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Governance and governmentality in projects: Profiles and relationships with success

Abstract

This study investigates the role of governance and governmentality in project and organizational success. Results from 121 responses to a worldwide survey provided for profiling of different governance and governmentality approaches at different levels of success, and quantitative investigation of the relationships between them. Results support the model of governmentality being positively related with both project level and organizational level success. Governance as structural context variable moderates this relationship. Moderation takes place at the project level through the governance mechanisms (trust and control) influencing the strength of the relationship, and at the organizational level through governance complexity, measured as the number of governance institutions involved in projects, influencing the form of the relationship. Contingency theory serves as a theoretical lens to interpret and discuss the findings, as well as theoretical and managerial implications.

Keywords: project governance, governance of projects, governmentality, success, projectification

Introduction

The relationship between governance and governmentality of projects with their success has recently caught the attention of researchers. Governance in the realm of projects is often defined as the value system, structures, processes and policies that allow projects to achieve organizational objectives (Müller, 2016). Governance differs by organizational levels (Turner, 1999), and recent work distinguishes between *project governance* as the governance of a single project, and *governance of projects* as the governance of groups of projects, such as programs or portfolios (e.g. Biesenthal & Wilden, 2014). Foucault (1991) explains how these levels of governance are linked through the concept of governmentality, which is defined in the realm

of projects as *the mentalities, rationalities, and ways of interaction, chosen by the governance roles to implement, maintain, and change the governance structure* (Müller, 2016, p20). Governmentality expresses itself in the ways governing institutions interact with those that are governed (Barthes, 2013). OECD (2004) and project management researchers claim inseparability of the two concepts, and suggest that governance should not be discussed without governmentality as its integrating mechanism (e.g. Müller, Pemsel & Shao, 2014).

Approaches to governance and governmentality

Earlier research investigated the particularities of governance approaches for projects of different types, sizes, etc., which showed large variety in governance approaches in and for projects (e.g. Miller & Hobbs, 2005). This patchwork of studies uncovered issues like a) no common framework to capture, outline and compare the different governance approaches, because b) most studies invented their own governance dimensions, instead of using already established concepts from existing studies, and c) often ignored the relation of governance with project and organizational success.

The aim of the present study is to address these issues by using a conceptual framework for governance and governmentality for projects recently developed and published by Müller, Zhai, Wang, and Shao (2016). Their profiling tool provides dimensions for qualitatively measuring governance and governmentality. The profiles derived from their study are not generalizable, as they are based on eight case studies and collected with the intent to identify the largest variety in possible measures in order to develop measurement dimensions and scales.

The present paper tests and applies this tool by quantitatively operationalizing the formerly qualitative scales, validate them through a worldwide survey, derive patterns of governance approaches, and assess the impact of governance and governmentality on success at project and organizational level.

Through this, we measure, quantify and profile different governance and governmentality approaches and identify those dimensions that correlate with success at both the project and the organizational level, using compounds of soft and hard measures of success. To address the issues outlined above we pose the following research questions:

RQ1: What are the patterns of approaches to governance and governmentality in organizations?

RQ2: How do the dimensions of these patterns relate to project success and organizational success?

The Unit of Analysis is the project-based part of an organization. The study takes a Critical Realism perspective, which implies that the study results provide for some often found, but not automatically generalizable findings (Bhaskar, 2016).

Data was collected through a worldwide, web-based questionnaire. Subsequent data analysis controlled for influences by demographic parameters, project specifics, and the level of projectification of the organization (in the sense of Midler, 1995). The questionnaire was newly developed, based on the tool by Müller, Zhai, Wang and Shao (2016).

We chose a contingency theory perspective (Donaldson, 2001), and used existing studies to define governance as structural context (i.e. contingency variable), which may influence the relationship between governmentality and success.

We developed scales for existing governance and governmentality concepts, based on general management literature and earlier studies. This extends the predominantly normative results of earlier studies into a relativistic perspective, which provides academics with new avenues for theory development. Practitioners benefit from the identification of potential success factors and the identification of profiles of governance and governmentality at different levels of project and organizational success.

The paper is structured the following way: the next section reviews the most relevant literature, which is followed by the study's methodology, data analysis, and discussion. The paper finishes with conclusions and answers to the research questions, and the Appendix provides the questionnaire.

Literature review

We found only one existing framework that integrates and assesses governance and governmentality for projects and uses a majority of dimensions that relate to the corporate governance and governmentality literature. Hence, a framework that allows to connect project governance level theory development to governance theories of the project's parent organization. This framework, developed by Müller, Zhai et al (2016) is based on eight qualitative case studies in Europe and Asia, and structured into three main categories: Governmentality, governance, and projectification. Governmentality is assessed along the dimensions of approach and precept. *Approach* refers to authoritative, liberal or neo-liberal governmentality (as described by Dean, 2010). *Precept* was a newly identified dimension that reflects the dominant theme in the interaction between governors (such as steering committees) and their project managers. It measures the preference of governors for their managers to either

“follow the process”, maximize the project’s wellbeing (in terms of both short and long term results), or the adherence to corporate values. Governance includes the dimensions for *sovereignty* of projects, the preferred *governance mechanisms* and the number of *governance institutions*. A control variable in form of *projectification* indicates possible differences in approaches based on the level project management thinking pervades the organization (in the sense of Midler, 1995).

Governmentality

Governmentality (the combination of the words governance and mentality) was invented by the French semiologist Roland Barthes (2013) in 1957, by conceptualizing the way governing organizations (such as governments) present themselves to the public. This presentation reveals the rational and attitudes of governors and sets the ‘tone’ between the members in a society, as well as between governors and governed individuals (Dean, 2010). The concept became popular twenty years later through the French philosopher Michel Foucault, who used the concept in a narrower sense in his studies on power. We apply the term in its original (i.e. Barthes’) scope, of which power is only one of many different contexts for related investigations.

Nowadays the literature distinguishes between *authoritarian*, *liberal* and *neoliberal* rationalities or approaches in governmentality (e.g. Dean, 2010).

Authoritarian approaches assume reconcilability of the various governance principles (Burchell, 1991), expressed through centralized decision making, clearness of directions, and significant power distance, which “seek[s] to operate through obedient rather than free subjects, or, at a minimum, endeavor to neutralize any opposition to authority” (Dean, 2010, p155). In projects, this is typical for major public investment projects where process compliance is enforced within rigid governance structures (Miller & Hobbs, 2005).

Liberal approaches emphasize the heterogeneity and incompatibility of different governance approaches (Burchell, 1991), and is expressed, for example, through use of economic principles and market awareness to drive rationalistic decision making (Dean, 2010). In projects, this is expressed in governors emphasizing outcome control, with clearly defined, but when needed flexible governance structures, typical for customer delivery projects (Dinsmore & Rocha, 2012). Both authoritarian and liberal approaches operate through interaction of governors (e.g. steering committees) with individuals (e.g. project managers), thus are direct person-to-person approaches to governmentality.

Neoliberal governmentality differs from that by influencing the societal context of individuals in order to steer their behaviors (Lemke, 2001). By addressing people's collective interests and their willingness to consent, it indirectly steers people by setting the criteria for their decision-making through their societal context. Through people's collective interest and their voluntary obeying to these contextual frameworks, their behavior is shaped, but not necessarily determined (Clegg, Pitsis, Rura-Polley, & Marosszeky, 2002). It is typical for projects that foster self-control within rudimentary governance structures, such as community-governed open source development projects (Franck & Jungwirth, 2003). Neoliberal governmentality works indirectly between governor and governed.

Governmentality precept –this reflects the preference that governors have toward the way a project should be managed. Precepts are:

- *Organizational values*: governors prioritize organizational values in their governmentality and subordinate processes or results to it. Examples include project owners prioritizing the accomplishment of core organizational values - like continuous learning, individual wellbeing, or individual's engagement - over short term profit objectives or process compliance.
- *Process*: governors prioritize process compliance, such as following the project management methodology. This is typical for projects in high-risk industries, such as for airline pilots or firefighters.
- *Project wellbeing*: governors prioritize the project in terms of its viability, success of its deliverables, and the importance of the deliverables for the organization or its stakeholders. Process compliance and organizational values are subordinated to short and long-term project results.

Any precept can appear in any governance approach, thus they are independent of governance approaches. However, one of them typically dominates the other two in the governors understanding of how the project manager is supposed to execute tasks.

These above listed dimensions for governmentality are used in this study.

Governance

Müller, Zhai et al (2016) followed Biesenthal and Wilden (2014) and used corporate and country level governance concepts that reach through to the project level. Following Dean (2010) they used:

Sovereignty – which refers to supreme power or authority. It is one of the most basic principles in governance and addresses the rights for autonomy, mutual recognition and control (Krasner 2001). In the realm of projects it refers to the right for autonomy of standalone projects, and mutual recognition of projects within the organization, as well as mutual control, for example through resource sharing (Müller, Zhai, et al., 2016). This applies similarly to program and portfolio governance. Sovereignty overlaps partly with the concept of project autonomy (e.g. Gemünden, Salomo, & Krieger, 2005). However, including mutual recognition and external control makes it wider in scope.

Governance mechanisms –addresses the use of control and trust as mechanisms to execute governance. Influential work, like the Cadbury report (1992) or textbooks, (e.g. Larcker and Tayan, 2011) emphasize the importance of formal control mechanisms to reduce the risk of hazards (Williamson, 1991). Others emphasize the importance of trust and relationships to govern organizations (Davis, Schoorman, & Donaldson, 1997; Poppo & Zenger, 2002). The relationship between trust and control is complex and non-linear (Hoetker & Mellewig, 2009). The OECD (2004) definition of governance implies an irreducibility of governance mechanisms to neither trust nor control alone. Following this, we assume that both control and trust are present at any stages of a project, but one of them dominates as a governance mechanism, as shown in Poppo and Zenger's (2002) model of control and trust as the endpoints of a continuum, where governance prioritizes one of the two alternatives.

Institutions – refers to the number of governance institutions like steering groups, project management offices (PMOs), quality committees, program and portfolio management, etc. Each of them fulfill its particular role in governance. However, every additional governance institution increases the complexity in overall governance due to the difficulties in reconciling and coordinating the different governance approaches of these institutions, hence poses a further agency problem to the project, because of the need to agree and maintain performance in line with the terms of reference under which each of those institutions engages (Dixit, 2009). This becomes evident in organizations that establish many PMOs (Aubry, Müller, & Glückler, 2012) or are in industries that are strongly controlled, such as the pharmaceutical or healthcare industry with their various governance bodies. The number of governance institutions for a project is used to assess the complexity of governance.

These governance dimensions are also used in the present study.

Projectification

In line with the underlying model we use the level of projectification as a control variable during the analysis. Projectification is the extent an organization uses projects and their management as an underlying principle to conduct their work. Midler (1995) and Lundin et al (2015) describe it as an organizational transition process from process to project orientation. Literature on the measurement of projectification is rare and we adopt the dimensions described in the methodology section.

The literature indicates a gap in the knowledge about the context contingency of the dimensions for governmentality, governance and projectification. This study will address this gap.

The relationship between governmentality and success

Governmentality is a relatively new concept in project management and very little research investigates its impact on project success. Clegg et al (2002) brought governmentality into the realm of projects by describing the particular approach used at the Sydney Olympics as a successful project. Recently Simard and Aubry (2016) found qualitatively traces of a relationship between governmentality and success, but did not specify it further. A global quantitative study by Müller, Shao and Pemsel (2016) showed a significant correlation between governmentality as an enabler for project governance and a) the acceptance of governance structures by project managers, and b) organizational success. The present study differs from that by not measuring governmentality as a timely antecedent for the development of governance structures. Instead, we concentrate on the governmentality during project execution, thus we measure authoritarian, neoliberal and precept, which differs from the measures in the Müller, Shao and Pemsel study. However, we adapt the notion of a direct relationship and hypothesize:

Hypothesis H1: There is a positive relationship between governmentality and project success

The link between organizational success and governmentality in the public sector was shown, for example, by Renou (2015) who emphasized the importance of governmentality for successful water utilities in France, and Collier (2007) who identified governmentality, sovereignty and discipline as the three critical success factors for performance in the police. This was complemented through studies in the private sector with organizations like IBM and consulting firms showing the importance of governmentality for global supply chains (Gibbon & Ponte, 2008). We transcend these results from studies in functional/permanent organizations, to the realm of projects.

Hypothesis H2: There is a positive relationship between governmentality and organizational success

The relationship between governance and success

Corporate governance studies on the relationship between good governance and performance or success show mixed results. The OECD describes it as exceedingly difficult to establish empirical evidence of such a relation (Clarke, 2007).

Related studies at the project level are somewhat clearer. Qualitative studies, support the notion of this relationship, whereby Bekker and Steyn's (2008) Delphi study with an expert group supports the importance of governance of projects for success, and Joslin and Müller's (2016a) study the importance of project governance through project methodologies, for project success.

Quantitative studies are more nuanced. *Project governance* (i.e. project methodologies) account for 22% of project success, and the shareholder versus stakeholder orientation of the organization (i.e. a *governance of projects* dimension) explains about 6% of project success (Joslin & Müller, 2016b). Other quantitative studies focused on the phenomenon in particular project types, like enterprise resource planning (ERP) projects. Here Badewi and Shehab (2016) showed that institutional routines and benefits management support project success, thus effectively shifting large proportions of the responsibility for project results away from project management and into the governance structure. Wang and Chen (2006) showed how the balance of four governance elements (explicit contracts, implicit contracts, reputation, and trust) mediates the relationship between project hazards and project success. Many corporate level studies perceive governance as contextual structures and therefore define it as a moderator variable (e.g. Narayanan & Narasimhan, 2014). These studies frequently show a moderating effect of governance on the relationship between different measures of organizational performance and, for example, flexibility and human capital (Narayanan & Narasimhan, 2014), environmental performance (Kock & Santaló, 2005), or market turbulence (Pan, Huang, & Gopal, 2015). We address research question 2 by hypothesizing a similar moderating role of governance between the *governance of projects* dimensions and project success, using the earlier identified dimensions of sovereignty, governance mechanism, and number of governance institutions:

Hypothesis H3: Governance of projects moderates the relationship between governmentality and project success

Little research is done on the relationship between governance of projects and organizational success. The traditional view is that project success leads to organizational success (Kaplan & Norton, 1995). Empirical studies for that include those by Pollack and Adler (2015) who found that profitability of small to medium enterprises is significantly driven by projects and their results. Based on that we hypothesize that the moderating effect hypothesized in H3 for each project, will be accumulated at the organizational level for the totality of projects.

Hypothesis H4: Governance of projects moderates the relationship between governmentality and organizational success

Contingency theory as theoretical perspective

Contingency theory claims that organizational performance results from fitting characteristics of the organization to contingencies that reflect the situation of the organization (Donaldson, 2001). This makes it an appropriate lens for this study. The governmentality approach chosen is hereby seen as a characteristic and the governance structure as a contingency variable. Early version of contingency theory proposed that context shapes organizational characteristics, (Donaldson, 1985). More recent versions emphasize reflexivity through interaction between context and organizational characteristics, which allows readjustment of organizational characteristics to changes in context, for the benefit of organizational performance (Donaldson, 2001). In studying organizational phenomena from the latter perspective, researchers “implicitly treat organizations as loosely coupled aggregates whose separate components may be adjusted or fine-tuned incrementally once weak constraints have been overcome (Meyer, Tsui, & Hinings, 1993, p1177). The interaction between these components (in this study: governmentality, governance and success) is typically investigated using moderator models and related analysis techniques (Drazin & van de Ven, 1985), such as hierarchical regression analysis.

Methodology

Our research design followed the design process suggested by Saunders, Lewis and Thornhill (2007). We chose critical realism as underlying philosophy, which assumes the existence of a mind-independent reality, in which the empirically observable part of a phenomenon is investigated for its causal events and the mechanisms that underlie the emergence of these events (Bhaskar, 2016). Hence, we assume that similar empirical phenomena can be caused by

different underlying events and mechanisms, which allows identification of trends, but not automatically generalization results.

A deductive approach was chosen, testing hypotheses with data collected through a worldwide, web-based questionnaire. This was distributed in a snowball sampling approach to professional organizations for project managers (such as Project Management Institute, International Project Management Association etc.) and to the researchers existing networks with practitioners known from earlier studies.

Measurement constructs

The Appendix lists the assessed constructs, the measures, and the related questionnaire items.

Governmentality was operationalized along the findings from the underlying study. Authoritarian to liberal approaches were measured through two sets of questions, which were combined in the subsequent factor analysis. Precepts was measured through three questions on the relative importance of values, process and projects. All these constructs were measured on five point Likert scales from strongly disagree to strongly agree.

Following Müller, Zhai et al (2016) sovereignty was operationalized as the totality of the role that the project manager is granted by the governance system. We distinguished between project manager roles of *employee*, *manager* or *entrepreneur*. As *employee* the governance system expects the project manager to fulfill tasks in a merely prescribed manner (e.g. process compliance), like in some public investment projects (Klakegg & Haavaldsen, 2011). As *manager* the system grants some level of decision-making authority to the project manager, in expectation of a merely risk averse behavior (Amihud & Lev, 1981). This implies professional and predictable decisions making heuristics (Busenitz & Barney, 1997). An *entrepreneur* is granted a wider scope of tolerated behavior, including risk taking behavior and rugged individuals (McGrath, MacMillan, & Scheinberg, 1992). It assumes the project manager is responsible for the project in its entirety as a business and free to decide on behalf of the project as long as it stays within the limitations set by the governing bodies. In summary, we assess the project manager's representativeness of the project in relation to its context, including the related internal control and external autonomy granted to this role by the governance system, as a proxy to measure sovereignty. These dimensions were measured on a five point Likert scale from strongly disagree to strongly agree.

Governance *mechanisms* were measured using an existing five dimensional construct from Müller and Lecoivre (2014), which uses five point semantic differential scales (a form of

Likert scales). Lower levels are indicative of a preference for control, and higher levels of a preference for trust as a governance mechanism.

We measured *institutions* in project governance from low (0 or 1 institutions, such as a steering group), medium (2 or 3 institutions) and high (more than 3 institutions). Projectification is a broad concept. We operationalized the dimensions from Müller, Zhai et al (2016), which were based on Midler (1995), on five point Likert scale from very low to very high.

Success was measured separately for project level and organizational level. To balance the hard (objective) and soft (subjective) measurement dimensions we used the construct developed Blomquist and Müller (2006) for their governance studies, using 5 point Likert scales from *Not at All* to *Very much*. It assesses on the project level achievement of the triple constraints, business objectives and customer satisfaction. At the organizational level, it assess the accomplishment of last year's annual plan, customer satisfaction and employee satisfaction.

Demographics included questions on the respondent's country, experience, sector, employees in organization, and budget of the project. Respondents were asked to answer the question in respect of their last finished project.

The survey yielded 125 responses, of which four were empty submission, leading to 121 usable responses. Table 1 shows the demographics. ANOVA tests showed no differences in answers between project managers and other roles. Therefore, all answers were used for analysis.

Validity and reliability

Validity of the data was ensured by using constructs that were either used and tested before, or developed from the most often cited publications in the subject area. A pilot test with 10 respondents from academia and industry was done to test face-validity. Minor misspellings were corrected after the pilot, which allowed using the pilot data in the final sample. Quantitative tests for validity included item-to-item and item-to-total correlations. Reliability was tested using Cronbach Alpha tests (Cronbach, 1951).

Data for both independent and dependent variables were collected from the same informants, thus we took precautions to avoid the risk of Common Methods Bias (CMB). These followed Podsakoff and Organ (1986) and included reminders on anonymity of the data, that there are no right or wrong answers, that answers should be related to the last finished project. Related post-hoc tests included the Harman test, which showed 12 factors, with the first one accounting for 21% of the variance, followed by 13%, 7%, 6%, 5% and smaller. No single factor dominated the test, thus no indication of CMB.

Country	<i>Frequency</i>	<i>Percent</i>			Industry/Sector	<i>Frequency</i>	<i>Percent</i>	<i>Category</i>
The Netherlands	34	28.1			IT/Telecom	31	25.6	1
Other countries	20	16.5			Engineering	16	13.2	2
Sweden	15	12.4			Other	22	18.2	3
USA	11	9.1			Oil and Gas	13	10.7	4
Canada	8	6.6			Finance	8	6.6	5
Australia/NZ	7	5.8			Utility	8	6.6	6
China	5	4.1			Consulting	7	5.8	7
Germany	5	4.1			Healthcare	7	5.8	8
Norway/Finland	5	4.1			Total	112	92.6	
Global workers	4	3.3			Missing	9	7.4	
Middle/South America	3	2.5			Sample total	121	100.0	
Total	117	96.7						
Missing	4	3.3			Employees in org.	<i>Frequency</i>	<i>Percent</i>	<i>Category</i>
Sample total	121	100.0			Up to 50	10	8.3	1
					51-250	5	4.1	2
Experience	<i>Frequency</i>	<i>Percent</i>	<i>Category</i>		251-1,000	16	13.2	3
Up to 5 years	14	11.6	1		1,001-10,000	44	36.4	4
6 to 10 years	20	16.5	2		10,001-50,000	15	12.4	5
11 to 20 years	48	39.7	3		50,001-100,000	5	4.1	6
More than 20 years	35	28.9	4		More than 100,000	20	16.5	7
Total	118	97.5			Total	115	95.0	
Missing	4	3.2			Missing	6	5.0	
Sample total	121	100.0			Sample total	121	100.0	
Project Budget	<i>Frequency</i>	<i>Percent</i>	<i>Category</i>					
Up to M€ 0.5	31	25.6	1					
M€ 0.5 - 5.0	37	30.6	2					
M€ 5 - 50	28	23.1	3					
More than M€ 50	12	9.9	4					
Total	108	89.3						
Missing	13	10.7						
Sample total	121	100.0						

Table 1: Sample demographics and their categories

Analysis

We tested the data for missing values, eligibility for the analysis techniques, used factor analysis to validate the constructs outlined above, and hierarchical regression analysis (HRA) to test the moderator model. The results of the HRA were interpreted following Sharma, Durand, and Gur-Arie (1981). The interpretation of significance values followed Aguinis et al., (2010) with 0.10 being “marginally significant”, 0.05 “significant”, and 0.01 “highly significant”. Missing values were not of concern (below the 15% mark) and skewness and

kurtosis ± 2 indicated normality (Hair, Black, Babin, & Anderson, 2010). Scales sizes were harmonized by using categories for measures of number of employees, budget size and years of experience (Table 1). Dummy variables were created for each industry category, for use as control variables in subsequent regressions. Table 2 shows the descriptive statistics of the constructs. ANOVA tests by demographic variables showed no significant differences by demographics.

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Experience	117	1.000	4.000	2.889	0.972	-0.576	0.224	-0.595	0.444
Company size	115	1.000	7.000	4.252	1.711	0.026	0.226	-0.406	0.447
Project budget	108	1.000	4.000	2.194	0.981	0.325	0.233	-0.923	0.461
Projectification	109	-2.272	2.103	0.000	1.000	-0.202	0.231	-0.679	0.459
IT_Telecom	118	0.000	1.000	0.263	0.442	1.092	0.223	-0.821	0.442
Engineering	121	0.000	1.000	0.132	0.340	2.199	0.220	2.882	0.437
Other	121	0.000	1.000	0.182	0.387	1.671	0.220	0.804	0.437
Oil_Gas	121	0.000	1.000	0.107	0.311	2.567	0.220	4.668	0.437
Finance	121	0.000	1.000	0.066	0.250	3.536	0.220	10.681	0.437
Utility	121	0.000	1.000	0.066	0.250	3.536	0.220	10.681	0.437
Consulting	121	0.000	1.000	0.058	0.234	3.835	0.220	12.924	0.437
Healthcare	121	0.000	1.000	0.058	0.234	3.835	0.220	12.924	0.437
Authoritarian gvty	109	-2.824	2.302	0.000	1.000	-0.043	0.231	-0.258	0.459
Neoliberal gvty	109	-2.490	2.321	0.000	1.000	-0.214	0.231	-0.256	0.459
Gvtyrecept	109	-2.743	2.746	0.000	1.000	0.236	0.231	-0.191	0.459
Sovereignty	109	-2.846	1.758	0.000	1.000	-0.630	0.231	-0.090	0.459
Gov mechanism	109	-2.448	2.801	0.000	1.000	-0.175	0.231	-0.334	0.459
# of institutions	98	1.000	6.000	2.735	1.248	0.715	0.244	0.348	0.483
Project success	115	1.667	5.000	4.214	0.834	-0.972	0.226	0.198	0.447
Organizational success	114	1.000	5.000	3.662	0.965	-0.657	0.226	-0.120	0.449
Valid N (listwise)	73								

Table 2: Descriptive statistics

Factor analysis

Principle Component Analysis with Varimax rotation resulted in eight factors (KMO 0.749, $p=0.000$) and explained 68% of the variance. Six factors had acceptable reliability (i.e. Cronbach Alpha ≥ 0.6), and were used to replace the original questionnaire items in further analyses. Item-to-total and item-to-item correlations generally met or exceeded the respective validity threshold of 0.5 and 0.3. The question on “Steering Committee acts authoritarian” compromised the thresholds slightly. However, deleting the question would have compromised reliability. We prioritized reliability over the minor deviation from threshold and found it important from a logical perspective to keep the item in the analysis. The factor loadings and Cronbach measures are shown in Table 3, the related question items are shown in the Appendix.

The questionnaire items for project success and organizational success all loaded highly on their respective factor (KMO 0.757, $p=0.000$), thus confirmed the construct. Success was measured as the mean of the related question items.

	Component							
	Gov mechanisms	Projectification	Sovereignty	Neoliberal-gvty	Authoritarian-gvty	Precept	Not valid	Not valid
Cronbach Alpha	.824	.837	.718	.619	.813	.642	N/A	N/A
Q20	.759							
Q18	.719							
Q19	.716							
Q21	.700							
Q22	.697							
Q27		.894						
Q26		.853						
Q24		.825						
Q25		.641						
Q17			.724					
Q16			.683					
Q13			.649					
Q15			.612					
Q9				.715				
Q8				.591				
Q3				-.546				
Q7				.502				
Q1					.856			
Q2					.686			
Q10						.727		
Q12						.570		
Q4						.539		
Q11							.865	
Q5								.756

Table 3: Rotated factor and reliability analysis

The factor solution mirrors the theoretically derived concepts from the underlying study. Minor deviations were expected when moving from qualitatively developed scales to quantitative measures of dimensions. One difference found was in the questions on liberal governmentality. Of the three questions, one loaded on the factor for authoritarian, one on the factor for neoliberalism, and the third did not load sufficiently high on any factor. As the factors are orthogonal, it indicates a clear distinction between direct governmentality of people (i.e. the authoritarian factor) and indirect governmentality through neoliberal approaches to set the context for people's self-governance. It indicates a dominance of the difference between direct

(i.e. authoritarian) and indirect (i.e. neoliberal) governmentality quantitatively over other differences, such as liberal and authoritarian governmentality. This is an important finding, which does not compromise the concept of the underlying tool, but refines it in terms of the importance of direct versus indirect governmentality.

A few questionnaire items did not clearly load on one individual factor. However, all expected constructs were clearly represented through the factor analysis.

The correlations are shown in Table 4. It indicates significant correlations, such as the increase of authoritarian and decrease of neoliberal governmentality with increasing company size, which reflects earlier findings, like those by Miller and Hobbs (2005) or Klakegg and Haavaldsen (2011). Furthermore the correlation of project success and the level of authoritarian and neoliberal governmentality, as well as the relationship between organizational success and authoritarian governmentality. This is further elaborated in later sections. Even though it is not within the scope of the present study, Table 4 shows that project level success and organizational success are significantly correlated. Assuming a causality from project level to organizational level success, it indicates that 28% of organizational success can be traced back to project success.

	Expe rience	Comp any size	Project budget	Projectifi cation	IT_Tele com	Engine ering	Other	Oil & Gas	Finan ce	Utility	Consul ting	Health care	Authori tarian gnty	Neoli beral gnty	Gnty precept	Sover eignty	Gov mecha nisms	# of instituti ons	Project succes s
Company size	-.001																		
Project budget	-.241*	-.058																	
Projectification	.032	.153	-.069																
IT_Telecom	-.131	.060	.001	.185															
Engineering	-.009	.058	-.049	.254**	-.236**														
Other	.033	-.096	.013	-.409**	-.286**	-.184*													
Oil & Gas	.012	.028	-.040	.073	-.210*	-.135	-.164												
Finance	-.039	-.040	.016	-.176	-.161	-.104	-.125	-.092											
Utility	-.039	-.061	.159	-.089	-.161	-.104	-.125	-.092	-.071										
Consulting	.103	-.059	.025	.082	-.150	-.097	-.117	-.086	-.066	-.066									
Healthcare	-.008	.090	-.090	.153	-.150	-.097	-.117	-.086	-.066	-.066	-.061								
Authoritarian gnty	.037	.190	.032	.000	.107	-.086	.078	.071	-.148	-.139	-.006	.052							
Neoliberal gnty	-.072	-.251**	-.002	.000	.091	-.043	-.047	-.013	-.031	.098	.078	-.074	.000						
Gnty precept	-.127	.128	.002	.000	.134	.057	.079	-.055	-.087	-.051	-.088	-.069	.000	.000					
Sovereignty	.058	.006	.003	.000	-.046	-.065	.082	.048	.046	-.031	.097	.021	.000	.000	.000				
Gov mechanisms	-.063	-.216*	.100	.000	.173	-.055	.040	-.146	-.165	.093	.096	-.172	.000	.000	.000	.000			
# of institutions	.013	.308**	-.034	.019	-.183	-.020	.047	.030	-.081	.089	.044	.091	.014	-.077	.000	.035	-.292**		
Project success	.106	-.006	-.148	.215*	.108	-.003	.007	-.065	-.029	.039	.065	-.022	.328**	.275**	.156	.157	.053	-.027	
Organizational success	-.029	.036	-.165	.514**	.180	-.016	-.080	.050	-.177	-.154	.105	.153	.315**	.162	-.036	.147	-.050	-.001	.531**

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4: Correlations

Hierarchical regression analyses

Two separate path models were tested. The first model tested the correlation of the independent variables governmentality with dependent variable project success and its moderation through governance (Table 5, left side). The second model tested the same independent and moderator variables in relation to organizational success (Table 5, right side). The factors for authoritarian, neoliberal, and precept) were entered as the dimensions for the governmentality variable, and sovereignty, mechanisms, and institutions) as those of governance. To avoid nuisance effects we controlled for the level of projectification, and demographics like the respondent's years of experience, size of the company, budget of the project. To control for effects by industry, we created dummy variables for each industries. Multicollinearity was not assumed to be an issue, as all VIF measures in all regressions were below the threshold of 5. Missing values were replaced by means.

The regression analysis followed Sharma et al's (1981) process:

- i. Test for significant interaction between moderator and independent variable (step 4) .
If significant proceed to ii, otherwise to iii.
- ii. If the moderator is related to the independent variable it is a "quasi moderator" (i.e. a mix of antecedent and moderator variable), if not, it is a "pure moderator", which influences the form of the relationship between independent and dependent variable.
- iii. If the moderator correlates significantly with the independent or dependent variable it is not a moderator, but a possible antecedent variable. If not, it is a potential homologizer, which is tested in iv
- iv. The sample is split on the basis of the hypothesized moderator, using its median. The sub groups are tested for significant differences in predictive validity. If the R-square values of the subgroups differ significantly it is a homologizer, which influences the strength of the relationship between independent and dependent variable. Otherwise it is not a moderator.

Two types of robustness tests were done at step 3. First we repeated the analyses leading up to step 3 five times, each times using a random sub-sample of a size that ensured 15 observations per (in)dependent variable. The mean values of these five rounds of resampling are shown in the column robustness test in Table 5. The results confirm those of the full sample, except for Sovereignty, which tended to be close to, but not always meeting significance. Second, we performed the regressions separately for governance and governmentality. Both test confirmed the results of the original regression.

Moderation model for project success

Table 5, left side, shows the results for project success. Step 1 shows the results after entering the control variables, step 2 after adding the independent variables, step three after adding the moderator variables, and step 4 after adding the interaction terms of independent and moderator variables. The model is significant with an Adjusted R-square of 21% ($p=0.000$). Step 2 shows a significant main effect, which is the correlation between the all three dimensions of governmentality and project success. This support hypothesis H1. The relative weight of each dimension (i.e. the standardized Beta coefficient) indicate authoritarian governmentality as strongest correlated with project success, followed by neoliberal governmentality and precept. The insignificant results for moderators (step 3) and interaction terms (step 4) indicate possible homologizer variables. The results of the homologizer test is shown in Table 6. Only the R-square values of the subgroups for different levels of governance mechanism vary significantly. Hence. governance mechanism is a homologizer, which strengthens the relationship between authoritarian governmentality and project success when trust is the dominant governance mechanism. This partly supports hypothesis H3.

The moderation model for organizational success

The right side of Table 5 shows he results with organizational success as dependent variable. The model is significant ($p=0.000$) with an Adjusted R-square of 35%. The main effect shows significant correlations of authoritarian and neoliberal governmentality with organizational success ($p=0.000$ and 0.10 resp.), and no significant correlation with the precept variable. This partly supports hypothesis H2. There is a positive relationship between governmentality and organizational success.

Insignificant correlations for moderators (step 3) and those for interaction variables (step 4) indicate possible homologizer effects. Related tests (Table 6) did not support this. The marginal significance of neoliberal governmentality (step 3) and its significant interaction term with *Number of Institutions* (step 4), indicates a pure moderator. The number of institutions influences the form of the relationship between governmentality and organizational success. Hypothesis H4 is partly supported: The relationship between the neoliberal governmentality and organizational success is moderated by the number of governance institutions. The relationship is shown in Figure 3.

----- See Table 5 -----

Potential moderator	Independent variable	Project success			Organizational success		
		Moderator group			Moderator group		
		Low	High		Low	High	
		r	r	Z	r	r	Z
Sovereignty	- Authoritative	0.699	0.542	1.180	0.720	0.731	-0.110
Sovereignty	- Neoliberal	0.682	0.534	1.090	0.701	0.727	-0.240
Sovereignty	- Precept	0.664	0.531	0.960	0.698	0.699	-0.010
	n=	46	44		45	45	
Mechanism	- Authoritative	0.538	0.796	-2.220*	0.640	0.764	-1.130
Mechanism	- Neoliberal	0.605	0.744	-1.180	0.642	0.756	-1.030
Mechanism	- Precept	0.548	0.680	-0.980	0.617	0.734	-0.990
	n=	47	43		48	42	
Institutions	- Authoritative	0.750	0.699	0.440	0.732	0.762	-0.270
Institutions	- Neoliberal	0.655	0.712	-0.440	0.683	0.764	-0.700
Institutions	- Precept	0.634	0.706	-0.540	0.686	0.746	-0.510
	n=	36	38		35	39	

* = $p \leq 0.05$

Table 6. Homologizer test

Profiling of governance and governmentality

Mean values were calculated for each dimension at three levels of success. These were: the lowest third (low), the next higher third (medium), and the highest third (high) for both project and organizational success. The profiles for project success are shown in Figure 1 and for organizational success in Figure 2, where the profiles of the lowest third in success are shown as dotted line, those of the middle third as dashed line, and the top third as solid line.

Figure 1 shows that successful projects tend to be governed using measures on the right side and center of the tool, whereas those with low to medium levels of success tend to be governed predominantly along the measures on the left side of the profiling tool.

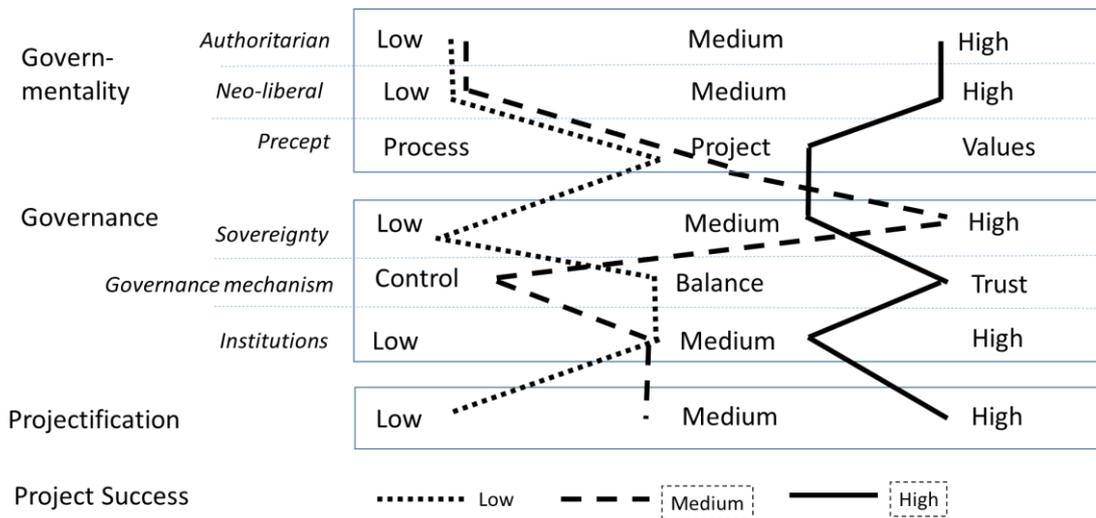


Figure 1: Governance profile of organizations at three levels of project success

Projects with low to medium levels of success show ambiguity in governmentality approaches, as both authoritarian and neoliberal approaches are low. It indicates a lack of clarity in the ways the governors (e.g. the steering committee) want the project to be managed (i.e. it is neither communicated through directives nor through neoliberal “culture setting”). Approaches to governance vary considerably between low and high levels of sovereignty, paired with a tendency to prioritize control as a governance mechanism. Projectification is low to medium in these organizations.

Projects with high levels of success show clear governmentality approaches, with both approaches, the direct (authoritative) and the indirect (neoliberal) being highly expressed. The precept is in average the project. The governance of successful projects sets medium levels of sovereignty for projects, together with high levels of trust as the related governance mechanism. The average number of governance institutions does not vary by project success. It is typically the steering committee, the owner/customer of the project, and a PMO. Successful projects are found most often in the context of highly projectified organizations.

Figure 2 shows the average profile of organizations with low, medium and high levels of success with their project-based part of the organization. Similar to Figure 1, it shows that organizations with low to medium levels of success apply more ambiguous approaches to governmentality, indicted through low to medium levels of clarity in authoritarian and neoliberal governmentality. Governance approaches vary considerably in these organizations and are in part contradictory, for example by giving projects high levels of sovereignty and

then employing control as a governance mechanism. As before, these organizations show low to medium levels of projectification.

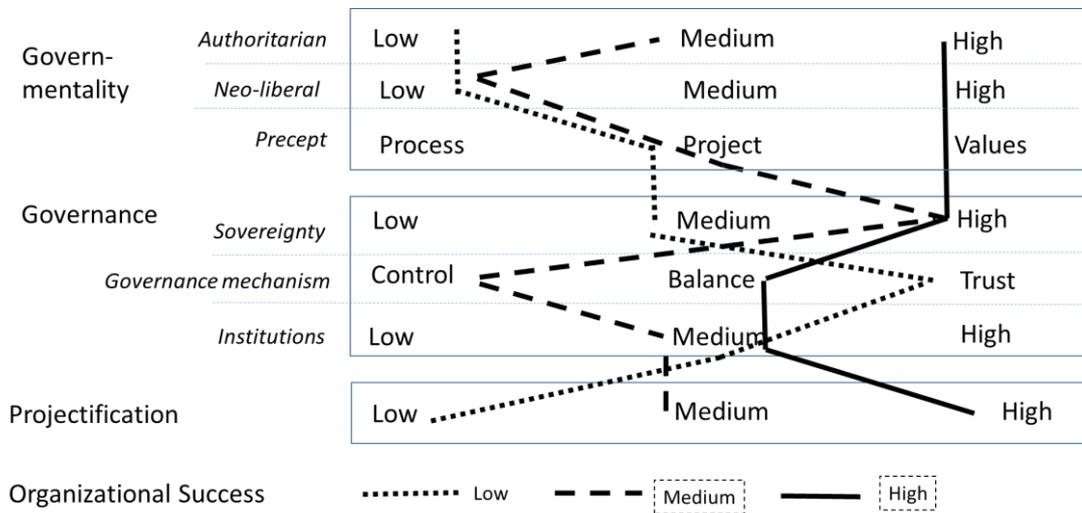


Figure 2: Governance profile of organizations at three levels of organizational success

Highly successful organizations tend to apply governance and governmentality approaches found on the right side of the profiling tool. Clarity in governmentality is achieved with both authoritarian and neoliberal approaches used in parallel, and a precept of organizational values. The governance approaches of these organizations include high levels of sovereignty, paired with a balance between trust and control as governance mechanism and two or three governance institutions. These organizations tend to be highly projectized.

Discussion

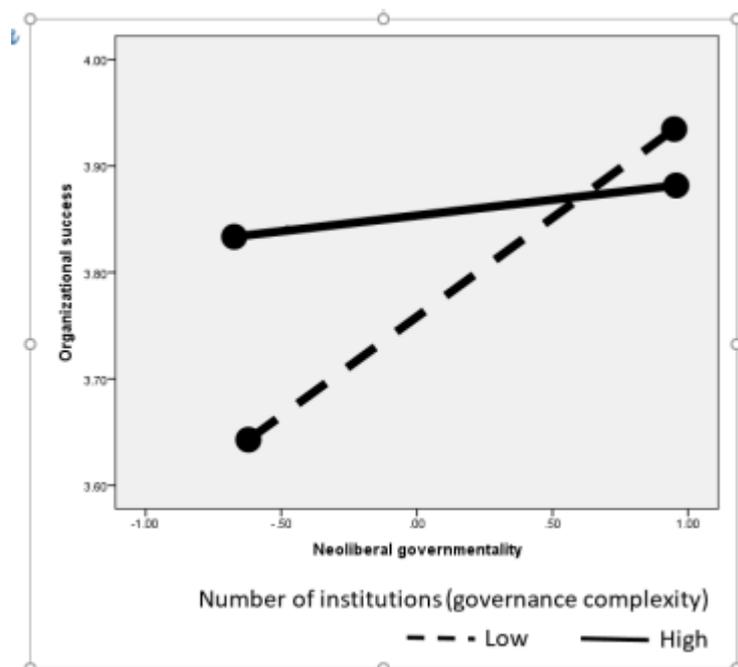
This study is the first to model the relationship between governance, governmentality, and success at project and organizational level. Results show all governmentality dimensions being correlated with project success, and authoritarian and neoliberal governmentality with organizational success. Governance is the structural context, within which governmentality is executed and moderates governmentality’s impact on success. This moderation differs by level of success.

Moderator effects

Authoritarian governmentality’s relationship with project success is moderated by the governance mechanism, where higher trust strengthens the relationship between authoritarian governmentality and project success. The profiles in Figure 1 confirm this by showing highest levels of both trust as governance mechanism and authoritarian governmentality in the most

successful projects. Dyer and Chu's (2003) study support this in the context of general management and Müller et al.'s (2013) in project management. Both studies showed that increasing trust associates with decreasing control efforts and improved task/project efficiency. Contingency theory suggests that a “fit” between context and organizational characteristics leads to higher performance. For this study, it translates into trust and authoritarian (direct and clear) governmentality influencing each other to find their “fit” in form of an equilibrium in relation to the success of the project. Earlier studies support that by showing that successful projects are characterized by clearness in interaction between project sponsor and manager (Turner & Müller, 2004), which associates with higher levels of authoritarian governmentality, and as well as trustful project environments fostering mutual respect and openness in interaction between governance institutions and projects (Müller et al 2013).

Neoliberal governmentality’s relationship with organizational success is moderated by the number of governance institutions, where the latter influences the form of the relationship. This effect is shown in Figure 3. In the context of few governance institutions (0 to 2) neoliberal governmentality and organizational success are in a positive linear relationship. In case of three or more institutions (labelled high), organizations start at a higher level of success, but the increase of organizational success along with increases in neoliberal governmentality is marginal. This is further discussed under theoretical implications.



Profiles

The study provides profiles for governance and governmentality practices at different levels of project and organizational success. Successful projects and organizations show clear governmentality approaches, with both approaches, the direct (authoritative) and the indirect (neoliberal) being highly expressed. Intuitively this may seem contradictory, as neoliberal contexts do not fit at first sight to an authoritarian presence of governors. However, it becomes clearer when seen from the perspective of clarity in governmentality. Setting clear context criteria through neoliberal approaches and complementing them with clear messages about the expected ways projects should be managed reduces ambiguity in governmentality. Studies that support these findings include Turner and Müller's (2004) finding that clarity in approach and level of engagement of project sponsors are indicative of more successful projects.

Moreover, the distinction between direct and indirect approaches allows for adjustment of governmentality to the particular needs of projects, thus, flexibility in governance approaches. Just as the adjustment of leadership styles to the particular leadership situation marks a significant improvement in leadership success (Müller & Turner, 2010), it is reasonable to assume that the adjustment of governmentality approaches to governance situations will have a greater impact on governance success.

A comparison of Figure 1 and 2 shows that successful practices differ at project and organizational level. Highly successful projects are governed using medium levels of sovereignty, which give a certain level, but not complete freedom to the project and its manager to act independent from the rest of the organization, plus high levels of trust. Highly successful organizations allow for high levels of sovereignty, while balancing trust and control. Hence, governance of projects should provide for high levels of sovereignty for groups of projects, such as programs or portfolios, whereas project governance reduces the level of sovereignty within these groups and increases trust instead.

Conclusion

This study tested two research models, which hypothesized a relationship between governmentality and project success and organizational success respectively, and a possible moderation by governance. Moreover, the study developed profiles of governance and governmentality approaches across different levels of the two types of success.

Research question RQ1 asked for patterns in approaches. Successful projects and project-based parts of organizations tend to use homogeneous combinations of governance of projects

approaches, which are those found predominantly on the right side and the center of Figures 1 and 2. They show clarity in governmentality approaches, both direct (authoritarian) as well as indirect (neoliberal). Successful projects are characterized by a project precept, whereas successful organizations prefer a values precept. In terms of governance the former prefer medium level of sovereignty and institutions and high levels of trust. The latter are characterized by high levels of trust and medium level of institutions and a balance of control and trust as governance mechanism.

Research question RQ2 asked for the relationship of the dimensions of these patterns with success. Four hypotheses were tested. All three governmentality dimensions correlate with project success (H1 supported). Governance moderates this relationship, with stronger relationships in cases of trust as governance mechanism (partly support of H3). Authoritarian and neoliberal governmentality correlate with organizational success (partly support of H2). This relationship is moderated by number of governance institution (partly support of H4).

Theoretical implications

It is important to mention that the above study does not imply causality in the sense that a particular governance or governmentality approach will lead to better project and organizational results. It is likely that governance and governmentality approaches are adopted to the status of projects. Because of that, the study focuses on correlation, not causation.

Implications from a contingency perspective are in the support of the model that places governance as the structural context for human interaction (through governmentality) with its direct relationship with success. Governance and governmentality interact, showing different interactions at different levels (high, medium, low) and types of success (project or organizational). The interaction is influenced by the governance mechanism applied, where control weakens and trust strengthens the correlation between direct governmentality and project success, whereas the number of governance institutions, which was used as a proxy to measure governance complexity, influences the form of the relationship between neoliberal governmentality and organizational success. Complex governance structures provide for stable organizational success over different levels of neoliberal governmentality, hence substitute potential influences from steering committees on success. Simple governance structures allow for stronger influence through the level of neoliberal governmentality by the steering committee. In cases of very high level of neoliberal governmentality, simple structures (i.e. few governance institutions) are associated with higher success levels than complex structures.

The results support the appropriateness of contingency theory to explain the relationship between governance, governmentality and successful.

Managerial implications

The profiling tool serves practitioners in assessing their organization's particular profile of governance and governmentality and experiment with the dimensions and their scales to find their own "best practice". Practitioners in management and governance roles will benefit from having the study's results included in training and education programs to grow awareness of the importance of governmentality as a potential success factor in projects. This includes the importance of establishing both direct and indirect governmentality simultaneously and in non-ambiguous ways.

Future research

The study supports Clarke's (2007) notion that the relationship between governance and success is complex. Building on the present results, qualitative studies can assess a) the direction of causality (or other form of interaction) between success and governmentally/governance, and b) the moderation effects as they emerge in practice, thus, the situational context within which the interaction between governance and governmentality takes place. Jointly these studies lead the way for future quantitative investigations that allow for generalization and theory building.

Strengths and weaknesses

The study's strength lies in the use of proven constructs and dimensions from studies in general and project management. The strong evidence found for the role of governmentality further supports the validity of the findings. It is in line with the ongoing discussion about the importance of soft factors over hard factors in project management. Weaknesses are in the relatively small sample size and the exploratory nature of the study, which extends in several new areas, thus needs further studies to validate and support the present findings.

The study's contribution to knowledge lies in modeling, theorizing, and clarifying the relationship between governance, governmentality and success for a better understanding of organizational practices and their consequences.

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Appendix: Questionnaire

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