

Project managing in post-conflict environments: an exploration of the resource profiles of Sri Lankan non-governmental organizations involved in development projects

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Abstract

Purpose – The aim of this study is to examine the configuration of project resources in organizations operating in a post-conflict country environment using a Resource-Based View (RBV) perspective.

Design/methodology/approach – Data collection was undertaken using a quantitative survey study of Non-Governmental Organizations (NGOs) involved in development projects in Sri Lanka, which obtained 445 responses. An Exploratory Factor Analysis and subsequent Confirmatory Factor Analysis were performed to identify and confirm the Project Management (PM) resource profile composition of these organizations.

Findings – The study identified resource profiles incorporated items at the team, organizational and collaborative social resource levels and did not differ significantly by organization type. This suggests that the current focus of PM RBV research that implicitly uses a competitive advantage derived framework may need to be adapted for contexts such as post-conflict environments.

Research limitations/implications – For organizations seeking to deliver projects in developing countries, the findings indicate that relational capacity in the form of a collaborative social resource may be required to adapt team and organizational resources to post-conflict environments.

Practical implications – The lessons learnt from NGOs can be of value to other organisations seeking to operate in post-conflict environments. The findings from this research reveal that organizations in Sri Lanka establish resource profiles that meet domestic and external requirements. For the management of these organizations, recognition of the inherent contradictions of this strategy can enable the optimization of resource profiles, improving organizational efficiencies.

Originality/value – The study has used insights from NGOs involved in international and local development projects to extend current knowledge of PM resources. While NGOs are distinctive, the critical PM resources identified here may be of value to private and public organizations seeking to develop project resource profiles adapted to emerging markets.

Keywords PM resources, Resource-based view, Post-conflict environment

Paper type Research paper

1. Introduction

As conceptualized, the resource based view models organizations as a combination of resources. These resources can be tangible or intangible (sometimes referred to as capabilities). In Project Management, the resource based view has been used to examine the nature and interactions of codified and tacit deployed in project delivery. Early work in this area classified the type and characteristics of resources (Jugdev and Thomas, 2002). Later work examined capabilities (Davies and Brady, 2000) which can support project operational performance, that is the delivery of stakeholder requirements via project or strategic/dynamic capabilities which enable reconfiguration of resources to meet project requirements. Subsequent work examined the interaction of resource types such as the co creation of capabilities via interaction of these entities (client and contractor) in the context of complex



project delivery (Zerjav *et al.*, 2018). While most of this work has been conducted on firms located in developed countries, in developing countries the research has also explored the capabilities of single firms along with the nature of the project resources deployed by the firms. Further, a significant stream of the RBV in PM research utilizes the conceptualization of Barney (1991) which seeks to identify the competitive advantage of organizations. This approach may not necessarily be adapted into project settings where organizations hold far more complex relationships than oppositional competitive relationships.

Post-conflict environments may require organizations to evolve approaches beyond seeking competitive advantage. Post-conflict countries are defined as being the previous setting for an intra-state conflict, such as a civil war. These environments are distinct from the settings in which international development projects may be delivered as armed conflicts may occur in both developed (Northern Ireland) and developing countries (Sri Lanka). The conflict has ended and these countries have begun the decades-long process of establishing peace by achieving milestones, such as the ending of violence, disarmament and facilitating economic recovery (Brown *et al.*, 2011). Unlike other countries, post-conflict countries face the distinctive challenges of community recovery and risk reduction (Collier *et al.*, 2008). Communities hosting former combatants may not wish to work together on regional or national collaborative activities, such as projects (Lake, 2017). A related issue is that the negotiations for employment or contracts to deliver projects may reignite internal conflict in communities composed of former combatants from opposing sides, further increasing the difficulty of project delivery (Barakat and Zyck, 2009). Organizations in these settings who are seeking to deliver projects to communities may require distinct capabilities to meet these requirements. Organizations involved in projects delivered in post-conflict countries have additional responsibilities to those involved in traditional international development projects due to the nature of the context. Post-conflict countries have a history of violence and latent stakeholder tensions that can return to violence. Organizations need to be sensitive to these challenges and may need to develop resources and capabilities to ensure that projects can be delivered without a return to conflict. Specifically, they may adopt communication and collaborative approaches to working in communities where groups may have been previous combatants. Organizations seeking to deliver projects in post-conflict countries may be required to transform internal processes. Evidence from infrastructure projects in Kosovo and Iraq indicate that smaller delivery teams are best for reducing the risk of inflaming local tensions into violence (Pelton and Hunter, 2004). Project teams in these countries may also need to develop reciprocal support relationships with communities in order to deliver activities where formal support from the state may be inconsistent (Kadirova, 2014). For example, civilian organizations may be contracted by foreign military personnel who require adaptation of existing processes to match military procurement practices and success criteria (Kremers *et al.*, 2010). This suggests that firms involved in projects may develop particular resource types individually or develop combinations of resources (resource profiles) to meet these contextual requirements.

Appendix 1 provides a summary of extant work on using the RBV in project firm settings. To date, however, no extant work has examined the project capacities or resource profiles of a category of firms in post-conflict countries which can identify the resources/capabilities developed by firms in order to meet the requirements of the external environment. The aim of this study is therefore to empirically examine the configuration of project resources in organizations operating in a post-conflict country environment. In this way, it extends extant work on the RBV (Resource Based View) in Project Management using both the capabilities and resources approach which has examined single firms or projects to identify the resource composition of a population of a specific type of organization (NGOs) in an underexplored country context (post conflict).

NGOs delivering projects in these environments are required to develop appropriate project management capacities to deliver beneficial outcomes in an environment with damaged infrastructure, divided communities and reduced state capacity. Sri Lanka was the setting for a violent civil war over 30 years (Government of Sri Lanka, 2017). The country is now recovering and local and international Non Governmental Organizations (NGOs) have been participating in the recovery process as well as economic and institutional development (DeVotta, 2005; Nanthagopan *et al.*, 2019). By understanding how NGOs are configured in post-conflict domains like Sri Lanka, the setting of this research, can provide useful insights for project organizations, especially national and international NGOs seeking to work in post-conflict contexts.

This paper provides empirical verification of the types of project capacities that are deployed in a post-conflict resource/institutional environment. It suggests that future theoretical development in project management using the resource based view could take a Penrosean perspective which suggests that resource profiles and configurations by firms result in emergent capabilities. These resources can be collective which overcomes the constraint of competitive advantage posed by the Barney approach. While we know of the value of tangible resources and collaborative social resources have been theorized, this approach seeks to provide quantitative empirical evidence of the importance of collaborative social resources as well as their association with other resource types in organizations involved in project delivery.

2. Literature review: post-conflict country environment and project management resources

Unlike its application in business settings, the Resource-Based View (RBV) application in Project Management does not seek to explain how resources lead to competitive advantage but rather how resources/capabilities are used to perform project activities or reconfigure resources in order to meet complex, evolving stakeholder requirements. Project Management (PM) resources are defined as elements that support project operations, including PM knowledge, skills, systems, processes, culture, tools or techniques (Carnes *et al.*, 2017). RBV research has two dominant paradigms. The first, based on the work of Barney (1991), identifies ownership or control of resources with the distinctive characteristics of value, rarity, inimitability and organizational support (VRIO), enabling organizations to perform activities in a manner that distinguishes them from others. This perspective has been applied in project management to classify project resources (Jugdev and Thomas, 2002) into tangible (formal project management methodologies, tools and techniques, databases, project management investments) and intangible (knowledge exchange, mentoring, shadowing). A similar categorization was used to classify project resources in infrastructure (Parker *et al.*, 2015) and resources applied in information system projects (Ghapanchi *et al.*, 2014). Research has also used this perspective to identify the relationship between these resources and project success (Almarri and Gardiner, 2014) and the impact of gender on organizational project performance (Baker *et al.*, 2019).

2.1 The resource based view and project capabilities

Resources have also been identified in the project capabilities approach which are defined as capabilities required for successful project delivery (Davies and Brady, 2000). This work has been extended to identify operational project capabilities and strategic/dynamic supplier project capabilities (Davies and Brady, 2016). Related work has examined these capabilities from the perspective of the project owner (Winch and Leiringer, 2016) and client (Zerjav *et al.*, 2018) in complex projects. Further work has examined the role of owner capabilities in social

housing projects in a developing country (Gulino *et al.*, 2020). While this latter work identifies strategic, commercial, governance and transformational capabilities that are required at differing stages of the project life cycle, overall, the project capability school of thought is not conceptually distinct to the VRIO school as applied in projects. Appendix 1 summarises extant research in the RBV and organizations and these studies they posit that the possession or development of particular organizational elements, capabilities in one view and VRIO resources in another, enable the delivery of project outcomes. In international development, the competency perspective of the RBV has been used to conceptualize the development of dynamic NGO competencies in post disaster reconstruction (Von Meding *et al.*, 2009) as well as to empirically examine the competencies of nonprofits involved in post disaster rebuilding projects (Marshall *et al.*, 2017).

In environments where there are more complex dynamics beyond competition, an alternate conceptualization may be required. Penrose (1959) suggests that distinctive resource combinations provide beneficial outcomes, not individual resource characteristics. In this perspective, organisational activities and outcomes are created by combination and reconfiguration, not merely by ownership of resources (Helfat and Lieberman, 2002; Bryson, 2004; Sowa *et al.*, 2004; Paradkar *et al.*, 2015). Unlike the Barney (1991) view, intangible project resources, such as knowledge, can be integrated and shared across organizations (Newell *et al.*, 2006). Intangible resources in this view are also referred to as capabilities, interpreted as a “know-how” resource (Bryson, 2004; Sowa *et al.*, 2004; Paradkar *et al.*, 2015; Carnes *et al.*, 2017; Davies *et al.*, 2016). Therefore, the term “resources” is applied in this study to mean resources and capabilities.

Organizations seeking to deliver projects in post-conflict countries may need to adapt existing processes in order to compensate for institutional voids and post-conflict tension (Murphy *et al.*, 2018). This implies that organizations may have to develop or acquire new resources in order to perform these adaptation activities. Organizations may also have to work with stakeholders in order to encourage community participation in project evaluation to ensure that trust is maintained in these fragile locations for future activities (Rossignoli *et al.*, 2017). These findings suggest that organizations may have to develop collaborative resources with local stakeholders in order to deliver projects in post-conflict countries. Previous research has identified three types of capacity/resource for project organizations in post-conflict countries, which are team, organisational and collaborative social (Nanthagopan *et al.*, 2016).

2.2 Levels of PM resources

PM resources have been examined at multiple levels. Initial research identified two resources at the team and organizational levels (Jugdev and Mathur, 2006a). Later work classified resources into three levels: team, organisational and collaborative social/inter-organizational (Nanthagopan *et al.*, 2016). Each level can incorporate both explicit and tacit resources (Mathur *et al.*, 2007; Mahrooian and Foroza, 2012).

2.2.1 Team PM resources. Existing work has identified tacit and explicit team resources, such as project management practices, project orientation programs, project management expertise, peer learning, field visits, informal meetings, personal coaching, training and mentoring and on-the-job training (Dainty *et al.*, 2005; Jugdev and Mathur, 2006a; Rose *et al.*, 2007; Gorse and Emmitt, 2009; Mathur *et al.*, 2013; Ofori, 2014). Team values and competencies are intuitive knowledge which has been built over some time within the teams (Ghosh and Scott, 2009) and deeply rooted in team values, context, experience and practice (Cook and Brown, 1999).

2.2.2 Organisational PM resources. Organisational PM resources incorporate both tacit and explicit elements (Lusthaus *et al.*, 1995, 1999; De Vita *et al.*, 2001; Connolly and Lukas, 2003).

Codified organisational PM resources as written documents and transferable means in forms such as audio, video and software. They are generated by the deployment of team PM resources (Cook and Brown, 1999). Previous research has identified: staff capacity-building programs, shared project vision, objectives and policy, effective project coordination and leadership, project organisational structure, effective project communications and processes for sharing knowledge (Gunnarson *et al.*, 2000; White and Fortune, 2002; Jugdev and Mathur, 2006a; Raymond and Bergeron, 2008; Hurt and Thomas, 2009; Richman, 2011; Caniëls and Bakens, 2012; Kaleshovska, 2014).

2.2.3 Collaborative social PM resources. In addition to team and organizational resources, PM resources comprise formal know-what (explicit) and informal know-how (tacit) elements that provide the organisation with new knowledge (Burn, 2000). These resources are interactive and relational in nature and enable organizations to adapt to the country environment in which they operate (Grant, 1996). These resources are aligned to the Penrose view of the RBV as they may not be owned or controlled by a single organization but can be shared among organizations (Liu and Liu, 2008). In project organizations, Nanthagopan *et al.* (2016) identified these resources as formal collaborative social PM resources and informal collaborative social PM resources.

Formal collaborative social resource refers to the ability of the organisation to receive knowledge and advisory recommendations from external networking sources. These include NGOs intra and consortium meetings, project advisory participation from government bodies and from donors, joint project formal interactions and official information releases. Informal collaborative social resource refers to the ability of the organisation to obtain knowledge from informal external interactions. These include networking relations with stakeholders, informal interactions, beneficiary integration in projects, a community of practice through online social networks and project marketing.

2.3 PM resources and organizations

While research has examined the tools organizations use in development projects (Golini *et al.*, 2015), little research has examined the impact of country resource environments on project resource profiles of organizations. Project organizations operate within-country contexts and are required to configure internal resources in order to perform activities despite challenges that may exist in external environments. While existing literature identified a three-level resource structure, this configuration has not been validated using empirical statistical research. Further, project organizations are not homogeneous (Kilby, 2006) and include organizations with international linkages and domestic community-focused enterprises. These linkages may result in varying firm governance structures. It is not certain if differences in organization types influence the nature of resources owned or controlled by the organisation.

3. Methodology

The study aims to examine the configuration of project resources in organizations operating in a post-conflict environment. Therefore, descriptive research and survey design were selected to study the characteristics of project resources in a large number of randomly selected local and international NGOs operating in Sri Lanka. The survey design incorporated a survey instrument, which followed the approach of previous researchers for assessing PM resources in private, public and non-profit organisations (Pact OCA Handbook, 1996; Judgev and Mathur, 2006b). These previous standard questionnaires were already well-tested in the field survey and therefore improve the validity and reliability of the present study (Mathers *et al.*, 1998). The researcher selected the “in-person” method of data

collection, which increases the credibility of data collection and makes it possible for respondents to give immediate clarification of vague answers (Bowling, 2005).

3.1 Sample selection

NGOs were selected as the organizations to be examined as they have a long history of providing development activities via projects in post-conflict countries. The organizations selected for this study have been registered with the National Secretariat of Non-Governmental Organizations. Both local and international organizations have been working in post-conflict situations. Comparatively, both organizations have similar characteristics in terms of project operations in the areas in which they operate, types of projects and objective of their operations. In the field, in many cases both organizations work together and hold sector and consortium meetings to discuss their projects and progress. NGO managers share their skills with organizations and many local NGO managers were trained by international organizations. Therefore, the skills of the managers of both organizations are complementary and transferable. However, when considering financial capacity, international organizations have large funds and many local NGOs were funded by international NGOs to implement projects in the communities.

The population is the 1,426 NGOs registered with the National Secretariat for NGOs, of which 1,042 are local and 384 are international NGOs (National Secretariat for NGOs, 2014). For this research, the sample size was 500 local and international NGOs (35% of the population). The study population consisted of local and international NGOs identified as project organisations; therefore, a stratified random sampling technique was used to select a sample in equal proportion from each stratum to represent the sample to the population. This helps the researcher to select a randomised probabilistic sample from the population and increase the generalisability of the survey findings to the population (Levy and Lemeshow, 2009). The researcher first randomly selected 500 NGOs from each stratum in equal proportions. Subsequently, the researcher contacted 500 NGO managers, one manager from each NGO, who have been directly involved in development projects; for example, Livelihoods, Infrastructure, Relief and Disaster Management and Women Development. Of the managers contacted, 463 indicated interest in participating in the survey study; however, 18 questionnaires were eliminated due to incomplete data, leaving 445 questionnaires to be used for further data analysis. The study was conducted in the period from February to November 2015.

3.2 Sample characteristics

Table 1 shows the sample characteristics of the study. The total response from the sample is 445 NGO managers, of which 325 are from local NGOs, and 120 are from international NGOs. Local NGOs managers represent 73% of the sample size and 27%, represents the international NGOs managers. Education of selected NGO managers is organised as high school, bachelor's degree, postgraduate degree and doctoral degree. The NGO managers holding a bachelor's degree represent 45% of the sample, with higher education at 32% and postgraduate degree at 22%. A doctoral degree contributed the least representation (1%) in the sample. Some 77% of NGO managers responded that they had followed PM courses, while 20% said they had not followed any PM courses and 3% did not respond. The table further classifies the sample characteristics of local and international NGO managers.

3.3 Data analysis

Two data analysis techniques were used; exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) (Byrne, 2010). Statistical software packages were used to analyse the

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Characteristics	Local NGOs' managers		International NGOs' managers		Total	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
<i>Total responses from the Sample</i>	325	73	120	27	425	100
<i>Age</i>						
18–27	58	13	26	6	84	19
28–37	134	30	45	10	179	40
38–47	72	17	32	7	104	24
48–57	42	9	12	3	54	12
Above 57	19	4	05	1	01	5
<i>Years' Experience in NGO Projects</i>						
0–5	115	26	46	10	161	36
6–10	101	23	42	9	143	32
11–15	58	13	19	4	77	17
16–20	22	5	07	2	29	7
More than 20	29	6	06	2	35	8
<i>Education</i>						
High School	99	22	43	10	142	32
Bachelor's Degree	155	35	44	10	199	45
Postgraduate Degree	66	15	30	7	96	22
Doctoral Degree	03	1	02	–	05	1
Missing data	02	–	01	–	03	–
<i>Gender</i>						
Male	161	37	81	18	242	55
Female	163	36	38	9	201	45
Missing data	01	–	–	–	02	–
<i>Type of Project</i>						
Livelihoods	57	13	12	3	69	16
Infrastructure	25	6	11	2	36	8
Relief and Disaster Management	27	6	09	2	36	8
Water and Sanitation	19	4	11	3	30	7
Health and Nutrient	24	6	14	3	38	9
Training and Education	49	11	19	4	68	15
Protection	16	4	09	2	25	6
Social Mobilisation	37	8	09	2	46	10
Capacity Building	24	5	08	2	32	7
Women Development	19	4	08	2	27	6
Gender Equity	16	4	04	1	20	5
Others	10	2	05	1	15	3
Missing data	02	–	01	–	03	–
<i>Project Management Courses Attended</i>						
Yes	237	53	105	24	342	77
No	79	18	10	2	89	20
Missing data	09	02	05	1	14	3

Source(s): Survey data

Table 1.
Sample characteristics
of the study ($N = 445$,
NGO managers)

final survey data. The Statistical Package for Social Sciences (SPSS v16) was used for the preliminary and EFA analyses (Hopkins, 2008) and Analysis of Moment Structures (AMOS v21) was used for the advanced analyses of the measurement model and to confirm the identified factors from the exploratory factor analysis (Byrne, 2013).

EFA is applied either to explore the structure among a set of variables and determine the latent structure or as a data reduction method (Conway and Huffcutt, 2003; Cramer, 2003). In previous studies related to RBV, the EFA technique is applied to identify the latent structure of organisational or PM resources (Jugdev and Mathur, 2006a; Jafari and Rezaee, 2014). In this study, EFA is used to test the concepts and to identify the critical PM resources of NGOs (Lewis-Beck, 1994). CFA is applied to evaluate the overall measurement model based on *a priori* theory or the results of EFA and it is also widely used to study the associations between a set of observed variables and their underlying latent constructs (Byrne, 2013; Brown, 2014). The CFA technique is applied in previous RBV research to confirm the measurement model of organisational resources (Wahjudono *et al.*, 2013; Jafari and Rezaee, 2014). The present study consists of latent constructs of PM resources and CFA is used to examine the measures of constructs.

Further, a construct validity test is performed to examine how well it measures the construct it claims to be measuring (Brown, 1998; Hair *et al.*, 2006). The study data are ordinal in nature, so are not likely to meet the strict assumptions of the EFA and CFA. Appropriate statistical tests were performed to check the parametric requirements. The researcher used similar tested instruments (questionnaire, survey) to ensure the quality of data collection. Additionally, the dependent latent variables have been tested by previous researchers and performed with parametric tests (Ika *et al.*, 2012). Therefore, this practice has improved the measurement properties (Embretson, 1996; Harwell and Gatti, 2001).

3.4 Operational model

The PM resources are classified into three levels; team, organisational and collaborative social, with resources and measures in each level explained in Table 2. Measurement of Team PM resources is achieved using Questions Q1 to Q10, Organisational PM uses Questions Q11 to Q20 and Collaborative social PM resources uses Questions Q21 to Q30. The survey instrument is attached in Appendix 1.

4. Data analysis

4.1 Independent sample t-test of local and international NGOs

The independent sample *t*-test is performed for local and international NGOs to establish whether population mean values are equal or not. Table 3 shows the results of the independent sample *t*-test of all variables of PM resources. The results explain the mean values of all variables (except two) are not significantly different (*p* values are greater than 0.05) between local and international NGOs. This finding indicates the resource profiles of local and international organizations do not differ and are the same in a post-conflict environment. Therefore, it is appropriate to integrate the data of local and international NGOs for further multivariate analysis.

4.2 Exploratory factor analysis (EFA)

EFA was used to identify critical PM resources at each level since the three levels of PM resources were identified in the literature review. EFA was performed using the Principal Axis Factoring (PAF) method for each proposed factor separately in order to identify the optimum number of items for each factor (Field, 2005) as it is focused on shared variance and is unique to individual measurements (Warner, 2007).

Concepts	Variables	Indicators	Measure	Projects in post-conflict environments
PM Resources	Team Level	Casual conversations and informal meetings	Q1	Operational model of PM resources
		Brainstorming sessions	Q2	
		Field visits	Q3	
		On-the-job training	Q4	
		Job shadowing and mentoring	Q5	
		Success and failure stories	Q6	
		Team cohesion and trust	Q7	
		Team values	Q8	
		Team PM expertise	Q9	
		Team best PM practices	Q10	
	Organisation Level	Effective PM office	Q11	
		PM methodology, standards and process	Q12	
		PM tools and techniques	Q13	
		PM information system	Q14	
		Project monitoring and evaluation mechanism	Q15	
		Staff capacity-building programs	Q16	
		Formal meetings for sharing knowledge	Q17	
		Effective project communications systems and technology	Q18	
		Defined organisational PM culture	Q19	
		Supportive organisational leadership to PM	Q20	
	Inter-Organisation Level	Project advisory from government bodies	Q21	
		Project advisory from donors	Q22	
		NGOs intra and consortium meetings	Q23	
		Official information releases	Q24	
		Joint project formal interactions	Q25	
		Joint project informal interactions	Q26	
		Networking relations with stakeholders	Q27	
		Beneficiary integration in projects	Q28	
		Project marketing	Q29	
		The community of practice through online social networks	Q30	

Table 2.
Operational model of PM resources

4.2.1 Item (indictor) selection of team PM resource. Ten items (Q1-Q10) are included in the team PM resource. EFA led to the retention of one factor and the eight best items have been selected. [Table 4](#) contains the results of EFA. In the first step, items Q1 and Q4 were eliminated as their factor loadings are less than 0.55. EFA was performed for a second time. During the second run, the researcher identified eight good items with factor loadings greater than 0.55. The Cronbach's alpha value for these eight items is 0.899, which is greater than the standard value of 0.7. The total variance explained by the factor is 59%. The Kaiser–Meyer–Olkin Measure of Sampling Adequacy is 0.917, which indicates sampling adequacy is superb. The data within this factor returned a significance value of less than 0.001, which indicates that the data is acceptable for FA.

4.2.2 Organisational PM resource. Ten items, Q11 through Q20, were used to assess organisational PM resource. [Table 5](#) contains the results of EFA. Only one item, Q14, had a factor loading value of less than 0.55 and nine indicators were selected to proceed to the next stage of CFA. The Kaiser–Meyer–Olkin Measure of Sampling Adequacy value of 0.939 shows the sampling adequacy is excellent, and the significance value of less than 0.001 indicates that the data is acceptable for FA.

4.2.3 Best item (indictor) selection of collaborative social PM resource. Ten items, Q21 through Q30, were used to assess collaborative social PM resource. Two indicators, Q24 and

	<i>t</i>	Df	<i>t</i> -test for equality of means		Std. Error difference
			Sig. (2-Tailed)	Mean difference	
Casual Conversations and Informal Meetings	1.408	445	0.160	0.254	0.180
Brain Storming Sessions	1.073	445	0.284	0.165	1.073
Field Visits	3.596	445	0.000	0.521	3.596
On-the-Job Training	1.096	445	0.274	0.189	1.096
Job Shadowing and Mentoring	0.900	445	0.369	0.127	0.900
Success and Failure Stories	0.957	445	0.339	0.130	0.957
Team Cohesion and Trust	0.404	445	0.686	0.060	0.404
Strong PM Discipline	0.478	445	0.633	0.070	0.478
Team PM Expertise	1.338	445	0.182	0.192	1.338
PM Best Practices	1.809	445	0.071	0.262	1.809
PM Office	0.735	445	0.463	0.107	0.735
PM Methodology, Standards and Process	0.059	445	0.953	0.008	0.141
PM Tools and Techniques	0.608	445	0.544	0.084	0.139
PM Information System	3.329	445	0.001	0.583	0.175
Monitoring and Evaluation Mechanism	1.283	445	0.200	0.191	0.149
Staff Capacity Building programs	0.984	445	0.326	0.153	0.155
Formal Meetings for Sharing Knowledge	0.393	445	0.694	0.059	0.150
Effective Project Communication	1.459	445	0.145	0.214	0.146
Supportive Organisation Culture to PM	-0.129	445	0.897	-0.018	0.142
Supportive Leadership to PM	0.064	445	0.949	0.009	0.149
Project Advisory from Government Bodies	0.445	445	0.657	0.078	0.175
Project Advisory from Donors	0.204	445	0.838	0.032	0.159
NGOs Intra and Consortium Meetings	0.556	445	0.578	0.090	0.162
Official Information Releases	1.325	445	0.186	0.236	0.178
Joint Project Formal Interactions	1.339	445	0.181	0.229	0.171
Joint Project Informal Interactions	-0.223	445	0.823	-0.037	0.167
Networking with Stakeholders	0.869	445	0.385	0.137	0.158
Beneficiary Connections in Projects	1.248	445	0.213	0.167	0.133
Project Marketing events	1.365	445	0.173	0.212	0.155
Community of Practice through Social Networks	1.185	445	0.237	0.223	0.188

Table 3.
Independent sample
t-test of local and
international NGOs

Q30, were eliminated as their factor loadings were less than 0.55. The Kaiser–Meyer–Olkin Measure of sampling adequacy is 0.862, which shows sampling adequacy is good and the significance value of less than 0.001 indicates that the data is suitable for FA. Table 6 contains the results of EFA.

4.3 Confirmatory factor analysis (CFA)

CFA was used to determine whether the data fits the proposed hypothesised structure of PM resources (Cramer, 2003). Model fit can be achieved in two steps (Hair *et al.*, 2006). The first is the overall assessment of model fit and the second is the construct validity that investigates how well the concepts are designed for measurement. The objective of the measurement model extends beyond examining the relationships between the latent factors to warranting that the individual latent constructs are adequate for investigating the relevant concepts (Fornell and Larcker, 1981; Hair *et al.*, 2006).

Kline (2005) notes that convergent validity and discriminant validity are important measures for estimating a construct. In general, the construct validation process participates in deriving the measurement model with the presence of both convergent and discriminant

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Factor Question number	Items	Step 1 (10 Items)		Step 2 (8 Items)	
		Loadings	Cronbach alpha if item deleted	Loadings	Cronbach alpha if item deleted
Q1	Casual Conversations and Informal Meetings	0.395	0.892	<i>Item eliminated</i>	
Q2	Brainstorming Sessions	0.688	0.869	0.685	0.890
Q3	Field Visits	0.639	0.871	0.610	0.896
Q4	On-the-Job Training	0.471	0.885	<i>Item eliminated</i>	
Q5	Job Shadowing and Mentoring	0.629	0.874	0.631	0.894
Q6	Success and Failure Stories	0.759	0.866	0.764	0.884
Q7	Team Cohesion and Trust	0.771	0.865	0.775	0.883
Q8	Team PM Values	0.803	0.863	0.814	0.879
Q9	Team PM Expertise	0.718	0.868	0.721	0.887
Q10	Best PM Practices	0.809	0.862	0.817	0.879
Cronbach's Alpha			0.883		0.899
Eigen Value		5.124		4.722	
Percentage Variance Explained		51.241		59.024	
Kaiser–Meyer–Olkin Measure of Sampling Adequacy		0.920		0.917	

Table 4.
Factor matrix: team
PM resource of NGOs

Factor Question number	Items	Step 1 (10 Items)		Step 2 (9 Items)	
		Loadings	Cronbach alpha if item deleted	Loadings	Cronbach alpha if item deleted
Q11	PM Office	0.731	0.896	0.739	0.907
Q12	PM Methodology, Standards and Process	0.771	0.894	0.774	0.905
Q13	PM Tools and Techniques	0.799	0.892	0.797	0.903
Q14	PM Information System	0.432	0.916	<i>Item Eliminated</i>	
Q15	Project Monitoring and Evaluation Mechanism	0.692	0.898	0.687	0.910
Q16	Staff Capacity-Building Programs	0.688	0.898	0.686	0.910
Q17	Formal Meetings for Sharing Knowledge	0.722	0.896	0.727	0.907
Q18	Effective Project Communication System and Technology	0.740	0.895	0.741	0.906
Q19	Defined Organisational PM Culture	0.756	0.895	0.764	0.905
Q20	Supportive Leadership to PM	0.773	0.892	0.760	0.905
Cronbach's Alpha			0.907		0.916
Eigen Value		5.605		5.404	
Percentage Variance Explained		56.055		60.050	
Kaiser–Meyer–Olkin Measure of Sampling Adequacy		0.936		0.939	

Table 5.
Factor matrix:
organisational PM
resource of NGOs

validity (Liao *et al.*, 2007). Convergent validity is the extent to which items of the latent construct share a proportion of variance (Anderson and Gerbing, 1988; Hair *et al.*, 2006). This is measured by considering factor loadings, construct reliability and average variance

Factor Question number	Items	Step 1 (10 Items)		Step 2 (8 Items)	
		Loadings	Cronbach alpha if item deleted	Loadings	Cronbach alpha if item deleted
Q21	Project Advisory from Government Bodies	0.561	0.825	0.571	0.845
Q22	Project Advisory from Donors	0.695	0.814	0.699	0.831
Q23	NGOs Intra and Consortium Meetings	0.687	0.812	0.678	0.833
Q24	Official Information Releases	0.279	0.850	<i>Item Eliminated</i>	
Q25	Joint Projects Formal Interactions	0.577	0.821	0.567	0.845
Q26	Joint Projects Informal Interactions	0.612	0.820	0.615	0.839
Q27	Networking with Stakeholders	0.725	0.812	0.725	0.829
Q28	Beneficiary Integration in Projects	0.675	0.817	0.676	0.835
Q29	Project Marketing Events	0.706	0.813	0.704	0.832
Q30	The Community of Practice through Online Social Networks	0.442	0.837	<i>Item Eliminated</i>	
Cronbach's Alpha			0.837		0.854
Eigen Value		4.310		4.011	
Percentage Variance Explained		43.102		50.133	
Kaiser–Meyer–Olkin Measure of Sampling Adequacy		0.873		0.862	

Table 6.
Factor matrix:
Collaborative social
PM resource of NGOs

extracted (Fornell and Larcker, 1981; Hair *et al.*, 2006). CR and average variance extracted were calculated using Validity Master (Microsoft Office Excel 2010) (Fornell and Larcker, 1981).

4.3.1 Summary of comparison of measurement model specifications for PM resources (goodness-of-fit indices of CFA models). In this section, the researcher compares the four alternative models of PM resources and finally identifies the best model of PM resources based on measurement results. Three latent factors are drawn, namely, team PM resources (TPR), organisational PM resources (OPR) and collaborative social PM resources (CPR). Appendix 2 shows the measurement results of the first three alternative CFA models.

Table 7 contains a summary of the results for goodness-of-fit indices among the four models of PM resources. The normed chi-square decreased gradually from Model 1 (3.140) to Model 2 (2.742), to Model 3 (2.210) and Model 4 (1.782). Next, the RMSEA decreased through the models (Model 1–0.069, Model 2–0.063, Model 3–0.52 and Model 4–0.042). Lastly, the CFI increased across the models (Model 1–0.909, Model 2–0.948, Model 3–0.969 and Model 4–0.985). These values indicate that Model 4 is a better fit than the previous models (Carmines and McIver, 1981; Wheaton, 1987; MacCallum *et al.*, 1996; Hu and Bentler, 1999). Finally, parsimonious measures of AGFI increased gradually from Model 1 (0.831) to Model 2 (0.884), to Model 3 (0.927) and Model 4 (0.950). However, the PNFI shows slight variations as this measure was adjusted to losses in degrees of freedom over Models 1 to 4 (Mulaik *et al.*, 1989).

4.3.2 Final validated CFA Model 4: three levels of PM resources. A complete description of Models 1 to 4 is presented in Appendix 2. Model 4 was created by fixing the over-estimation and minimising the high cross-loading indicators (MacCallum *et al.*, 1996). Each factor

Indices	Model 1	Model 2	Model 3	Model 4	
<i>Absolute measures</i>					
Chi-square	854.1	362.0	192.2	90.82	
Degree of freedom	272	132	87	51	
Normed Chi-square	3.140	2.742	2.210	1.782	
GFI	0.859	0.911	0.947	0.967	
RMSEA	0.069	0.063	0.52	0.42	
<i>P</i> -Close	<0.05	<0.05	>0.05	>0.05	
SRMR	0.051	0.041	0.037	0.031	
<i>Incremental Measure</i>					
NFI	0.872	0.922	0.945	0.966	
NNFI (TLI)	0.899	0.940	0.963	0.980	
CFI	0.909	0.948	0.969	0.985	
<i>Parsimony Measure</i>					
AGFI	0.831	0.884	0.927	0.950	
PNFI	0.791	0.795	0.783	0.746	
<i>Fitting Summary</i>	<i>Poor Fit</i>	<i>Mediocre Fit</i>	<i>Good Fit</i>	<i>Excellent Fit</i>	

Table 7.
Summary of
comparison of
goodness-of-fit indices

consists of four indicators. Team PM resources consist of items Q2, Q6, Q7 and Q8; organisational PM resources consists of items Q11, Q12, Q13 and Q18; and collaborative social PM resources consists of Q22, Q23, Q27 and Q29.

The results for absolute fit indices show the normed chi-square (χ^2/df) value of 1.782, GFI is 0.967, RMSEA is 0.042, *p*-close value is greater than 0.05 and SRMR is 0.031. The incremental indices results reveal a NFI of 0.966, a TLI of 0.980 and a CFI of 0.985. Parsimonious fit indices results indicate that AGFI is 0.950 and PNFI is 0.746. The normed chi-square value is less than two and the other three indices show good values which confirm the model fits well (Wheaton, 1987; Hu and Bentler, 1999; Byrne, 2010). Therefore, this model is accepted. (See Figure 1 and Table 8).

4.4 Standardised factor loading of items of PM resources

The independent sample *t*-test (as discussed in Section 4.1) finding revealed there is no significant difference between the PM resource for local and international NGOs. The standardised factor loading of items in all three levels of PM resources of both combined local and international NGOs tabulated in Table 9.

5. Findings

5.1 Team PM resource

Previous Project Management and NGO research identified a range of team resources. The EFA and CFA confirmed four items (Table 9) as the most important team PM elements with high standardised regression estimates (r^2); those identified resources are brainstorming sessions, success and failure stories, team cohesion and trust and team values.

Brainstorming sessions are tacit since the knowledge gathered cannot be fully documented or articulated (Leonard-Barton, 1992; Egbu, 2004; Jugdev and Mathur, 2006b). Research in private sector organizations has identified the know-how resource as important (Jugdev and Mathur, 2006b; Mathur *et al.*, 2007; Jugdev *et al.*, 2013). Findings in this study (standardised factor loading (r^2) = 0.70, $p < 0.001$) suggest that it is also a critical resource in team PM resource in NGOs. For organizations in this study, these tacit resources may be complementary to providing team resources in an emerging market context for project

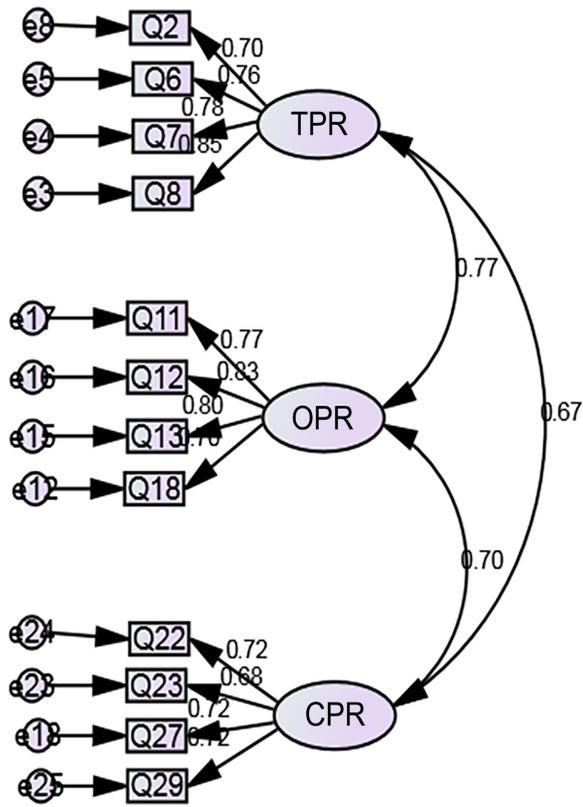


Figure 1.
CFA model 4

Construct	Item	Standardised factor loading estimates		
		TPR	OPR	CPR
<i>Team PM Resource (TPR)</i>	Q2	0.70		
	Q6	0.76		
	Q7	0.78		
	Q8	0.85		
<i>Organisational PM Resource (OPR)</i>	Q11		0.77	
	Q12		0.83	
	Q13		0.80	
	Q18		0.70	
<i>Collaborative Social PM Resource (CPR)</i>	Q22			0.72
	Q23			0.68
	Q27			0.72
	Q29			0.72
<i>Average Variance Extracted (AVE)</i>		0.60	0.61	0.50
<i>Construct Reliability (CR)</i>		0.86	0.86	0.80
<i>Absolute Fit Index</i>	$\chi^2 = 90.82$, $df = 51$, $\chi^2/df = 1.782$, $GFI = 0.967$, $RMSEA = 0.42$, p -close > 0.05, $SRMR = 0.031$			
<i>Incremental Fit Index</i>	NFI = 0.966, TLI = 0.980, CFI = 0.985			
<i>Parsimony Fit Index</i>	AGFI = 0.950, PNFI = 0.746			

Table 8.
Estimates for the
CFA model

Items in three levels of PM resources	Standardised factor loadings (r^2)
<i>Team PM resources</i>	
Brainstorming Sessions	0.70
Success and Failure stories	0.78
Team Cohesion and Trust	0.79
Team PM Values	0.82
<i>Organisational PM Resources</i>	
Effective PM Office	0.77
PM Methodology, Standards and Process	0.82
PM Tools and Techniques	0.80
Effective Project Communication Systems and Technology	0.72
<i>Collaborative Social PM Resources</i>	
Project Advisory from Donors	0.73
NGOs Intra and Consortium Meetings	0.67
Networking with Stakeholders	0.71
Project Marketing Events	0.72

Note(s): *Significance at 0.001 level

Table 9.
Standardised factor
loadings – items in
three levels of PM
resources

organizations. Similarly, discussing success and failure stories can be considered a tacit asset as discussions held in the events cannot be fully documented. Previous research emphasised this is the knowledge resource of organisations for effectively sharing knowledge (Cameron, 2007; Ritchie, 2011). Team members can jointly develop this know-how factor (Jugdev and Mathur, 2006b; Mathur *et al.*, 2007; Jugdev *et al.*, 2013). The present study shows that success and failure stories scored a high standardised factor loading ($r^2 = 0.78, p < 0.001$) in team PM resource. Therefore, the findings recommend it as another critical resource in the team PM resource in NGOs.

Existing research highlighted cohesion, trust and shared PM values as key resources in organisations for productive teamwork (Hempel *et al.*, 2009; Mach *et al.*, 2010). While this is rarely discussed in literature as a crucial PM resource, respondents in this study recognised cohesion as a critical resource (standardised factor loading (r^2) = 0.79, $p < 0.001$) and shared PM values (standardised factor loading (r^2) = 0.82, $p < 0.001$) as important elements in team PM resources.

5.2 Organisational PM resource

The literature on private sector organisations discussed a significant number of PM resources identified as important explicit PM resources for organisations (Richman, 2011; Ika and Lytvynov, 2011; Kaleshovska, 2014). The EFA and CFA confirmed four elements are critical for organisational PM resource with high standardised regression estimates (r^2) and identified these resources as effective PM office, PM methodology, standards and process, PM tools and techniques and effective project communication systems and technology. Table 9 shows the standardised factor loading of each item explained in organisational PM resources.

First, an effective PM office is considered a critical explicit resource in organisational PM resources, a resource that has been extensively discussed in the literature (Hill, 2004; Jugdev and Mathur, 2006a; Hobbs and Aubry, 2007; Martin *et al.*, 2007; Aubry and Hobbs, 2011; Mathur *et al.*, 2013). Further studies revealed that the PM office supports successful project execution and high project performance (Dai and Wells, 2004; Kaleshovska, 2014).

The present NGO study shows that effective PM office scored a high standardised factor loading ($r^2 = 0.77, p < 0.001$), confirming the value of this explicit resource in both a developing and developed context by organizations.

Second, PM methodology, standards and process are identified as a key resource in organisational PM resources in the PM literature (Gunnarson *et al.*, 2000; White and Fortune, 2002; Mathur *et al.*, 2007, 2013; Fortune *et al.*, 2011; Golini and Landoni, 2014). Further, it supports managing quality projects (Milunovic and Filipovic, 2013) and PM success of the organisation (Labuschagne and Steyn, 2010). However, this does not contribute to the project success of an organisation (Wells, 2012). The present study shows that this resource (standardised factor loading (r^2) = 0.82, $p < 0.001$) is most explained compared with other resources in organisational PM resources in NGOs and is considered a critical resource for NGOs.

Third, PM tools and techniques are revealed as key organisational PM resources (Fox and Spence, 1998; Thamhain, 1999; Kloppenborg and Opfer, 2002; Jugdev and Mathur, 2006b; Mathur *et al.*, 2007, 2013; Benser and Hobbs, 2008; Fortune *et al.*, 2011). Previous studies revealed that PM tools and techniques contribute highly to successful project operations (White and Fortune, 2002; Patanakulet *et al.*, 2010; Fortune *et al.*, 2011). The present study shows that PM tools and techniques scored a high standardised factor loading ($r^2 = 0.80, p < 0.001$) in the organisational PM resource and is recommended as a critical resource for NGOs.

Finally, effective project communication systems and technology are identified as an important resource in organisational PM resources in the PM literature (Verma, 1995; Mathur *et al.*, 2007, 2013; Relich and Banaszak, 2011; Cervone, 2014). Further, project communication systems contribute to the quality and productivity of project team and project success of organisations (Relich and Banaszak, 2011; Cervone, 2014). This study recognises this as an important resource for improving effective communication among team members; therefore, the study recognises this as a critical resource (standardised factor loading (r^2) = 0.72, $p < 0.001$) in the organisational PM resources of NGOs. The PM information received very low variance because operating NGOs in Sri Lanka may not use sophisticated project management software.

5.3 Collaborative social resource

The EFA and CFA selected four items, namely, project advisory from donors, NGOs intra and consortium meetings, networking with stakeholders and project marketing, which were found with high standardised regression estimates (r^2) as dominant elements of collaborative social PM resources. Table 9 shows the standardised factor loading of each item that explained collaborative social PM resource.

First, project advisory from donors is considered an important collaborative social PM resource. This is an explicit resource since advisory commonly takes place from the donors formally through meetings or written manuals (Agg, 2006; Coston, 1998). This supports the project teams in acquiring donors' expert advice and requirements for executing projects (Pact, 2012). Further, donors' advisory is very helpful for NGO team members for organising their projects effectively (Lipsky and Smith, 1990). Donors share their experience and expertise with the project teams to plan and implement projects well; additionally, they provide much monitoring and evaluation support to project teams, which highly support project success in NGOs. The study shows that project advisory from donors scored a high standardised factor loading ($r^2 = 0.73, p < 0.001$) in collaborative social PM resources and is therefore considered a critical resource in NGOs.

Second, NGOs intra and consortium meetings are considered a key resource in collaborative social PM resources. This is an explicit resource since these meetings are

usually formal and recorded as documents. The intra and consortium meetings are highly helpful for team members to know PM practices among the NGOs and set common standards for implementing community development projects (Bennett, 2014; Currian and Hedlund, 2011). Further, NGO staff commonly attend consortium and cluster meetings, which helps them to share their project experiences among NGOs' staff members and to learn about every NGO project in their region. Therefore, it is much easier for NGOs to organise their projects among NGOs, as well as share knowledge and skills of project practices to help improve staff capacities of NGOs. The study shows the standardised factor loading of NGOs' intra and consortium meetings is $r^2 = 0.67$ ($p < 0.001$) in collaborative social PM resources and is recognised as a critical PM resource for NGOs.

Third, networking relations with stakeholders is revealed as an important resource in collaborative social PM resources. Networking with stakeholders means that project staff members have informal interactions discussing project activities with project stakeholders. This takes place through informal meetings, telephone conversations or other informal events. Findings in this study (standardised factor loading (r^2) = 0.71, $p < 0.001$) suggest it is also a critical resource in collaborative social PM resources.

Finally, project marketing is identified as an important resource in collaborative social PM resources. Project marketing events take place through inauguration meetings, awareness programs, home visits, exhibitions, theatre programs and community meetings in NGOs. Mostly, these kinds of event take place formally and stakeholders' views are recorded as documents for project-management team discussions. However, whole discussions and subjective feelings of stakeholders cannot be effectively presented as documents in all cases. Therefore, this resource has highly tacit characteristics and is a resource rarely discussed in PM literature within the context of PM resources. However, this study recognises this as a critical systemic knowledge-based resource that may facilitate adaptation to external environments (Miller and Shamsie, 1996). The study shows that project marketing events scored a high standardised factor loading ($r^2 = 0.72$, $p < 0.001$).

6. Discussion

This paper extends existing work to examine the structure of PM resource profiles in NGOs and makes two contributions to the literature. The first is that it identifies that resource combinations, a Penrose perspective rather than resource types may support operational project capabilities. The second is that it identifies the possible impact of the post-conflict country context on the project resources and capabilities of firms.

For the first contribution, earlier work classified project management as a strategic firm asset (Jugdev, 2004), the characteristics of PM resources (Jugdev and Mathur, 2006b) along with the associations between PM resource characteristics and PM process outcomes (Perkins *et al.*, 2019). More recent work has explored the nature of strategic resources in a single sector of organizations (Energy) in a region (Al-Hanshi *et al.*, 2020). This study extends these contributions to identify the resource combinations of tangible and intangible resources in organizations a post-conflict country environment. This is in contrast to Barney's (1991) approach that is embedded in the PM literature (Appendix 1) that would suggest specific resource characteristics would be valuable to organizations and provide additional support for the adoption of a Penrose (1959) perspective to the RBV in project management. In the Barney (1991) view, local and international NGOs would have different profiles as they vary in their access to resources that may have distinctive characteristics. Since the findings of this research indicate otherwise, it suggests that resource combinations, a Penrose (1959) perspective, rather than individual resource characteristics, support the delivery of project activities by organizations which is a theoretical contribution to project management research (Müller and Klein, 2018).

For the second contribution, using this Penrosean perspective provides an avenue to identify the possible role of the post-conflict country context in shaping organizational resource characteristics and combinations. While research has examined the coevolution of company/customer capabilities within the context of a project and the path of development of the capabilities of a project based organization over time, extant research has not identified the role of country environments in shaping the project resources and capabilities of firms. The findings (Table 3) indicate there was little difference in resource profiles between international and local NGOs in Sri Lanka, a post-conflict country. If PM resources were simply generated by the firm, international organizations would have radically different resource profiles to local firms. International firms may have had a higher level of codified PM resources such as Maturity models while local firms may have relied on tacit or informal resources. This extends existing work that has identified operational and dynamic capabilities of project supplier firms by suggesting that these capabilities are present in a number of firms operating in a given setting rather than individual firms involved in complex project delivery (Zerjav *et al.*, 2018).

This finding suggests that the external environment performed a shaping role and required all firms to adapt to the complex patterns of relationships that exist in post-conflict country settings (Millar, 2017). For example, the findings for explicit organizational level PM resources of effective PM offices contradict the findings for team resources, which may reflect the differences between daily interaction with local Sri Lankan communities and managing relationships with external international bodies. Sri Lankan NGOs are also required to maintain interactions with community stakeholders who may prefer relational means of communication and interaction over codified information exchange via documents. NGO teams may rely on relational, informal coordination and communication strategies for working together in the Sri Lankan environment. At the same time, NGOs are required to maintain formal relationships with funding agencies, governments and international bodies who monitor and evaluate their activities. These organizations will require formal updates and codified information resources (Golini *et al.*, 2015).

In a country context where competition may inflame latent tensions, formal project capacities or capabilities may serve a positive signalling role to join collaborative activities, such as large-scale programs rather than a “negative” attempt to demonstrate competitive advantage over rivals (Davies and Giovannetti, 2018). In a post-conflict country, these formal competencies demonstrate a given NGOs investment in resources to support collaboration with stakeholders, such as international military forces who have defined structures that require defined project communication and coordination systems. In this way, they enable extended patterns of collaboration with multiple stakeholders without creating conflict in communities.

These ideas are supported by the findings of both networking relations with stakeholders and project marketing both being important collaborative social PM resources. NGO project staff members have informal networking relationships with grassroots level organisations, relevant government departments and beneficiaries. These differing repeated interactions among stakeholders has been recognized in previous research as an approach for establishing working relationships and shaping emergent project outcomes (Missonier and Loufrani-Fedida, 2014). These approaches are valuable as researchers have found that deterministic stakeholder identification and analysis frameworks are of limited value in environments with complex relationships, such as post-conflict countries (Jepsen and Eskerod, 2009).

Organizations in this study may have to maintain “dual personalities” that meet the needs of both host communities and external parties. The issue of ambidexterity has been examined from the perspective of intangible resource deployment in IT projects (Turner *et al.*, 2015). The resource profiles identified in this study may provide evidence of socialized control

processes in a post-conflict project setting. These adaptations are countrywide as organizations in this study, both local and domestic, develop ambidextrous resource profiles that can serve both local communities and international bodies.

For organizations seeking to deliver projects in developing countries, the findings indicate that organizations seeking to operate in post-conflict environments develop relational collaborative social resources to adapt team and organizational resources to overcome resource and institutional constraints. The findings indicate that in post-conflict country environments, informal internal mechanisms, such as brainstorming sessions and success and failure stories, are used to transfer accumulated experience within organizations (Xue *et al.*, 2016). An analysis at the resource profile level of organizations in this study indicates team PM competencies, such as team best practices, are not a critical element in Sri Lankan organizations, which contrasts with existing findings from the literature (Ofori, 2014).

7. Conclusion

The lessons learnt from NGOs can be of value to other organisations seeking to operate in post-conflict environments. The findings from this research reveal that organizations in Sri Lanka establish resource profiles that meet domestic and external requirements. For the management of these organizations, recognition of the inherent contradictions of this strategy can enable the optimization of resource profiles, improving organizational efficiencies.

Specifically, in team PM resources, brainstorming sessions and success and failure stories are considered knowledge-sharing activities through team interactions that enable stronger sharing of PM knowledge and skills within teams. Team cohesion and trust and team PM values were considered team cultural characteristics, encouraging teams to work together with a common interest and mutual understanding towards project objectives. The management implications of enhanced team resources may result in formalisation of internal processes, such as information sharing and procedures. However, lower reliance on collaborative resources may reduce an organization's ability to engage with the needs of host communities. NGOs may need to explore methodologies, such as Agile, and techniques, such as design thinking, that explicitly incorporate customer/stakeholder feedback. While there is a tendency to consider agile methodologies as the antithesis of formal planning, several hybrid approaches provide both flexibility and oversight (Marques and da Cunha, 2019).

The findings from this research suggest that the emerging management for a stakeholder's perspective may be more appropriate in a post-conflict environment. Similarly, NGOs working collaboratively with others may need to adopt governance strategies that allow flexibility while still providing the monitoring and control required by external bodies. In organisational PM resources, effective PM office, PM methodology, standards and process, PM tools and techniques assist in improving the project operations through providing advice, and appropriate methods and means, respectively. The study confirms the importance of collaborative social PM resources that comprise a mixture of formal and informal knowledge-sharing activities with external bodies. Therefore, for project organizations seeking to deliver outcomes in these contexts, collaborative social PM resource is a very significant resource for transferring knowledge across stakeholder networks. At the same time, the collaborative means promotes team members' future project operations through knowledge transfer, not only between immediate participants but also among stakeholders.

Overall, the study has used insights from NGOs involved in international and local development projects to extend current knowledge of PM resources. While NGOs are distinctive, the critical PM resources identified here may be of value to private and public organizations seeking to develop project resource profiles adapted to emerging markets.

For these organizations, the development of collaborative social capacities may enable adaptation to a new host environment, supporting the subsequent development of appropriate team and organizational capacities. Organizations may also need to adopt new evaluation approaches that explicitly recognize the dual nature of operating in these environments. Private and public organizations seeking to work in post-conflict environments may need to adapt existing project processes to incorporate participatory evaluation approaches that enable the incorporation of community input. These organizations may also go beyond quantitative metrics to collect qualitative user feedback in the form of narratives and stories.

There may be distinct differences in resource profiles between local and international private sector organizations, in contrast to the findings of this research. Local organizations may have community relationships and may develop informal resources. They may not develop formal project resources unless they are working with an international client such as a foreign military that requires formal communications. In contrast, international organizations may have to develop collaborative social capacities as they are required to both adapt to the post-conflict environment and report to external parties. Further, they may be required to provide accountability for sustainability and other domains that may not yet be widespread practice in post-conflict countries (Thompson and Williams, 2018).

The path of development of these capabilities in international private organizations may be of interest for future research. The trajectory of resource profile development may not be linear or deterministic; that is, from informal to formal. Previous research has identified that project resource improvement initiatives in Private organizations in Iran may be linked to other broader organisational development activities which may not follow a life-cycle process of development (Kwak *et al.*, 2015).

The findings from this study also provide a theoretical contribution to Project Management research. This work suggests that a Penrosean perspective (as discussed in Section 1.1) in which resource combinations, not characteristics, provide value can be considered for theoretical development in project management research. Future project management research could explicitly consider the compatibility and complementarity of project resources deployed by organizations, along with coordination processes that enable resource reconfiguration.

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Appendix

Appendix is available online for this article.

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