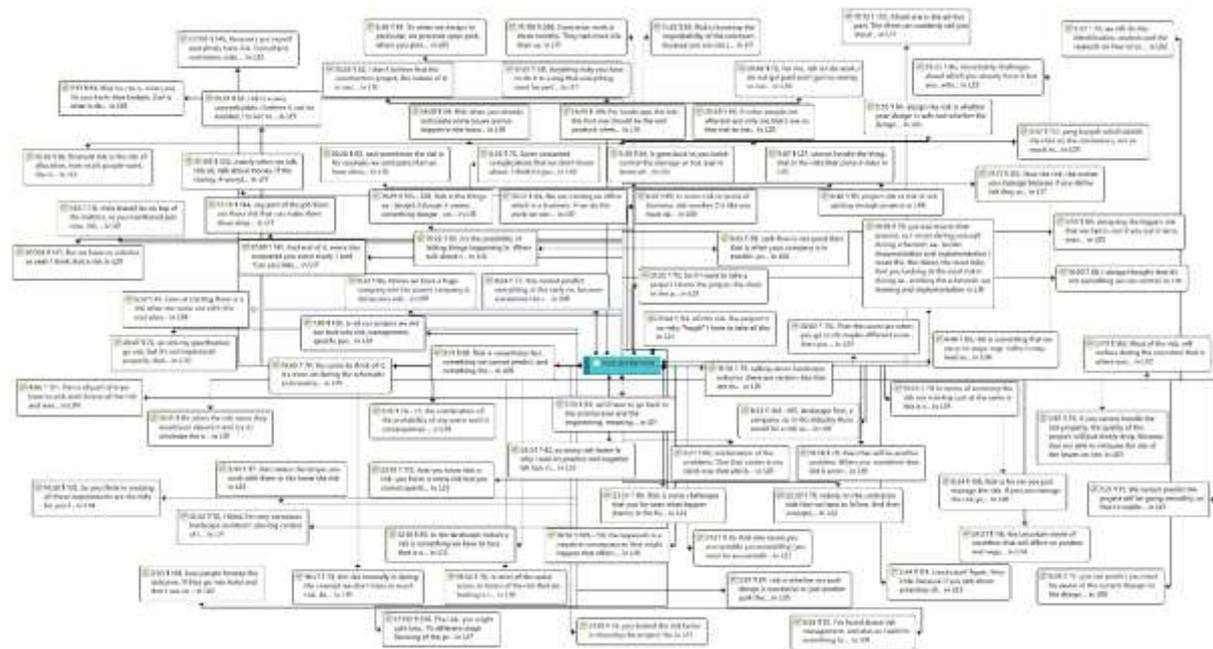


Figure 2. Content analysis – risk definition

Interviewees L09, L15, L21, and L23, think that risk is related to uncertainty and can result from design and market conditions changes. L11 refers to the probability of unknown events, while L17 describes uncertainty during the project's conception stage. L23 emphasizes the subjective nature of risk perception, while L24 acknowledges that risk can positively and negatively affect the project. L07 and L08 believe that risk can be challenging to predict and can occur suddenly due to external factors. L09 and L15 consider risk unpredictable regarding time, budget, and quality output, while L17 suggests that risks can be ad hoc, even in well-planned and managed projects.

Interviewees L12, L15, and L22 admit that risk is unavoidable. They believe that it is controllable. L05, L08, and L21 suggest that risk can be managed through the project manager's experience and knowledge, while L04 and L15 believe that professional handling can make risks manageable. L19 suggests that risk can be predicted from the earliest project conception, while L10 and L16 believe that the impact of risk can be reduced, even if it cannot be prevented. L06 and L17 believe that risks vary based on different project environments. At the same time, L01, L03, L05, L14, and L21 suggest that hazard risk can arise from various sources such as environment, technology, socio-political, financial, and operational factors.

Interviewees L03, L17, L20, L21, and L22, consider operational risks the most diverse. However, L19 acknowledges that risks can originate from internal and external sources. L11, L13, L17, L19, and L20 suggest that risks are prevalent across various project activities and scopes, while L01, L08, L09, L19, and L22 believe multiple sources from both human and non-human factors can cause risk. L22 suggests that one risk can trigger a chain reaction of other risks. Additionally, L20 notes that the same risk can have different impacts. The impact of risk can be mitigated based on the project team's experience and tenure of working with the client, according to L03. L08 and L10 suggest that the magnitude and scope of the effect of

risk vary. Finally, many interviewees note that risk is present throughout the project lifecycle and can extend beyond it. Some projects that meet the objective may become obsolete or fail in the future, as noted by L05.

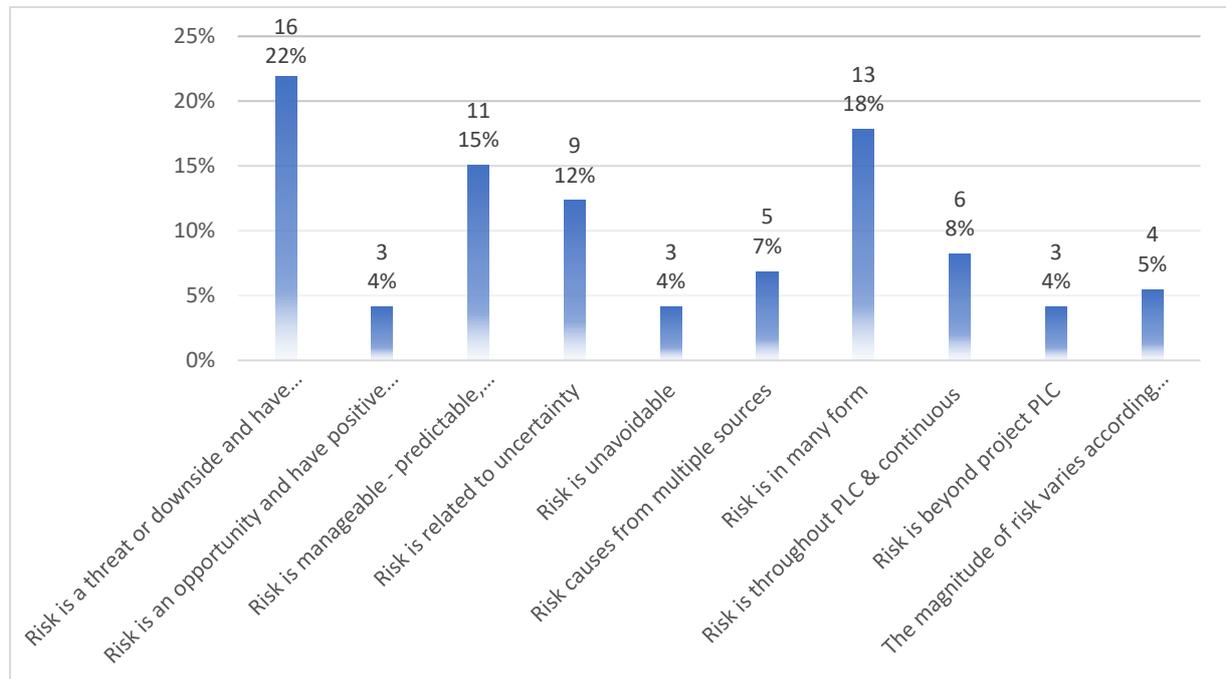


Figure 2. Thematic analysis – risk definition

The thematic analysis finding categorize of the interviewees feedback from various interviewees on their understanding of risk in the project context, depict in Figure 2. The interviewees have varying risk perceptions, including poor design, budget overruns, not meeting stakeholder expectations, negative consequences, and challenges. Many interviewees associate risk with uncertainty and unpredictability, and several believe that risks can be controlled through professional handling and the project manager's experience and knowledge. Operational risks are noted as being the most varied and can come from internal and external sources. The impact of risk can vary based on its size and scope, and risk can happen throughout the project lifecycle and extend beyond it.

Conclusion

The level of understanding among landscape architectural project practitioners concerning risk definition is deficient. Practitioners tend to view risk as a negative factor that threatens the success of their projects rather than as an opportunity for positive outcomes. This perception often leads to a reluctance to embrace risks and a lack of preparedness for unexpected events that may occur during the project's lifecycle. However, this study's definition of risk contrasts with the widely accepted definitions of risk, which highlight the likelihood or probability of an event occurring and the resulting impact on the project, whether positive or negative. In landscape architecture, risk can be defined as the possibility of harm or loss arising from design or implementation failures in a landscape architectural project. This concept encompasses hazards such as natural disasters, including flooding, landslides, or wildfires, and risks related to safety and functional aspects of the landscape design, such as inadequate drainage or unsuitable plant selections. The perceived threat of risks is due to the fast-tracked nature of these projects, which allows little margin for error.

Additionally, the uncertainty of risks emphasizes the need for landscape architecture professionals to be adaptable and flexible in their approach to risk management.

Landscape practitioners need to have a more nuanced and positive perception of risk. By acknowledging that risk is inherent in any project, landscape practitioners can develop a robust risk management system that allows for flexible responses to unexpected events and enhances the project's overall success. The study's findings provide valuable insights for project practitioners to evaluate their current risk perception practices and implement the most effective risk management system to manage project risks. Effective risk management in landscape architecture requires careful analysis, planning, and implementation of design strategies that minimize potential risks and ensure the safety and sustainability of the landscape. By comprehending the potential risks associated with landscape architectural projects and adopting a systematic risk management approach, project practitioners can decrease the probability of adverse outcomes and ensure project success.

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