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Levels and interconnections of project success in development projects by Non-Governmental Organisations (NGOs)

Levels and interconnections of project success

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Abstract

Purpose – The purpose of this paper is to understand and identify the nature of evaluation criteria, levels and associations among levels of project success in development projects by NGOs in Sri Lanka.

Design/methodology/approach – The setting for this study is Sri Lanka, a country currently recovering from civil war and natural disasters and host to a large number of national and international NGOs involved in development projects. Data collection was conducted using a quantitative survey which obtained 447 responses. Multivariate analysis of data was conducted using confirmatory factor analysis and structural equation modelling.

Findings – The study confirmed that overall project success in NGOs could be assessed in three levels: project management (PM) success, project success and NGO success. The results conclude that there are strong associations among the three levels of project success; moreover, PM success and project success are indispensable for achieving NGO success.

Originality/value – This study extends existing research to confirm the presence of the three levels of project success and the interconnections among them. These findings can support subsequent research on development projects and also support the design of holistic evaluation tools to support project practices in NGOs.

Keywords Developing countries, Project success, Project management success, Development project, Non-profit sector

Paper type Research paper

1. Introduction

Development projects are aimed at providing support to communities and countries in the form advocacy, health, non-formal education, relief and capacity building (Hermann and Pagé, 2016; Bagci, 2003) at community, national and international levels (Banks *et al.*, 2003; Bagci, 2003). These projects are difficult to evaluate as the outcomes are not easily captured with quantitative metrics; in addition, development projects involve a heterogeneous mix of stakeholders (Easterly, 2009) who may be from the public sector, private sector and community residents. In these projects, the target customer or beneficiary is a community where boundaries are not clearly defined (Golini and Landoni, 2014). Further, the beneficiaries from the project's outputs are usually not funding the project (Ahsan and Gunawan, 2010). Recently, there has been an increase in donors' funds, human capital and international bodies engaged in humanitarian development activities (UNDP, 2014; Diallo and Thuillier, 2005).

NGOs function particularly for humanitarian-oriented activities, which are not addressed by the private or public sectors and focus on direct interaction with the community in advocacy, health, non-formal education, relief and capacity building, etc. (Nanthagopan, 2011; Bagci, 2003; Lusthaus *et al.*, 2002; Lyons, 2001; CEEDR, 2001). NGOs form an essential part in the delivery of development projects as they operate in turbulent natural, economic



and social environments to support rebuilding vulnerable communities (Weerawardena *et al.*, 2010). NGOs engage with the unique challenges of development projects and coordinate complex groupings of stakeholders to mobilise the resources required to deliver effective services to communities (Yalegama *et al.*, 2016). These characteristics suggest that it is not sufficient only to understand the levels of project success along with the interconnections of project success among these levels.

Sri Lanka's voluntary sector has a long history (Orjuela, 2005; Wanigaratne, 1997). Recently, a 30-year long civil war occurred in the country and a number of NGOs were created to respond to community disruption created by this event (DeVotta, 2005). Later, a tsunami struck the country in 2004, killing around 35,000, displacing 1m Sri Lankans and causing economic damage estimated at \$1,316m (EM-DAT, 2014). Recovery from both of these occurrences has been aided by international support channelled through various funding agencies (Yalegama *et al.*, 2016; National Secretary for Non-Governmental Organizations, 2014). Therefore, the context of development projects in Sri Lanka is highly distinctive and an appropriate location for studying NGOs' development projects and the evaluation criteria of project success.

The evaluation of project success is critical for NGOs to both show performance (Camilleri, 2012) and demonstrate accountability to stakeholders, which can enhance their fund mobilising ability, enabling these organisations to sustain activities in communities (Golini and Landoni, 2014; Hermano *et al.*, 2013; Ika *et al.*, 2012). However, project success is a multi-dimensional domain that incorporates a range of factors and levels, a perspective that has been overlooked in examining development projects involving NGOs. Therefore, the study aims to identify the evaluation criteria of project success, understand the levels of project success of NGOs involved in development projects and identify the associations existing among the levels of project success in NGOs.

2. Literature review

2.1 *Evolution of perspectives on project success*

Early conceptualizations of the evaluation criteria of project success focused on the achievements of defined objectives or outcomes, such as time, cost and quality (Westhuizen and Fitzgerald, 2005). Currently, a broader range of criteria, including stakeholder satisfaction (Baccarini, 1999; Schwalbe, 2004), product success, business and organisational benefit (Globerson and Zwikael, 2002; Thomsett, 2002; Redmill, 1997) team development (Atkinson, 1999; Baccarini, 1999) and the quality of project management (PM) process (Ika *et al.*, 2012), is being incorporated. Previous research emphasised the levels of project success in private sector organisations; however, the context of development projects in an NGO setting is very rarely researched. NGOs' activities are project based and currently extend to all sectors of social life, such as relief, welfare, development programs, environmental issues, human rights, democracy building, conflict resolution, cultural preservation and many other areas of socio-economic development (Ika, 2012; Lewis and Kanji, 2009; Bagci, 2003; Korten, 1990). The unique requirements of NGOs may also be reflected in how project success is evaluated by these organisations. The researcher focused on literature concerning the assessment of development projects and other private sector projects to develop a conceptual idea of how project success is evaluated in different sectors (Ika, 2012; Diallo and Thuillier, 2004; Cooke-Davies, 2002).

De Wit (1988) and Cooke-Davies (2002) classified project success into the connected domains of PM success (cost, time and quality) and project product success (benefits derived from use of a project's outputs) (Pinkerton, 2003). Four distinct dimensions of project success were identified by Shenhar *et al.* (1997): project efficiency, customer impact, organisational success and future orientation. Current research reflects this multi-dimensional approach (ul Musawir *et al.*, 2017). Research has identified the dimensions of PM

success, repeatable PM success, project success (Sutton, 2005) and corporate success (Cooke-Davies, 2002). Hence, project success is defined holistically and project delivery is linked to overall organisational success.

2.2 Levels and evaluation criteria of development project success

In complex, uncertain projects such as development projects, success or failure are not binary outcomes (Sutton, 2005) and degrees of success and failure can exist. The multi-dimensional nature of development project success was identified by Diallo and Thuillier (2004) who examined the perceptions of seven groups of stakeholders: coordinators, task managers, supervisors, project team, governance team, beneficiaries and country residents. Evaluation criteria were also identified, such as beneficiary satisfaction, project outputs delivered to agreed standards, traditional iron triangle elements of time and budget and positive perception of the project by external stakeholders. Table I summarises the extant research of the levels of project success in development projects by non-profit organisations and other private sector projects.

Whilst Ika *et al.* (2012) used factors comprising time, cost, objectives, relevance, impact and sustainability to evaluate the project success of World Bank projects, evaluation criteria can occur at multiple levels (Cooke-Davies, 2002). Although there is a significant amount of

Levels of success	Explanations	Evaluation criteria	Development projects by non-profit organisations	
				Other private sector projects
PM success	Development project creates desired outputs Development projects are completed according to planned time, budget, quality and scope parameters	Time Budget Quality Scope	Njeri and Were (2017), Ika (2012), Ika (2009), Diallo and Thuillier (2004)	Berssaneti and Carvalho (2015), Papke-shields <i>et al.</i> (2010), Agarwal and Rathod (2006), Westhuizen and Fitzgerald (2005), Dvir and Lechler (2004), Thomsett (2002), Cooke-Davies (2002), Globerson and Zwikael (2002), Atkinson (1999), Baccarini (1999), Redmill (1997), Blaney (1989), De Wit (1988), Duncan (1987)
Project success	Development projects' outputs deliver the desired outcomes	Customers/ Stakeholders' satisfaction Project impacts Project sustainability Contribution to development objectives	Ika <i>et al.</i> (2012), Ika (2012, 2009), Diallo and Thuillier (2004)	Serra and Kunc (2015), Zwikael and Smyrk (2012), McLeod <i>et al.</i> (2012), Sutton (2005), Schwalbe (2004), Pinkerton (2003), Jiang <i>et al.</i> (2002), Globerson and Zwikael (2002), Cooke-Davies (2002), Thomsett (2002), Baccarini (1999), Shenhar, Levy and Dvir (1997), Redmill (1997), De Wit (1988), Pinto and Slevin (1988), Tuman (1986)
NGO organisational success	Development projects' outputs and outcomes contributes to the overall success of the NGO	Achieving organisational vision, mission and objectives Stakeholders' reputation and rapport Sustainability	Ika <i>et al.</i> (2012), Ika (2012)	Serra and Kunc (2015), McLeod <i>et al.</i> (2012), Dvir and Lechler (2004), Cooke-Davies (2002), Shenhar <i>et al.</i> (1997)

Table I.
Levels of project success

research of factors and criteria, association among the levels of project success is not yet known. The aim of this research is to identify relationships among the levels of project success (Hoyle, 1995).

2.3 Conceptual framework and hypotheses

Models proposed by Cooke-Davies (2002) and Sutton (2005) categorised project success into three levels, which are PM and project and organisational success. PM success focuses on completing the project within the traditional parameters of time, budget and quality to assess the project efficiency and outputs of projects in the short term. From the NGOs' perspective, assessment is not limited to the first level of delivering projects within time, budget, scope and quality parameters because NGOs are required to be accountable to stakeholders by showing how well donors' funds well produced impacts to the community (Ika and Donnelly, 2017; Salafsky and Margoluis, 1998). In practice, these levels may be linked but the extent to which this occurs in NGOs is not yet known. The first hypothesis is:

H1. PM success directly contributes to the NGO perceptions of development project success.

Project success broadly assesses stakeholders' satisfaction and impacts of projects on the community. This evaluates the outcomes in the medium term in areas such as stakeholders' satisfaction with the broad and sustained positive impacts in the community. Meeting the above-stated assessment criteria may ensure future funding from the donors (Nanthagopan, 2010):

H2. PM success directly contributes to NGO success.

This evaluates how project outcomes impact on NGO strategy and success (Aldashev and Verdier, 2009; Ly and Mason, 2012). This area is of great interest for NGOs as they are required to compete for donor and state funding geographically (community vs international NGOs) and for some services, with private organisations (Nanthagopan *et al.*, 2016). Therefore, assessment criteria for NGOs' projects need to examine how NGO projects support achievement of the NGO's vision, mission and objectives, how they improve the reputation and stakeholders' rapport and how they will contribute to the NGO's sustainability (Nanthagopan and Williams, 2016). The proposed conceptual model is shown in Figure 1. The third hypothesis is therefore:

H3. Project success directly contributes to NGO success.

3. Research methods

The aim of this study is to develop an understanding of the nature of evaluation criteria for project success and to identify the association among the levels of project success in NGOs. Statistical software packages were used to analyse the final survey data. The Statistical Package for Social Sciences (SPSS v16) was used for preliminary data analyses (Hopkins, 2008) and Analysis of Moment Structures (AMOS v21) was used analyse the measurement model and test the hypothesised model (Byrne, 2013). Univariate and multivariate analyses were used to examine the variables in the study. In statistical analyses, the first step is to understand the data set by examining individual variables using univariate analyses techniques to summarise the data and analyse the individual variables (Bryman and Cramer, 2009) and multivariate analysis to analyse the relationships of the multiple variables (Byrne, 2010; Abdi, 2003). Commonly, multivariate procedures are recommended if the study has multiple variables and requires identifying associations between variables (Byrne, 2010; Abdi, 2003).

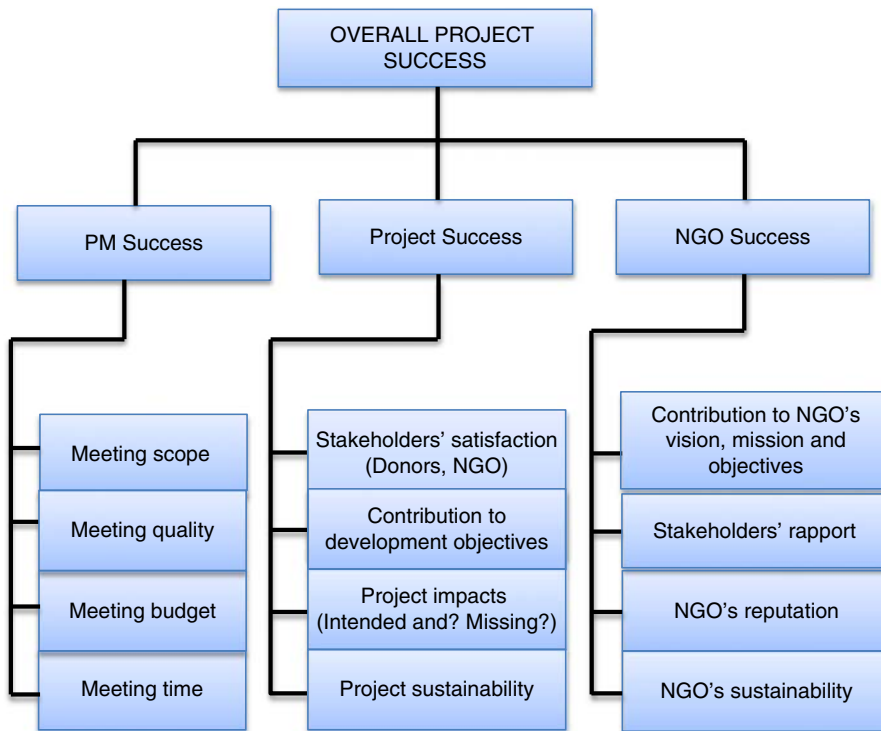


Figure 1.
Three levels of project success

This study is primarily oriented to understand the nature of evaluation factors for project success and identifying associations among the multiple variables; therefore, the researcher applied two main multivariate techniques: confirmatory factor analysis (CFA) and structural equation modelling (SEM) (Byrne, 2013). SEM is now used in many fields of study, since it is widely recognised as an important multivariate technique when studying relationships among latent constructs consisting of multiple indicators (Hair *et al.*, 2006; Cooper and Schindler, 2003). However, the levels of project success were not examined by the SEM technique in the literature. Further, project success assessment criteria applicable to development projects by NGOs has been researched rarely and has not been examined empirically using multivariate analysis techniques. This is a new initiative for using the multivariate techniques CFA and SEM according to the literature, as this study demands use of these techniques for testing and identifying associations among the levels of project success.

3.1 Justification and selection of CFA and SEM

CFA is generally applied to understand the associations between observed variables and underlying latent constructs (Brown, 2014). As CFA is used to examine that the measures of constructs are consistent with the literature, it is applied in this study to evaluate the overall measurement model based on the latent constructs of project success.

SEM is used to determine whether theoretical models are valid using empirical data (Lei and Wu, 2007). SEM has been deployed to identify hypothetical relationships between organisational factors and project complexity (Qureshi and Kang, 2015). The present study is undertaken in the new context of NGOs and aims to understand the evaluation factors of

project success and identifies associations among the levels of project success. Therefore, it requires the highly sophisticated SEM technique for testing proposed relations among latent constructs and assessing structural model validity for model development (Hair *et al.*, 2006; Stephenson *et al.*, 2006). SEM can determine associations among the levels of project success of NGOs. The primary role for SEM in this study is to derive a model which explains relationships among the levels of project success (Hoyle, 1995).

3.2 Data collection

Data were collected using a self-administered structured questionnaire (Mazzocchi, 2008; Hair *et al.*, 2003) (Appendix 2). The questionnaire followed the validated survey instruments of Ika *et al.* (2012), Diallo and Thuillier (2004) and De Wit (1988), modified to suit the context of respondents relevant to NGO development projects in Sri Lanka (Table AI). The researcher conducted the pilot study with 30 respondents from the target population of NGOs in order to ensure the adequacy and credibility of the survey instrument and that the research protocols and methods could work well (Thabane *et al.*, 2010; Lancaster *et al.*, 2004; Teijlingen and Hundley, 2002). The pilot study indicated that the instrument was reliable and valid. The final survey instrument consists of 12 questions to assess NGOs' project success. The questionnaire comprised three divisions: PM success, project success and NGO success, with each division consisting of four questions. A seven-point Likert scale is used in this study for assessing the study variables (Jugdev and Mathur, 2006), since it is recommended for increasing the quality of data characteristics. Such a longer discrete scale acts slightly more like a continuous scale and this permits the effective performance of statistical parametric and factor analysis (Preston and Colman, 2000; Hinkin, 1998).

The researcher selected the "in-person" method of data collection in order to increase the credibility of data collection as it made it possible for respondents to get additional details and clarification on the nature of the study (Bowling, 2005). However, the researcher did not interrupt respondents while they were completing the questionnaire. First, the researcher contacted managers of selected organisations by telephone or mail to inform them of the research objectives of the study and to receive their consent for this study. Thereafter, he delivered the questionnaire in person and collected completed questionnaires from respondents, which improved the quality of data collection and increased response rates (Bowling, 2005).

3.3 Sampling procedure

In total, 1,426 NGOs are registered in Sri Lanka with the National Secretariat for NGOs (2014), of which 1,042 are local NGOs and 384 are international NGOs. For this research, the sample size was 500 local and international NGOs, which represents 35 per cent of the population. The selection of the sample size was based on the designated statistical analysis technique, SEM, which requires the largest possible sample size (Chin and Newsted, 1999). As the study population contained both local and international NGOs, a stratified random sampling technique was used to select a representative sample in equal proportions from each stratum (Levy and Lemeshow, 2009). By selecting a randomised probabilistic sample, it was possible to increase the generalisability of the survey findings to the population (Levy and Lemeshow, 2009). The researcher contacted 500 NGO managers, of which 463 managers indicated their interest. In total, 447 questionnaires were filled out but 16 questionnaires were eliminated based on incomplete data. Local NGOs represent 73 per cent (327) of the sample size and 27 per cent (120) represent international NGOs. The local NGOs represent 31.4 per cent and the international NGOs represent 31.1 per cent of the total individual populations.

Projects are classified under 11 categories, which are Livelihoods, Infrastructure, Relief and Disaster Management, Water and Sanitation, Health and Nutrient, Training and Education, Protection, Social Mobilisation, Capacity Building, Women Development, Gender

Equity and Others. The Livelihoods and Training and Education projects are highly represented with 31 per cent included in the sample, whilst the Gender Equity and Women Development categories are less represented with 11 per cent in the sample. Other project categories' contributions range between 7 and 10 per cent of the sample. Project managers' experience in NGO projects is categorised as 0–5 years, 6–10, 11–15, 16–20 and 20 years and above working in NGO projects. Managers having experience 0–5 and 6–10 years are represented highly as 68 per cent of the sample whilst those with 11–15 years represent 17 per cent. Other categories are represented in approximately equal contributions. Education of selected NGO managers is organised as high school, bachelor's degree, postgraduate degree and doctoral degree. NGO managers holding a bachelor's degree are highly represented at 45 per cent in the sample, followed by higher education at 32 per cent and postgraduate degree at 22 per cent. Those managers holding a doctoral degree contributed the least (1 per cent) of the sample. Some 77 per cent of NGO managers responded that they have undertaken PM courses and 20 per cent stated that they have not undertaken any PM courses, leaving 3 per cent that did not respond to this question.

4. Survey study results

4.1 Descriptive statistics

Descriptive statistics related to central tendency, dispersion and normal distribution of survey measures were calculated (Mazzocchi, 2008). Project success is divided into three levels of PM success, project success and NGO success and four items were used to evaluate each level of project success. Table II presents the descriptive results for all items.

All items of PM success assessment factors achieved high mean values: meeting scope 5.31 (± 1.19), meeting quality 5.24 (± 1.18), meeting time 5.20 (± 1.31) and meeting budget 5.09 (± 1.30). Next, in project success, stakeholders' satisfaction (mean score 5.28, ± 1.23) and project sustainability (mean score 5.28, ± 1.30) achieved high mean values, whilst contribution to development objectives (mean score 4.76, ± 1.54) and project impacts (mean score 4.76, ± 1.41) scored lower mean values. Finally, in NGO success, contribution to NGOs' vision, mission and objectives (mean score 5.58, ± 1.17) and NGOs' reputation (mean score 5.45, ± 1.20) achieved high mean values. Stakeholders' rapport (mean score 4.82, ± 1.60) and NGO sustainability (mean score 4.94, ± 1.41) scored lower mean values.

Types of project success	Mean	Median	Mode	SD	Skewness	Kurtosis
<i>PM success</i>						
Meeting scope (Q1)	5.31	6.00	6.00	1.19	-0.64	0.13
Meeting quality (Q2)	5.24	5.00	6.00	1.18	-0.60	0.28
Meeting time (Q3)	5.20	5.00	6.00	1.31	-0.58	-0.17
Meeting budget (Q4)	5.09	5.00	6.00	1.30	-0.56	-0.08
<i>Project success</i>						
Stakeholders' satisfaction (Q5)	5.28	6.00	6.00	1.23	-0.86	0.58
Contribution to development objectives (Q6)	4.76	5.00	6.00	1.54	-0.37	-0.71
Project impacts (Q7)	4.76	5.00	6.00	1.41	-0.59	-0.25
Project sustainability (Q8)	5.23	5.00	6.00	1.30	-0.76	0.33
<i>NGO success</i>						
Contribution to NGOs' vision, mission and objectives (Q9)	5.58	6.00	6.00	1.17	-0.64	-0.06
Stakeholders' rapport (Q10)	4.82	5.00	6.00	1.60	-0.47	-0.70
NGO reputation (Q11)	5.45	6.00	6.00	1.20	-0.64	-0.24
NGO sustainability (Q12)	4.94	5.00	6.00	1.41	-0.53	-0.30

Note: $n = 447$

Table II.
Project success

The data set is a representative sample of the total population of NGOs, having used a stratified random sampling technique. The data mean and median values are in the range 4–6, which shows NGOs' development projects success rates are middling in Sri Lanka. Further, skewness and kurtosis values for all items lie between -1 and $+1$; therefore, all levels of project success items closely meet univariate normality (Garson, 2012). Accordingly, the data are adequate for conducting multivariate analysis (Hair *et al.*, 2006).

4.2 Specification of measurement model for project success

CFA Model 1 (Figure 2) was drawn based on the findings from an exploratory case study and literature review. The findings explained the indicators of the latent factors. The first factor, PM success, consists of four indicators: Q1, Q2, Q3 and Q4; the second factor, project success, consists of four indicators: Q5, Q6, Q7 and Q8; and the third factor, NGO success, consists of four indicators: Q9, Q10, Q11 and Q12.

The results for the absolute fit indices show the normed χ^2 (χ^2/df) value is 4.501, GFI is 0.967, RMSEA is 0.089, P Close value is less than 0.05 and SRMR is 0.044. The incremental indices results show that NFI is 0.922, TLI is 0.920 and CFI is 0.938. The parsimonious fit indices results indicate that AGFI is 0.877 and PNFI is 0.712. The results for these three indices demonstrate that the model is a poor fit (Hu and Bentler, 1999; Byrne, 2013; Wheaton, 1987). AVE values for the latent factors of PM success and NGO success were satisfactory, as were the latent CR values (Hair *et al.*, 2010; Farrell, 2010) (Table III).

4.3 Elimination of items for CFA Model 1

Table IV shows the regression weights of indicators and factors in the CFA Model 1, which give poor results and the researcher therefore checked the high SRC items for elimination. The Q6 factor loading is less than 0.6 and its SRC value is greater than 1.96 with item Q4; therefore, the item has been considered for elimination in order to improve the measurement model fit (Schumacker and Lomax, 2004).

4.4 CFA Model 2: three levels of project success

Model 2 (Figure 3) was drawn after eliminating high SCR item Q6. PM success consists of items Q1, Q2, Q3 and Q4, whilst project success consists of items Q5, Q7 and Q8 and NGO success consists of items Q9, Q10, Q11 and Q12.

The results for the absolute fit indices show a normed χ^2 (χ^2/df) value of 2.948, the GFI is 0.942, the RMSEA is 0.079, a P Close value of less than 0.05 and the SRMR is 0.035. Incremental indices results show that NFI is 0.943, TLI is 0.943 and CFI is 0.957. The parsimonious fit indices results indicate that AGFI is 0.907 and PNFI is 0.703, which indicates a good fit model as this normed χ^2 value is less than 3.0 (Wheaton, 1987; Carmines and McIver, 1981), RMSEA is less than 0.08 and P Close is greater than 0.05 (MacCallum *et al.*, 1996). In addition, CFI is greater than the cut-off value 0.90 and SRMR is less than the cut-off value 0.08 (Hu and Bentler, 1999).

Furthermore, the CFA results indicate that each factor loading for the reflective indicators is statistically significant at the 0.001 level. AVE values for the latent factors are all acceptable with a significance level greater than 0.5 (Hair *et al.*, 2010). In addition, all CR values were satisfactory at greater than 0.70 (Hair *et al.*, 2010; Farrell, 2010); therefore, the researcher accepted this model and used it to proceed to the next step to SEM (Table V).

4.5 SEM: three levels of project success

After achieving a good fit for the measurement model, the next step is to test the hypothesised causal relationships among the constructs of the model. SEM is used to test

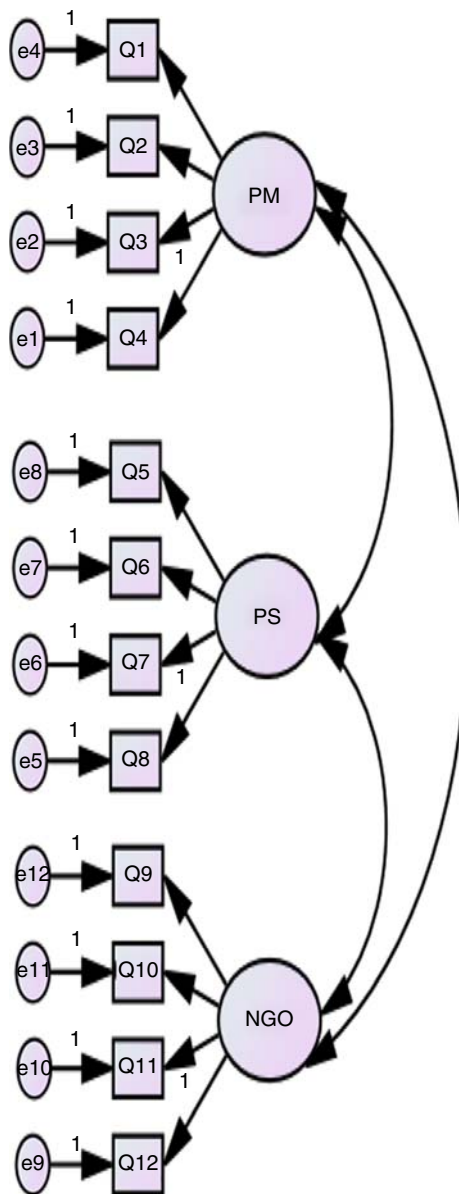


Figure 2. CFA Model 1

the hypothesised causal relationships. SEM provides a more appropriate inference framework for mediation analyses and for other types of causal analyses, as well as helping to develop sound theoretical frameworks through rigorous testing (Hoe, 2008). The SEM process consists of two steps, which are validating the measurement model and fitting the structural model. The former is accomplished primarily through CFA, whilst the latter is accomplished primarily through path analysis with latent indicators (Figure 4 and Table VI).

Construct	Item	Standardised factor loading estimates		
		PM	PS	NGO
PM success (PM)	Q1	0.85		
	Q2	0.80		
	Q3	0.76		
	Q4	0.71		
Project success (PS)	Q5		0.77	
	Q6		0.56	
	Q7		0.60	
	Q8		0.76	
NGO success (NGO)	Q9			0.83
	Q10			0.60
	Q11			0.83
	Q12			0.61
Average variance extracted (AVE)		0.61	0.46	0.53
Construct reliability (CR)		0.86	0.77	0.82
Absolute fit index		$\chi^2 = 229.5$, $df = 51$, $\chi^2/df = 4.501$, GFI = 0.919, RMSEA = 0.089, $P_{Close} < 0.05$, SRMR = 0.044		
Incremental fit index		NFI = 0.922, TLI = 0.920, CFI = 0.938		
Parsimony fit index		AGFI = 0.877, PNFI = 0.712		

Table III.
Estimates for
CFA Model 1

Items	Loadings	SRCs		Elimination and justification
		> 1.96	> 2.58	
Q6	0.56	1	0	Removed/Low loadings + One SRCs > 1.96 (with Q4)

Table IV.
Elimination of items
for CFA Model 1

5. Analysis and discussion

Existing research on projects success has been conducted extensively in both private and public sector firms. This research sought to contribute to the literature by examining project success of NGOs' development projects at three levels, PM success, project success and NGO success (Sutton, 2005; Pinkerton, 2003; Shenhar *et al.*, 1997). The first level is PM success, which examines the meeting parameters of scope, quality, time and cost. The second level is project success, which examines stakeholders' satisfaction and project impacts and the third level is NGO success, which examines how projects support the achievement of NGOs' objectives and further to contribute to NGOs being sustained a long time in the community. The next section compares and discusses the survey study findings with previous research findings.

5.1 Measuring PM success

PM success refers to how projects are completed according to planned time, budget, quality and scope parameters (Shenhar *et al.*, 2001; Baccarini, 1999). The PM literature has extensively discussed these four elements, which are used to evaluate project success in private, public and international projects (Berssaneti and Carvalho, 2015; Ika *et al.*, 2012; Shenhar *et al.*, 2002; Pinto and Slevin, 1988; De Wit, 1988). However, this study has provided the empirical validation of the applicability of these measures to development projects. The survey findings confirmed the literature for measuring PM success with the support of four factors, namely, scope, quality, time and budget.

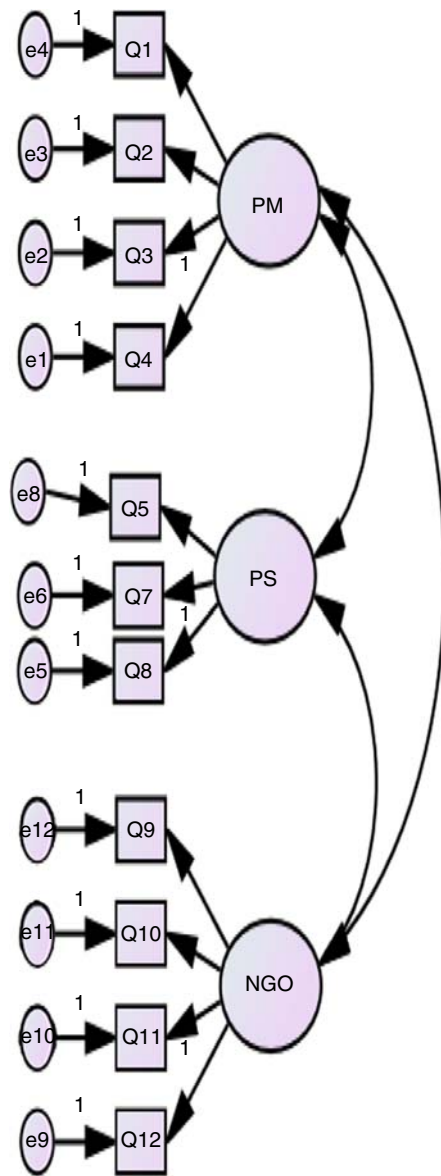


Figure 3. CFA Model 2

Scope is a measure used to evaluate PM success (Baccarini, 1999; Shenhar *et al.*, 2001; Atkinson, 1999; Maloney, 1990). The study shows that the standardised factor loading for scope is $r^2 = 0.85$ ($p < 0.001$) in PM success, confirming that scope is an important factor in NGO projects. Quality is the next factor used to evaluate PM success (Shenhar *et al.*, 2001; Tukul and Rom, 2001; Kometa *et al.*, 1995). The study shows that the standardised factor loading for quality is $r^2 = 0.804$ ($p < 0.001$) in NGOs' PM success, indicating it is an important factor. Time is the next factor used to evaluate PM success (Baccarini, 1999; Shenhar *et al.*, 2001; Atkinson, 1999; Maloney, 1990). NGOs schedule the time frame for

Construct	Item	Standardised factor loading estimates		
		PM	PS	NGO
PM success (PM)	Q1	0.85		
	Q2	0.80		
	Q3	0.76		
	Q4	0.70		
Project success (PS)	Q5		0.78	
	Q7		0.61	
	Q8		0.76	
NGO success (NGO)	Q9			0.83
	Q10			0.59
	Q11			0.84
	Q12			0.61
Average variance extracted (AVE)		0.61	0.52	0.53
Construct reliability (CR)		0.86	0.76	0.81
Absolute fit index	$\chi^2 = 120.9$, $df = 41$, $\chi^2/df = 2.948$, $GFI = 0.942$, $RMSEA = 0.079$ P Close < 0.05, $SRMR = 0.035$			
Incremental fit index	$NFI = 0.943$, $TLI = 0.943$, $CFI = 0.957$			
Parsimony fit index	$AGFI = 0.907$, $PNFI = 0.703$			

Table V.
Estimates for
CFA Model 2

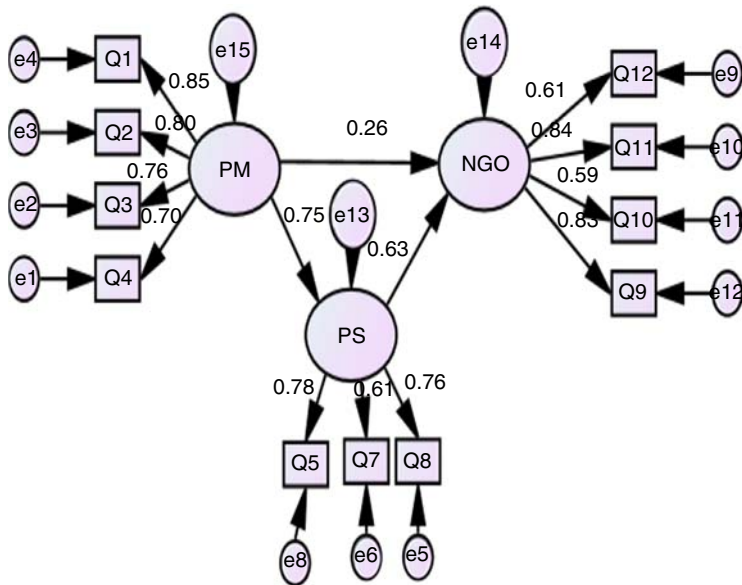


Figure 4.
SEM Model

project activities and completion of the project. However, projects may not be completed on time because NGOs face a high degree of uncertainty and they can be delayed due to unexpected circumstances, such as natural disasters, bad weather, conflict and restrictions imposed on access to project areas. This may influence the time outcomes, resulting in the slight factor loading for time, $r^2 = 0.76$ ($p < 0.001$) in PM success.

Table VI.
Estimates for
SEM model

Relationships	Hypothesis	Standardised regression estimates		
		R^2	P value	Sig. (at 0.05)
PM success → Project success	$H1$	0.75	< 0.001	Sig.
PM success → NGO success	$H2$	0.26	< 0.005	Sig.
Project success → NGO success	$H3$	0.63	< 0.001	Sig.
Absolute fit index	$\chi^2 = 120.9$, $df = 41$, $\chi^2/df = 2.948$, GFI = 0.942, RMSEA = 0.07, P Close > 0.05, SRMR = 0.035			
Incremental fit index	NFI = 0.943, TLI = 0.943, CFI = 0.957			
Parsimony fit index	AGFI = 0.907, PNFI = 0.703			

Finally, budget is used to evaluate PM success (Cooke-Davies, 2002; Hartman, 2000; Baccarini, 1999; De Wit, 1988). In a similar manner to time, NGOs budgets may change over the project period, as circumstances change in community needs and requirements. This may result in the slightly lower factor loading for budget of $r^2 = 0.71$ ($p < 0.001$) in PM success, when compared to scope and quality.

Scope, quality, time and budget were used to assess PM success, as identified by previous researchers in private and public sector organisations. Therefore, this explains that the four identified elements are common for assessing the PM success of enterprises, which suggests the body of PM knowledge developed over the last few decades can be applied to the NGO sector to create useful insights to researchers and managers in this domain.

5.2 Measuring project success

Project success refers to the degree to which development projects' outputs produce the desired outcomes. Previous studies have identified stakeholders' satisfaction, project impacts, contribution to development objectives and project sustainability as factors used to evaluate project success (Serra and Kunc, 2015; Diallo and Thuillier, 2005, 2004; Cooke-Davies, 2002; Shenhar *et al.*, 2001). However, the survey study eliminated one item called contribution to development objectives, as this factor's loading was low and it had high cross-loadings. The survey study identified three underlying elements for use in evaluating NGOs' project success, which are stakeholders' satisfaction, project impacts and project sustainability in the community.

Stakeholders' satisfaction is the first important factor used to evaluate project success. In PM literature, it is widely acknowledged that customers' satisfaction is an important element for evaluating project success in private sector organisations (Cooke-Davies, 2002; Torbica and Stroh, 2001; Liu and Walker, 1998). NGO objectives are to fulfil community needs within the constraints set by the requirement to be accountable to other stakeholders, such as government bodies, donors and other NGOs who work with them in similar projects. Therefore, they need to try to fulfil the requirements of all stakeholders, which may result in a standardised factor loading for stakeholders' satisfaction of $r^2 = 0.76$ ($p < 0.001$) in project success.

Second, the study revealed evaluating the intended and unintended impacts of projects is an important measure for evaluating project success, as emphasised in previous studies (Diallo and Thuillier, 2005, 2004; Shenhar *et al.*, 2001). Development projects are designed to provide long-term benefits to the community, which can include the promotion of community resilience that assists the community in leading themselves to live a better life. For example, if an NGO undertakes capacity development projects in the community, the NGO would see PM success as a way of evaluating successful completion of projects

in the first instance. However, it is also highly important to assess the impacts of favourable behavioural changes that have happened in the community. These behavioural impacts may be difficult to measure but can still be visible; therefore, the study shows the standardised factor loading for project impacts is $r^2 = 0.61$ ($p < 0.001$) in project success.

Finally, project sustainability is identified for evaluating NGOs' project success, an area overlooked by previous literature. The NGO context is different from that of private organisations and they have been involved in remarkable number of different types of project for community development. Their project implementations have a wider range of locations, both within the country and internationally. NGOs undertake projects in communities and leave once the project is completed; however, after completion of these projects, work should continue in the community until the community becomes resilient. Therefore, they need to look into the sustainability of the project in the specific community. For example, if it is an income-generation project, they would see how long a business would be stable and how much income it would generate for a longer period in the community. The study shows a standardised factor loading for project sustainability is $r^2 = 0.75$ ($p < 0.001$) in project success.

5.3 Measuring NGO organisational success

Past studies stressed that project success does not end with achieving scope, quality, time and budget parameters or meeting stakeholders' satisfaction and project impacts but it should also contribute to the business success of organisations (Serra and Kunc, 2015; Sutton, 2005; Cooke-Davies, 2002). Subsequently, project success contributes to achieve organisational objectives and supporting business strategies to achieve organisations' competitive advantage (Cooke-Davies, 2002; Shenhar *et al.*, 1997). Literature informed the assessment factors of contribution to NGOs' vision, mission and objectives, which are stakeholders' rapport, NGOs' reputation and NGOs sustainability (Serra and Kunc, 2015; Diallo and Thuillier, 2005, 2004; Cooke-Davies, 2002; Shenhar *et al.*, 2001). The survey study confirmed that these four elements explain the evaluation of NGO success.

Contribution to NGOs' vision, mission and objectives is identified as the first factor used to evaluate NGO success. Previous researchers emphasised that projects should help to attain organisational objectives (Shenhar *et al.*, 2001; Maloney, 1990). The survey study shows that a standardised factor loading for this resource is $r^2 = 0.83$ ($p < 0.001$) in NGO success.

Stakeholders' rapport is considered the next factor for evaluating NGO success. Execution of projects should lead to increased strong connections with stakeholders, allowing NGOs to carry out future projects with strong support and advice from stakeholders. This suggests that NGOs should strengthen relationships with their stakeholders for successful continuity of their operations. The study shows that the standardised factor loading for stakeholders' rapport is $r^2 = 0.59$ ($p < 0.001$) in NGO success.

NGOs' reputation is identified as the next measure used to evaluate NGOs' organisational success. Through increasing NGOs' reputation, NGOs' abilities to raise funds from donors, government and the public will be increased. It is not surprising therefore that the study shows that a standardised factor loading for NGOs' reputation is $r^2 = 0.84$ ($p < 0.001$) in NGO success.

Finally, NGOs' sustainability is identified as a very important measure of NGO success, which was recognised as an important measure for international development projects (Diallo and Thuillier, 2004, 2005). NGOs are not providing one-time support for the community but, instead, they need to continue their fullest support to the community for a long period. Therefore, NGO projects should contribute to their long-term sustainability, which assists NGOs' long-term survival. The study shows that a standardised factor loading for NGOs' sustainability is $r^2 = 0.61$ ($p < 0.001$) in NGO success.

The study identified that four critical factors, contribution to NGOs' vision, mission and objectives, stakeholders' rapport, NGOs' reputation and NGOs sustainability, should be used to evaluate NGO success. This is the third level of NGO success explored as an important level for evaluating the overall project success of organisations. However, this was not empirically tested in the third, individual level by previous researchers. Therefore, as this study has highlighted, this is an important level for evaluating NGOs' overall project success.

5.4 Associations among the three levels of project success

The SEM model identified relationships among the levels of project success which supported building and testing a valid model. The result shows that the standardised coefficient is 0.75 between PM success and project success, confirming that PM success has a very strong positive effect on project success. Whilst the existence of a relationship is not surprising, the strength of the association may indicate project managers in NGOs to focus on the use of simplified quantitative metrics to manage and evaluate projects rather than complex, uncertain stakeholder satisfaction measures. Similar findings have been identified in private sector firms (Berssaneti and Carvalho, 2015). Further, early work in ID project success has identified the perceived priority of short-term PM dimensions over longer-term project impact dimensions (Diallo and Thuillier, 2004). As discussed earlier, NGOs not only need to meet the needs of diverse stakeholders but also face competitive pressures. These findings may indicate the need to provide verification to stakeholders, such as funders who require immediate feedback on the success of an initiative, and may encourage NGO project managers to associate the overall success of a project strongly with its management dimensions. Since NGOs can also now compete with the private sector as social entrepreneurs, these organisations may use similar success measures and, when combined, they may result in the strong association between PM success and project success seen in this study.

The second highest association is a standardised coefficient of 0.63 between project success and NGO success, which indicates project success has a strong positive effect on NGO success. Whilst a relationship between benefits realisation activity and corporate success has been identified (Serra and Kunc, 2015), this paper extends these findings to quantify the strength of association between organisational success and project success. Finally, the standardised coefficient between PM success and NGO success is 0.26, which indicates that although there is a relationship between PM and NGO success, the relationship between other success dimensions is higher. This indicates that while short-term success may be important for NGOs to maintain the confidence of funders, an established reputation for delivering favourable project outcomes may be more valuable to sustained organisational success.

6. Conclusion

The study produced a valid model of the assessment factors for project success into three levels in the development project context by NGOs. Considerable empirical studies have been completed previously in private and public organisations for assessing project success using the parameters of meeting scope, quality, time, budget, stakeholder satisfaction and project impacts (Sutton, 2005; Schwalbe, 2004; Pinkerton, 2003; Thomsett, 2002). However, the present study focused on assessing project success in the three levels of PM success, project success and NGO success. First, in PM success, four key elements consistent with previous studies were identified, namely, meeting scope, quality, time and budget. Second, in project success, three key elements of stakeholders' satisfaction, project impacts and project sustainability were discovered. Finally, in NGO success, four key elements,

contribution to NGOs' vision, mission and objectives, stakeholders' rapport, NGOs' reputation and NGOs' sustainability, were explored.

The present study identified the interconnections amongst the three levels of project success. The study shows that significant relationships exist among the three levels of project success, in which the first level of PM success has strong effect on the second level of project success and moderate effect on the third level of NGO success. Further, the second level of project success has a strong effect on NGO success, which underlines only PM success is not guaranteed to achieve a high level of NGOs' success. Therefore, PM success and project success are vital to realising a high level of NGOs' success.

The present study sought to establish a validated framework for assessing project success and show the interconnections amongst the three levels of project success by NGOs, contributing to academic research. The study provides extended knowledge in the domain of project success from a developing country's context, i.e., Sri Lanka; however, it could be transferable to other development country settings. Previous studies were conducted in private sector organisations located mostly in a developed country's context. This study is conducted in a new setting of a post-conflict, post-disaster environment which may be applicable to other developing country contexts.

The study proposed a new validated framework for evaluating PM success and shows the connections among the levels of project success with the support of NGO development projects. Hence, NGO managers can develop new assessment schemes for project success that ultimately improve project delivery in NGOs.

Finally, the contributions and implications presented in this study can be valuable both to academic researchers and practitioners. NGOs face many challenges and difficulties in providing services and programmes to their communities, members and beneficiaries in today's competitive environment. Overall, the study enables NGO managers of development projects to understand the assessment factors for project success in different levels and their interconnections, which can aid the design of tools to support the holistic assessment of success of development projects. It also calls for actual participation of many organisational development players to properly find the key domains of project success to improve project delivery by NGOs.

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(The Appendix follows overleaf.)

PM success	Survey questions from literature	Researchers	Publications	Improved survey question for this specific NGO study
Meeting scope	The objectives identified initially were attained	Ika, Diallo and Thuillier	International <i>Journal of Managing Projects in Business</i> , Vol. 3 No. 1, 2010. Emerald Publishing	Generally we achieve the scope and objectives of a project
Meeting quality	The goods and services produced by the project conform to those described in the project documents	Ika, Diallo and Thuillier	Ditto	We usually achieve the quality deliverables of a project
Meeting time	Generally our projects meet their time objectives	Ika, Diallo and Thuillier	Ditto	We typically complete projects within the planned timescale
Meeting budgets	We are usually good at delivering projects within budget	Ika, Diallo and Thuillier	Ditto	We frequently fail to complete our projects within the planned budget
<i>Project success</i> Stakeholders' satisfaction	Generally, customers of our projects are satisfied with the outcome Project team members are usually happy working on projects Our key stakeholders are usually happy with the way our projects are managed	Ika, Diallo and Thuillier	Ditto	Generally, our stakeholders (donors, implementing NGO and beneficiary) are satisfied with the project outcomes
Contribution to development objectives	The project achieved a high national profile	Ika, Diallo and Thuillier	Ditto	Our projects frequently fail to contribute to long-term development objectives
Project impacts (intended and unintended)	There are often clearly identified intangible benefits from projects we carry out The project had a visible impact on beneficiaries	Ika, Diallo and Thuillier	Ditto	Our projects successfully produce the intended impacts as well as favourable unintended impacts
Project sustainability	The project has a good chance of being extended with additional funding	Ika, Diallo and Thuillier	Ditto	The projects have attained sustainability in the community
<i>NGOs success</i> Contribution to NGOs' vision, mission and objectives	Our projects usually result in tangible benefits for the organisation	Ika, Diallo and Thuillier	Ditto	Our projects contribute to achieving the vision, mission and objectives of the organisation

Table A1.
Examination of previous survey tools related to project success

(continued)

PM success	Survey questions from literature	Researchers	Publications	Improved survey question for this specific NGO study
NGOs' rapport	The project increased stakeholder links	Ika, Diallo and Thuillier	Ditto	Our projects fail to increase long-term rapport with our stakeholders
NGOs' reputation	The project had a good reputation among the principal donors	Ika, Diallo and Thuillier	Ditto	Overall, our projects have improved the reputation of the organisation amongst the stakeholders, government and general public
NGOs' sustainability	The project built an institutional capacity within the country	Ika, Diallo and Thuillier	Ditto	Our projects increased the fundraising abilities and sustainability of the organisation

Table AI.

Appendix 2. Project success assessment: field questionnaire

NGOs' Project Success

Project success can be defined as a project that meets its objectives within budget and on schedule, the expectations of stakeholders and supports organizational success. It can be evaluated at three levels as PM success, Project success and NGO success.

PM Success

PM success refers to the ability to achieve the project objectives, produce quality deliverables and complete the project within the planned timeframe and budget.

		Strongly Disagree						Strongly Agree
		↑						↑
	PM Success	1	2	3	4	5	6	7
1	Generally we achieve the scope and objectives of a project.	1	2	3	4	5	6	7
2	We usually achieve the quality deliverables of a project.	1	2	3	4	5	6	7
3	We typically complete projects within the planned timescale.	1	2	3	4	5	6	7
4	We frequently fail to complete our projects within the planned budget.	1	2	3	4	5	6	7

Project Success

Project success occurs when the project produces favourable impacts and stakeholders are satisfied with the project outcomes.

		Strongly Disagree						Strongly Agree
		↑						↑
	Project Success	1	2	3	4	5	6	7
5	Generally, our stakeholders (donors, implementing NGO and beneficiary) are satisfied with the project outcomes.	1	2	3	4	5	6	7
6	Our projects frequently fail to contribute to long-term development objectives.	1	2	3	4	5	6	7
7	Our projects successfully produce the intended impacts as well as favourable/unintended impacts.	1	2	3	4	5	6	7
8	The projects attained sustainability in the community.	1	2	3	4	5	6	7

NGO Success

NGO success occurs when the project has contributed to the NGO's success overall. The project contributes to achieving the organizational objectives, increasing stakeholders' rapport and reputation and helping to sustain the NGO for a long period.

	Strongly Disagree				Strongly Agree		
	1	2	3	4	5	6	7
NGO Success	1	2	3	4	5	6	7
9 Our projects contribute to achieving the vision, mission and objectives of the organization.	1	2	3	4	5	6	7
10 Our projects fail to increase long-term rapport with our stakeholders.	1	2	3	4	5	6	7
11 Overall, our projects have improved the reputation of the organization amongst stakeholders, government and the public.	1	2	3	4	5	6	7
12 Our projects have increased the fundraising abilities and sustainability of the organization.	1	2	3	4	5	6	7

About the authors

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Karen Thompson is working closely with local businesses, organisations and professional bodies, She lead real student projects in years 2 and 4 of the BA Business Studies. Projects have ranged from building a wildlife area for a local school and fundraising through to developing a sustainable transport policy for a local financial company and evaluating the carbon footprint for a construction company. She teaches Project Management at year 2 and Advanced Project Management to part-time online students. After a long career in Information Systems and Technology that included strategic consultancy, she joined Bournemouth University in 1996 to teach a range of management and systems-related topics, now focused on project management. She led the online undergraduate business programmes for three years. Currently, she engaged in research towards PhD on the role of social media in Project Management.

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