

Title: Voice behaviour in complex project organising

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Summary: Research has highlighted the importance of teaming and voice behaviour in projects. Although interest in this topic has increased there remains a lack of understanding of voice behaviour in complex project organising. Therefore, in this paper we aim to develop and validate a model to examine the impact of project complexities on voice behaviour.

Track: Project experiences

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Voice Behaviour in Complex Project Organising

Introduction

Recent research has highlighted that making sense of project complexity is one of the key challenges for successfully managing large-scale projects (Lenfle and Loch, 2017). Project complexity refers to the level of difficulty involved in completing a project. This can be determined in multiple ways, such as breadth of scope, stakeholders involved, required resources, level of innovation, or timeline.

While complex projects can contribute to important innovations, they can also take on significant risks. Therefore, effective project organising is crucial for ensuring successful completion and while project management processes and procedures are important, it is increasingly recognised that it is the behaviours of leaders and teams which make a difference in project performance (Dasi et al., 2021).

In this context, the concept of *teaming* is relevant as a potential contributor to improving the organisation and management of complex projects (Edmondson and Harvey, 2018). Teaming relies on *voice behaviour* -the act of speaking up and communicating ideas or concerns about work-related issues with the intent to improve organisational performance (Morrison, 2011). Research has highlighted the importance of teaming and voice behaviour in projects (Keegan, 2023) and although interest in this topic has increased (Ekrot et al., 2016; Jiang et al., 2023) there remains a lack of understanding of voice behaviour in complex project organising. Therefore, we aim to develop and present a model to examine the impact of project complexity on voice behaviour.

This paper begins with a brief overview of voice behaviour from its definition to how it is measured, followed by an overview of voice behaviour in project organising. We then review project complexity frameworks, leading to a proposed research model. The literature lacks a sufficient model for measuring project complexity, so we also propose a method for developing and validating a new measurement model of project complexity. The paper concludes with our proposed methodology and the potential contribution of this research.

Voice Behaviour

Voice behaviour can be characterised as “constructive, change-oriented communication intended to improve the situation” (Van Dyne et al., 2003), which helps organisations identify their weaknesses and mistakes (Bai et al., 2019). Tedone and Bruk-Lee (2022) identify three distinct characteristics from the extant literature: it is a *verbal* action taken by employees (typically between the employee and a supervisor); it is a *choice* – the result of a cognitive decision to speak up; and it is *constructive* - free from complaining about the job or the organisation, and instead focused on finding solutions, seeking help and fostering change. It is an extra-role behaviour, given that it is not contained within job descriptions, is not recognised by formal reward systems, and is not a source of punitive consequences when not performed (Morrison, 2014; Van Dyne and LePine, 1998).

The essence of voice behaviour research lies in why employees opt to express or withhold valuable insights, requiring a delicate balance between perceived benefits and risks (Ashford et al., 1998; Detert and Burris, 2007; Morrison and Milliken, 2000). Two critical factors influence this choice: the perceived efficacy of voice — individuals' belief in the impact of their contributions (Milliken et al., 2003; Pinder and Harlos, 2001) — and the perceived safety of voice, involving the risk assessment of potential negative consequences, including damage to reputation and career (Milliken et al., 2003; Morrison and Milliken, 2000). Concerns about repercussions, both from authority figures and peers, significantly shape the decision to speak up or remain silent (Kish-Gephart et al., 2009; Pinder and Harlos, 2001; LePine and Van Dyne, 1998).

Morrison et al. (2011) developed a method to measure the perceived efficacy and safety of voice, leveraging a set of six behaviours identified by Van Dyne and LePine (1998); these measures are shown in Table 1. This approach involves surveying respondents on their confidence in effectively engaging

in specific behaviours using a 7-point agree/disagree scale. Additionally, they assess how safe individuals feel when performing these behaviours. Prior research has shown high reliability of self-reported voice behaviour through this scale (Botero & Van Dyne, 2009: $\alpha = .90$; Xiong et al. 2019: $\alpha = .88$, Prouska et al., 2022: $\alpha = .87$ & $.89$; Kundi et al., 2023: $\alpha = .87$). These two factors significantly shape the dynamic between the intrinsic motivation to contribute to the collective good and the manifestation of actual voice behaviour (Ashford et al., 1998; Detert and Burris, 2007; Morrison and Milliken, 2000), as illustrated in figure 1.

Voice behaviour is recognised for its considerable advantages to organisations, groups, and individuals, enhancing decision-making, error detection, and learning, while silence often leads to detrimental effects (Argyris and Schön, 1997; Enz and Schwenk, 1991; Morrison and Milliken, 2000; Parke et al., 2022). It is essential for teamwork, sharing knowledge, and group decisions (LePine and Van Dyne, 1998). However, voicing concerns may risk individual repercussions, like reputational damage or sanctions (Miceli et al., 2008; Milliken et al., 2003; Pinder and Harlos, 2001), whereas silence can reduce job satisfaction and commitment (Vakola and Bouradas, 2005).

Table 1. Measures of voice behaviour (Van Dyne and LePine, 1998).

1. I develop and make recommendations to my supervisor concerning issues that affect my work.
2. I speak up and encourage others in my work unit to get involved in issues that affect our work.
3. I communicate my opinions about work issues to others in my work unit, even if their opinions are different and they disagree with me.
4. I keep well informed about issues at work where my opinion can be useful.
5. I get involved in issues that affect the quality of life in my work unit.
6. I speak up to my supervisor with ideas for new projects or changes in procedures at work

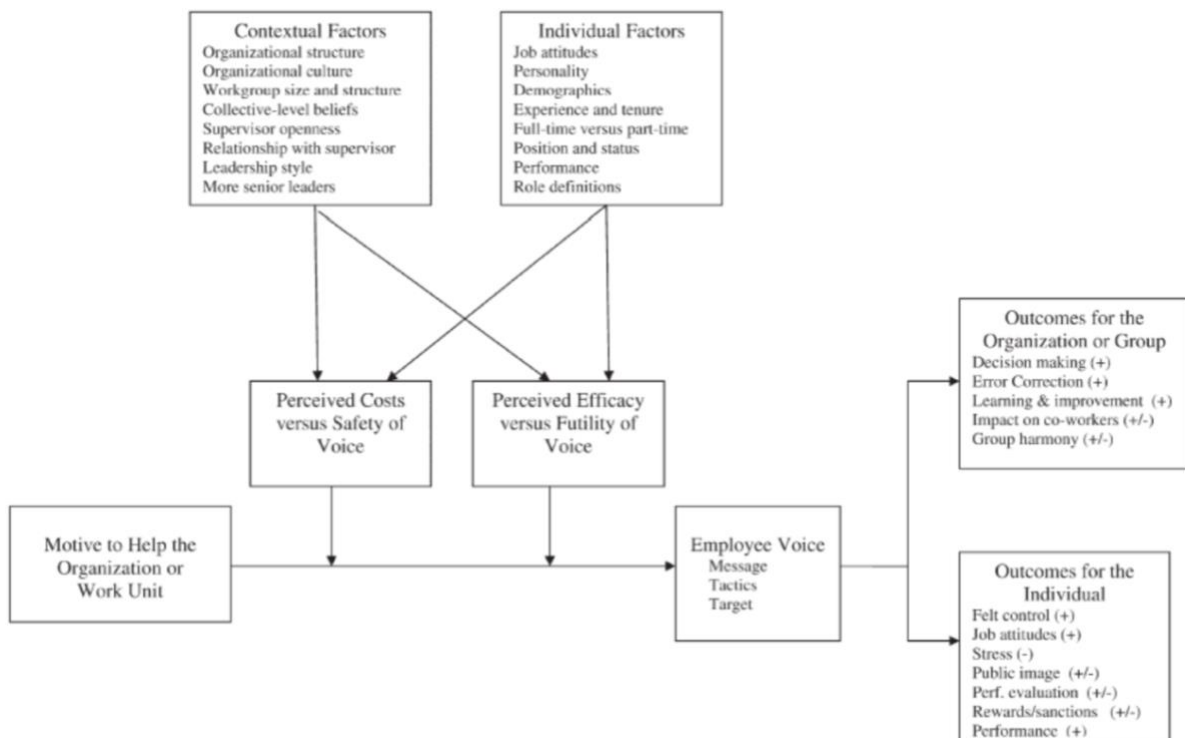


Figure 1. Model of predicting voice behaviour (Morrison, 2011)

Voice Behaviour in Project Organising

Research on voice behaviour within project organising has primarily explored the factors influencing project managers and team members to speak up or remain silent. Ekrot et al. (2016) discovered that both situational and personal factors, such as organisational practices and individual self-esteem, play a crucial role in shaping project managers' voice behaviour.

Similarly, Jiang et al. (2023) found that inclusive leadership significantly drives voice behaviour among project team members, with a sense of unity and belonging mediating this relationship and team coordination serving as a key enhancer. Wang et al. (2023) identified project characteristics and relationship quality as significant predictors of promotive and, to a lesser extent, prohibitive team voice behaviour. With regards to the consequences of voice behaviour, Kaufmann et al. (2020) and Zaman et al. (2021) illustrated voice behaviour's positive impact on organisational agility and project success, respectively, while Kock et al. (2024) linked voice behaviour with improved management quality and project portfolio decisions. These findings collectively highlight the multifaceted impacts of voice behaviour on project management outcomes.

Measuring Voice Behaviour

There is debate in the literature as to whether to measure voice behaviour as a singular concept. Liang et al. (2012) showed a significant differentiation between promotive and prohibitive voice behaviour; their measures are listed in Table 2. Promotive voice describes the identification of opportunities for organisational development and progress, such as innovative ideas or solutions, improvements to processes, or new ways of working. Prohibitive voice is distinct from this, focussing rather on identifying problems, potential risks, or unethical practices within the organisation that could prove harmful to its integrity or performance. Typically, prohibitive voice is the riskier, given its potential for negative outcomes in some cases (Hassan, 2015). Several studies found different results when examining whether certain antecedents are predictors of these two distinct outcomes (e.g. an employee's dispositional inclination to be approach or avoidance-orientated in Kakkar et al, 2016; or promotion of prevention-focused in Lin and Johnson, 2015). We share these authors' assertion that it is unreliable to measure voice behaviour as a singular concept.

Table 2. Measures of promotive and prohibitive voice (Liang et al. 2012)

Construct	Measure
Promotive voice	• Proactively develop and make suggestions for issues that may influence the unit • Proactively suggest new projects which are beneficial to the work unit • Raise suggestions to improve the unit's working procedure • Proactively voice out constructive suggestions that help the unit reach its goals • Make constructive suggestions to improve the unit's operation
Prohibitive voice	• Advise other colleagues against undesirable behaviours that would hamper job performance • Speak up honestly with problems that might cause serious loss to the work unit, even when/though dissenting opinions exist • Dare to voice out opinions on things that might affect efficiency in the work unit, even if that would embarrass others • Dare to point out problems when they appear in the unit, even if that would hamper relationships with other colleagues • Proactively report coordination problems in the workplace to the management.

Morrison (2022), in a reflective review of voice behaviour research in the preceding decade, notes the prevalence of the measures of Van Dyne and LePine (1998) and Liang et al. (2012) for measuring perceived voice efficacy and safety, and promotive and prohibitive voice, respectively.

However, research on voice behaviour has extensively focused on organisational and individual factors, often overlooking the impact of a project's nature or complexity. As Keegan (2023:260) states “Perhaps above all other issues, the success of teaming relies on project professionals being willing and able to speak up and voice their concerns during the development and execution of complex projects”. Studies highlight the importance of organisational practices, self-perception, and commitment in shaping voice behaviour, yet the distinct challenges and opportunities presented by project complexity remain underexplored.

Project Complexities

There is no agreed-upon definition of project complexity in the literature; Browning (2023:26) states that it is a “catch-all descriptor for project challenges”. Broadly, project complexity refers to the perceived level of difficulty involved in shaping and delivering a project. Several authors have helped develop our understanding of project complexity. Most notably, Cicmil et al. (2009) identify two approaches to project complexity research: ‘*complexity in projects*’ to describe research that analyses projects through complexity theory and ‘*complexity of projects*’ to describe research that highlights the characteristics of projects and how managers and teams perceive and respond to what they call complexity. This research has provided a foundation for subsequent studies *in* and *of* project complexity (e.g. Hartono, 2018; Diorgenes and Meyer, 2020). Taking a ‘*complexity of projects*’ perspective, Geraldi et al. (2011) provide the most comprehensive chronological review of how the concept, through the first appearance of project complexity frameworks, has evolved. From this review, the authors develop a complexity framework and identify five complexity dimensions: Socio-political, pace, dynamic, uncertainty and structural complexity. Where, structural complexity refers to size, number of components or element, their heterogeneity and interdependencies; uncertainty refers to perceived lack of knowledge or information about the future state of the elements and interactions of the 'system' being managed; dynamics refers to changes throughout the project lifecycle; pace refers to the temporal characteristics of a project, the rate or speed at which a project should be delivered; and socio-political refers to the behaviours and interactions of internal and external stakeholders.

Building on this work and through case study research Maylor et al. (2013) developed a complexity assessment tool (CAT) to facilitate the identification of project complexities. The tool consists of 32 statements that capture three dimensions of complexity: structural, sociopolitical and emergent. The authors include Geraldi's pace within structural complexity and combine uncertainty and dynamics into emergent complexity. The CAT provides a diagrammatic view of project practitioner's perceptions of project complexities and is used to encourage dialogue about how to proactively manage these. Maylor and Turner (2017) review and summarise additional contributions on project complexities and state that no additional concepts have been added since Geraldi et al's (2011) comprehensive review. They retain the three complexity dimensions of structural, sociopolitical and emergent and use Maylor et al's (2013) CAT to investigate managerial responses to complexity.

In addition, a range of complexity assessment tools have also been developed by private and public organisations each identifying a range of factors, attributes, and indicators of project complexity with the purpose of improving project delivery. For example, the UK's National Audit Office Delivery Environment Complexity Analytic (DECA) tool (NAO, 2022) identifies 12 factors that influence the complexity of project delivery; along similar lines the American Construction Industry Institute (CII) developed a guide for assessing and managing project complexity based on 37 indicators across 11 categories and incorporated these into a Project Complexity Assessment and Management (PCAM) process (Anderson et al., 2016). There have also been attempts to assess project complexity by individual organisations, by project sector and by a range of consultancy organisations. For example Andrews (2015) defines project complexity based on the United States Department of Energy's evaluation of seven project attributes to help improve project delivery; while Damasiotis and Fitsilis (2015) present a Project Management Complexity Assessment Tool (PMCAT) used for assessing the

complexity of software projects. Overall, these tools aim to help practitioners assess the perceived complexity of a project to facilitate a proactive approach to managing project delivery. However, a statistically validated measurement model of project complexity has yet to be developed.

We therefore aim to develop and validate a model complexities of projects and then examine the impact of project complexities on voice behaviour.

Proposed Method

Results from previous studies suggest there is a significant relationship between perceived efficacy and safety of voice, and promotive and prohibitive voice behaviour. Yet what remains unexplored is how varying degrees of perceived project complexity might affect that relationship. Thus, our proposed hypotheses are shown conceptually in Figure 3 and can be summarised as follows: 1) project complexity moderates the relationship between perceived efficacy of voice and actual voice behaviour, and 2) project complexity moderates the relationship between perceived safety of voice and actual voice behaviour. The individual hypotheses are listed in Table 3.

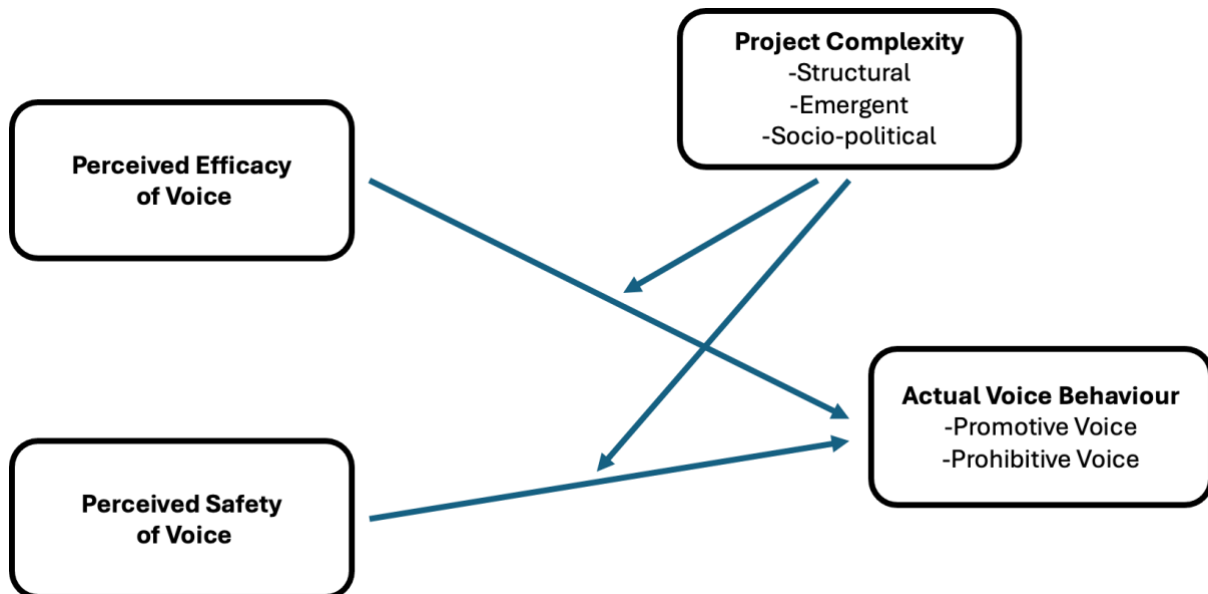


Figure 3. Conceptual moderation model

Table 3. Proposed hypotheses

H1. Different types of project complexity will differentially moderate the relationship between the perceived efficacy of voice and actual promotive voice behaviour.	
1a.	Structural complexity of projects will moderate the relationship between perceived efficacy of voice and actual promotive voice behaviour on projects.
1b.	Emergent complexity of projects will moderate the relationship between perceived efficacy of voice and actual promotive voice behaviour on projects.
1c.	Socio-political complexity of projects will moderate the relationship between perceived efficacy of voice and actual promotive voice behaviour on projects.
H2. Different types of project complexity will differentially moderate the relationship between perceived efficacy of voice and actual prohibitive voice behaviour.	
2a.	Structural complexity of projects will moderate the relationship between perceived efficacy of voice and actual prohibitive voice behaviour on projects.

2b.	Emergent complexity of projects will moderate the relationship between perceived efficacy of voice and actual prohibitive voice behaviour on projects.
2c.	Socio-political complexity of projects will moderate the relationship between perceived efficacy of voice and promotive voice actual prohibitive on projects.
H3. Different types of project complexity will differentially moderate the relationship between perceived safety of voice and actual promotive voice behaviour.	
3a.	Structural complexity of projects will moderate the relationship between perceived safety of voice and actual promotive voice behaviour on projects.
3b.	Emergent complexity of projects will moderate the relationship between perceived safety of voice and actual promotive voice behaviour on projects.
3c.	Socio-political complexity of projects will moderate the relationship between perceived safety of voice and actual promotive voice behaviour on projects.
H4. Different types of project complexity will differentially moderate the relationship between perceived safety of voice and actual prohibitive voice behaviour.	
4a.	Structural complexity of projects will moderate the relationship between perceived safety of voice and actual prohibitive voice behaviour on projects.
4b.	Emergent complexity of projects will moderate the relationship between perceived safety of voice and actual prohibitive voice behaviour on projects.
4c.	Socio-political complexity of projects will moderate the relationship between perceived safety of voice and promotive voice actual prohibitive on projects.

Our first aim is to develop and validate a measurement model for project complexity, based on Maylor et al.'s (2013) CAT as this has been developed from a thorough review of academic literature on project complexity and the statements in the tool have been verified across a range of project settings. In this way the CAT addresses aspects of rigour and relevance which are important in project organising research (Pinto, 2022). Best practices will be followed to develop scales (see DeVellis, 2017) that can quantitatively capture the varying degrees of structural, emergent and socio-political complexity. A team of expert project practitioners and academics will collaborate in generating and selecting items for a pilot survey. The survey will be piloted on a sample of project professionals who are currently working full-time in a project team; using Prolific.com, sample participants can be screened to ensure they meet these demographic requirements. Results will be analysed using confirmatory factor analysis, exploring the validity and reliability of each measure.

Once the new measures for project complexity have been validated, we will investigate the relationship between project complexity and voice behaviour as outlined in Table 3, using Morrison's (2011) method of measuring perceived efficacy and safety of voice, and Liang et al.'s (2012) measures of promotive and prohibitive voice. We aim to sample project professionals in a cross sector of project-based organisations, beginning with a smaller sample for a pilot study, and a larger sample for the final study. As demographics may influence an employee's voice behaviour (e.g. Burris et al., 2008), control variables such as education level, organisational tenure, position, and job satisfaction may be included. Analysis will include structural equation modelling, investigating whether the elements of project complexity have a moderating effect on the relationships as proposed.

Potential Contribution

The potential contribution of this work is two-fold. First, a measurement model to quantitatively measure project complexity. This will enable and standardise future research in an area that is gaining increased attention. Secondly, we seek to understand the impact of project complexity on voice

behaviour in projects. We expect different types of complexity to have varying degrees of effect on voice behaviour, which may contribute significantly to our understanding and managing of complex projects.

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