

Identification of critical capacity building challenges in public-private partnerships (PPPs) projects: The case of Tanzania

This study investigates and ranks the critical capacity building challenges (CBC) impacting the Tanzanian public-private partnerships (PPPs) projects. The strength of interactions between CBC is established, with practical solution proposals offered and benchmarked with previous studies. A total of 8 CBC were identified from a scoping review. Data was then collected from 81 PPP practitioners, and subjected to descriptive and inferential statistics. The results demonstrated a disparity of ranking of the 8 CBC among those with and without PPP experience, with the most highly ranked 4 CBC identified as ‘limited local people with experience’, ‘lack of resources’, ‘lack of successful PPP projects’, and ‘lack of permanent PPP trainers’. The least ranked was ‘lack of political will for promoting PPPs’. Strong and positive correlation between ‘inadequate qualifications’ and ‘lack of hands-on training’ was established. Suggested solutions were broadly classified in the following four categories: (1) Training and education; (2) Benchmarking and lessons learnt; (3) Knowledge transfer and experience sharing; and (4) Institutional reforms; and supportive enabling environments. The results of this study foster better understanding of the facets of capacity building, provides PPP stakeholders with solutions for mitigating and addressing the challenges during the PPP project lifecycle.

Keywords: Developing countries, Tanzania, Benchmarking, Best practice, Capacity building, Solutions, Public Private Partnerships (PPPs).

Introduction

According to the UNDP (2009), strong capacity, locally generated and sustained, is essential to the success of any development enterprise. However, despite the *Tanzanian National Development Vision 2025* which encourages the Government to seek private sector investments in infrastructure and services development, a number of capacity building (CB) related challenges continues to hamper the PPP implementation efforts by the Tanzanian stakeholders.

PPPs in developing countries are also faced with risk threats (Babatunde *et al.* 2019) further highlighting the need for skills in risk management. Like most developing countries, the Tanzanian government has established PPP Units and associated teams in the Ministry of Finance focusing on skills in PPPs with the public administration. Notwithstanding the importance of capacity building programs in developing countries, studies have shown that capacity building support tended to be directed more towards the countries with higher existing capacity (Umemiya *et al.* 2020).

The World Bank (2018) suggests that capacity building for other government entities must be undertaken by the PPP units. However, within the Tanzanian context, despite these ‘PPP financial’ and ‘PPP coordinating’ units being responsible for the assessment, approval as well as the coordination of all PPP projects, they considered as being ineffective and underutilised (Kavishe *et al.* 2018). More so, whilst PPPs have been suggested as a strategy to deliver infrastructure in emerging economies, it is still a relatively new concept (World Bank, 2016), and lack of capacity particularly remains one of the major problems in implementing PPPs (Quium, 2011). Therefore, the process of capacity building is also fraught with challenges and has its own peculiarities particularly in Africa (Nanfosso, 2011).

However, the synergies and the role of capacity building in facilitating the PPP implementation success are acknowledged in literature (World Bank, 2016; Osei-Kyei and Chan, 2018; Umar *et al.* 2019). Capacity building and training have been acknowledged to enhance local practitioners’ skills and knowledge in delivering PPPs projects (Osei-Kyei and Chan, 2018). Lack of capacity has been found to result in poor services, and financial recklessness which threaten the sustainability of service provision (Umar *et al.* 2019). **More so, there also limited studies**

focusing on the challenges of capacity building around PPPs particularly in developing countries, and especially sub-Saharan Africa.

Therefore, a need to explore the CBC and subsequent advocated solutions with PPP housing projects associated with developing countries such as Tanzania becomes relevant. The present study is aimed at filling the knowledge gap by conducting a survey among the Tanzanian PPP stakeholders. Its aims are threefold: First, it attempts to identify and rank the critical challenges impacting the capacity building for the Tanzania public–private partnerships (PPPs) projects. Second, it aims to establish the strength and direction of interaction among the identified critical challenges using correlation analysis. Third and finally, it aims to propose ways of improving the PPP capacity building and offer some advocated solutions. The findings of this study are significant as majority of emerging markets and developing economies are beset by numerous challenges affecting their capacity building efforts designed to underpin the PPP implementation.

Conceptualisation of capacity building and capacity development

To facilitate the examination of the challenges impacting the capacity building for the Tanzanian PPP projects, the concepts of “*capacity building*” and “*capacity development*” needs to be defined as a number of different definitions for capacity building exists (Ferrero *et al.* 2019; UNDP, 2009) and contradictions or consensus over the actual definitions of “*capacity building*” or even “*capacity*” (Ridge *et al.* 2018). According to Ferrero *et al.* (2019), capacity building is defined as a multi-level learning process, and training is one of its components. In contrast the UNDP (2009) defines *capacity building* as “a process that supports only the initial stages of building or creating capacities and assumes that there are no existing capacities to start from” whereas ‘*capacity development*’ is defined as ‘the process through which individuals,

organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time. “Capacity” and “organizational readiness” have also been used in the same context (Spaulding *et al.*, 2017). According to Manu *et al.* (2018), capacity building and development is also conceptualised as having three strands of capacity - individual, organisational and national (i.e. enabling national environment). **For example, at the national environment level, having an effective institutional environment can be considered as a key differentiator in deciding performance of PPP projects** (Devkar *et al.* 2020). However, this study focuses more on issues pertaining to the individual and organisational facets. Other studies such as Nanfosso (2011) have conceptualised capacity as referring to an acquired or developed knowledge which enables an individual to succeed in a physical or intellectual activity.

Within the context of Municipals capacity building, Plummer (2002, pg. 6) offers the following definition: The term ‘*capacity building*’ includes a broader understanding of capacity that includes human resource development, organisational development and the regulatory framework. ‘Municipal capacity building’ refers specifically to organisational and human resource development (HRD) issues, and those regulatory issues that are within the scope of municipal government. Therefore, drawing upon the review of the definitions as provided, and particularly, that of Nanfosso (2011) which further states that capacity building covers three activities: professional enhancement, procedures improvement and organisation strengthening, the exploration of the CBC for the Tanzanian PPPs projects, our study is designed to view those challenges from both the organisational and human resource development (HRD) issues, and the areas where capacity is expected to be grown such as an enabling environment, in organizations and within individuals (UNDP, 2009).

PPP capacity building challenges

Table 1 presents a summary of supporting literature on capacity building challenges in PPP projects.

< Insert Table 1 here >

In addition to the reported studies in Table 1, various capacity building challenges in PPP projects have been identified in literature. These have ranged from success conditions for international development capacity building projects (Ika and Donnelly, 2017); evaluation of capacity building (Chaudhary *et al.* 2020); facilitators and barriers to capacity building (Naicker *et al.* 2019); capacity challenges inhibiting public infrastructure procurement (Manu *et al.* 2018; Wade and Kallemeyn, 2020); For example, Ika and Donnelly (2017) examined the ID capacity building project success in projects in Ghana, Indonesia, Sri Lanka and Vietnam and drew out structural, institutional, and managerial success conditions. Within the middle-income countries (LMIC), Naicker *et al.* (2019), identified the following barriers and facilitators affecting the capacity building as poor availability of human resources and insufficient training program/supports for their professional development. Facilitators were local government support and international non-governmental organizations collaboration.

In summary, the literature review highlighted limited empirical Tanzanian specific PPP studies and their associated narrow focus (non-construction). Hence, to fill that knowledge gap, this present study investigates the challenges impacting the capacity building for the Tanzania public–private partnerships (PPPs) projects. It proposes practical solutions to common identified challenges.

Research methods

To examine the critical challenges impacting the capacity building for the Tanzanian PPP projects, an explanatory empirical research was undertaken in the study. The research approach comprised the following five steps: 1) scoping review; 2) pilot survey; 3) questionnaire survey; 4) statistical analysis and 5) qualitative word frequency analysis. The main quantitative approach of data collection (questionnaire survey) has previously been used in PPP related and capacity building studies (Araujo *et al.* 2019; Umar *et al.* 2019).

Scoping review

The identified studies were selected using a mini scoping review. According to Grant and Booth (2009), this type of review is used for preliminary assessment of potential size and scope of available research literature, with no formal quality assessment required. The SCOPUS database was used, and the following search string of TITLE-ABS-KEY was used: "Capacity building"; "Capacity development; "Public-private partnerships"; "PPPs"; AND developing; countries; housing; projects. This initial search retrieved 3923 articles for the subsequent refinement. These comprised 997 from open access and 2926 from other sources. The scope was further narrowed with the following revised string search: (TITLE-ABS-KEY ("Capacity building" AND challenges) AND PUBYEAR > 2008 AND PUBYEAR < 2020) AND (PPPs). Drawing upon the approach by Mostafa *et al.* (2016), the keywords such as 'housing' 'Capacity building', 'PPPs' and 'Challenges' as identified in the articles were then used to create additional search strings with Boolean connectors (AND, OR and NOT). This resulted in 18 document results with the final selected 11 studies identified through reading the abstracts with key focus on the identified keywords.

Pilot survey and measurement instrument

The designed questionnaire was pre-tested before the actual data collection process started. This assisted the researchers to improve the questionnaire. Therefore, the draft questionnaire was shared to 5 colleagues who are academics. After the pilot study, some of the questions were rephrased in order to enhance clarity. The questionnaire comprised part of a bigger research project with 3 distinct sections related to findings as: (1) demographics (2) critical challenges impacting the capacity building; and (3) strategies for overcoming the identified challenges to the capacity building process. For subsections (2) and (3), the respondents were asked to rate their levels of agreement using a five-point Likert scale where 1= strongly disagree and 5= strongly agree. Therefore, the results reported upon herein relate to the first and second sections of the questionnaire as it is beyond the scope of this paper to report on all issues covered within the broader research project.

Survey administration

A cross-sectional research design was adopted whereby the targeted population included PPP consultants, local authority officers involved in PPP projects, world bank PPP facilitators and private sector trainees who were attending PPP Training of Trainers (TOT) held from 7th -18th October 2019 at Bagamoyo Beach Hotel in Bagamoyo Tanzania. Descriptive research type was adopted in order to highlight the capacity building strategies and challenges for PPP projects within the Tanzanian context.

Population and data collection method

A total of nearly 120 participants from various regions of the country attended the PPP training. All the participants were involved with PPP projects at different levels hence considered suitable for the study. Therefore 100 questionnaires were prepared and distributed to all the participants

who were available and willing to participate in the study. Majority of the participants were involved with PPP projects at different levels therefore a non-probability sampling approach with a combined *purposive* and *convenient* techniques were adopted. Convenient sampling was deemed appropriate because the sample was built from cases which are accessible, such as the organizations in a certain region, or the members of s social networking site. Likewise, purposive sampling was included as the sample was “hand-picked” for the research (Rowley, 2014). In our particular study, it was participants attending a PPP training course. Such an approach of distributing questionnaires by hand is acceptable (Rowley, 2014). The purpose of this survey was to evaluate capacity building challenges for public private partnership for construction projects in Tanzania. Out of 100 distributed, about 81 questionnaires were returned on the same day at the end of the training session. Please note that of the 81 returned questionnaires, one was incomplete resulting in 80 useable for the final data analysis.

Data analysis

Drawing on methodological justification, including rationale, explanation of null hypothesis of Kavishe *et al.* (2018) study, quantitative data were analysed using the IBM *Statistical Package for Social Sciences* (SPSS) version 25. Five methods were employed:

- (i) *Parametric tests* were undertaken to measure the significance of the ‘challenges’ impacting the capacity building for the Tanzania construction projects
- (ii) *Descriptive statistics tests* such as measures of central tendencies and frequency analysis enabled further ranking analyses to obtain the criticality of the capacity building challenges. Such data analysis techniques have been employed in previous PPP related studies (cf. (Osei-Kyei and Chan, 2017; Kavishe *et al.* 2019a; Umar *et al.* 2019).

- (iii) *Kendall's concordance analysis* was employed to establish whether there were any agreement and consistency of responses around the eight challenges inhibiting capacity building for PPP implementation
- (iv) *Pearson correlation* analysis was used to examine the interaction, strength and direction of relationships among identified challenges.
- (v) *Word frequency analysis* was used to establish the frequencies of occurrence of certain concepts or words used in the qualitative responses to the survey.

Survey sample characteristics

The characteristics of the respondents according to the educational and professional backgrounds, length of experience (PPP practice) and the number of PPP projects undertaken are summarised in Table 2.

<Insert Table 2 here>

The majority (45.0%) of the PPP practitioners investigated were public partners, followed by an equal number of 8.8% PPP advisors and 'any other'. The rest were evenly distributed amongst the PPP officers, Coordinator PPP program, private partner and project manager. Whilst the majority (59%) of the respondents were from the public sector, the private sector may also lack technical, financial or managerial capacity to implement the project (Quium, 2011). Relative to academic qualifications, the majority (52.5%) had a Master's degree and 31.3% a Bachelor's degree.

There was a fair distribution around experience with PPP projects. 51.2% had, and 48.2% didn't. Finally, 50% of the respondent had experience with 1-2 number of PPP projects, whereas

32.89% had not been involved in any PPP projects. This finding suggests that despite the fair and equal distribution of experience with PPP projects, the number of projects associated with the experience was limited to 1 or 2 projects.

Survey results and findings

Reliability analysis

The reliability and internal consistency of the survey instrument comprising the eight challenges were examined using the Cronbach's α 's coefficient. The Cronbach α coefficient was found to be 0.807 (F -statistic = 5.261, sig = 0.000) for the challenges instrument thus indicating a high reliability of scales (Nunnally, 1978).

Agreement and consistency of responses

To establish whether there were any agreement and consistency of responses around the eight challenges, Kendall's concordance analysis at a pre-defined test value of 0.05 was undertaken (Osei-Kyei and Chan, 2017). Table 3 summarises the results for the test statistics for Kendall's coefficient concordance.

<Insert Table 3 here>

The W value obtained for the "challenges" was 0.305, with significance values of 0.000. As suggested by Kavishe and Chileshe (2019), Osei-Kyei and Chan (2017), the χ^2 was used for the pitfalls than the computed W values due to the number of attributes (i.e. challenges) exceeding seven. From the results obtained, the critical value of the χ^2 was 14.08 and less than the

computed value of 57.585 with degrees of freedom (*df*) of 7 thus confirming that there was agreement in the levels of consensus in the scoring of the challenges among the respondents.

Stage of PPP projects

Table 4 shows the stage of the current PPP projects that the survey respondents were working on.

<Insert Table 4 here>

Examination of Table 4 shows that the majority (70%) of the PPP practitioners were currently working on PPP projects which were in the *feasibility stage*, followed by *identification and screening* (11.3%), *procurement* (3.8%), and *operational* (2.5%). The early stages of the PPP projects or life cycles have been identified as being prone to a number of challenges. For example, the initial stage is associated with stakeholder consultations which might influence PPP project success or failure (Eyiah-Botwe *et al.* 2019). Similarly, Kavishe *et al.* (2018) study established that the majority of challenges were more prevalent in the “*Procurement phase*” followed by the “*Preparation phase*” with 31.58%. This highlights the need of building capacity around activities associated with these stages. Likewise, financial management challenges have been found to be associated with the early stage of the PPP projects (Jayasuriya *et al.* 2019). Whilst only a minority of the respondents are involved in the ‘*procurement*’ phase projects, some challenges related to transparency, integrity and accountability have been identified to be amongst the top most ones adversely affecting the effectiveness of public infrastructure procurement in sub-Saharan African countries such as Nigeria (Manu *et al.* 2018).

PPP knowledge and awareness

Table 5 summarises the frequency of respondents PPP knowledge and awareness.

<Insert Table 5 here>

As shown in Table 5, the majority 96.3% of respondents had PPP knowledge and awareness. However, despite the levels of awareness exhibited, only 51.2% had any experience with PPP projects and 48.8% didn't. From those with PPP experience, the majority 68.29% had very limited experience of 1-2 years; 21.95% had 3-5 years and an equal number 4.88% fell into the '6-10 years' and 'over 10 years' categories. A further cross-tabulation of PPP knowledge and awareness experience with PPP projects was undertaken. Based on the Chi-square tests, the value of .957 was greater than 0.05 implying that the result was not significant. This means that the PPP knowledge awareness was not significantly different from those with PPP experience. The findings are also consistent with literature.

Ranking of the critical challenges impacting capacity building

Table 6 presents the descriptive results of analysis for 8 challenges affecting the capacity building of PPPs in Tanzania, whilst Table 7 presents the results of one-sample *t*-tests of the same challenges based on the respondents' experience.

<Insert Tables 6 and 7 here>

The mean scores for 8 challenges range from 4.32 (*limited local people with experience*) to 3.46 (*lack of political will*), suggesting differences amongst perception of respondents. The COV ranged between 21.71% and 34.51% illustrating the different levels of agreement amongst the respondents. The results also show that the 4 highly ranked 'challenges' are statistically significantly different ($p < 0.05$).

Further examination of Table 6 shows that the challenge “*Limited local people with experience*” (mean = 4.32) was the highest ranked (mean = 4.70). Its lower standard deviation (std. dev = 0.938) further reinforces the consensus among respondents in ranking this challenge highly. This challenge was also statistically significant ($t(76) = 7.714, p = 0.000 < 0.05$). “*Lack of resources*” (mean = 4.12) was ranked the second most critical challenge affecting the capacity building in PPP projects in Tanzania despite its higher value of standard deviation (std. dev = 1.131). Table 7 further shows that this challenge was statistically significant ($t(75) = 2.526, p = 0.0140 < 0.05$). The higher ranking of this challenge is further evidenced by the large mean difference of 1.013.

The third overall ranked challenge affecting the capacity building in PPP projects was that of “*lack of successful PPP projects*”, (mean = 3.86). Despite the higher value of the standard deviation (SD = 1.060) suggesting the respondents’ lack of consensus around the higher ranking of this challenge, it was nevertheless statistically significant ($t(76) = 2.956, p = 0.004 < 0.05$) and had a positive mean difference of .3571. Some ways of improving the capacity building were suggested by the survey respondents. “*Lack of permanent PPP trainers*” was ranked fourth (mean = 3.80) and assessed as statistically significant ($t(76) = 2.308, p = 0.024 < 0.05$) and had a positive mean difference of .3026. The fifth overall ranked challenge was ‘*lack of hands on training*’ (mean = 3.59). This lower ranking is further augmented by the higher value of the standard deviation (SD = 1.116) suggesting the respondents’ lack of consensus around the lower ranking of this challenge. It was also statistically significantly different ($t(72) = 1.181, p = 0.241 > 0.05$) and had a positive mean difference of .5000.

In the lower quartile, “lack of political will for promoting PPPs” was the least ranked (8th) with mean score of 3.46. This challenge was also not statistically significant ($t(76) = -.288, p = .774 > 0.05$) with mean difference of $-.0395$.

Parametric tests

Pearson’s correlation coefficient and the coefficient of determination were computed for the eight challenges affecting capacity building for the PPP in Tanzania (refer to Table 8). Drawing up the approach of Chileshe *et al.* (2020a), Figure 1 illustrates how these capacity building challenges are grouped into these two strand levels “individual and organisational” and “national” (Manu *et al.*, 2018) and how such a relationship could impact on each other. The positive relationships among the challenges are denoted by a + sign and further shown by thick lines indicating their *high* levels of *strength* with values ranging between ‘0.490 and 1.00’; *medium* levels of *strength* with values ranging between ‘0.300 and 0.490’. The dashed lines indicate *small* levels of *strength* which ranges between ‘0.100 to 0.290’. This classification of *strength* is based on the interpretation and guidelines of the Pearson correlation (r) according to Cohen (1988 cited in Pallant, 2005).

<Insert Table 8 and Figure 1 here>

As observed by Janssen *et al.* (2016), the application of PPPs requires local governments to adapt their current working methods, which accordingly amounts to a large impediment to local governments applying PPPs. Table 8 and Figure 1 further illustrates criticality of the challenge

of 'lack of resources' as evidenced by the number of positive, medium and low levels of relationships that has with other critical challenges such as *lack of successful PPP projects* ($r = 0.305$); *lack of permanent PPP trainers* ($r = 0.245$), *higher costs in conducting PPP training* ($r = 0.245$), *lack of hands-on training* ($r = 0.237$) and *lack of political will for promoting PPPs* ($r = 0.232$). Further examination of Table 8 and Figure 1 reveals that that none of the correlations were of large strength ($r = 0.50$ to 0.10 or $r = -0.50$ to -1.0) as defined by Cohen (1988 cited in Pallant 2005). In addition, Table 8 also reveals that 15 (53.57 per cent) out of the 28 correlations were significant at $p < 0.01$ and $p < 0.05$ levels with *inadequate qualifications* and *lack of hands on training* showing medium strength positive correlations ($r = 0.447$, $n = 71$, $p = 0.000 < 0.01$). The *weakest* correlation ($r = -0.066$, $n = 76$) was between *limited local people with experience* and *lack of political will for promoting PPPs* which was also negative and not significant ($p = 0.509 > 0.05$). The second weakest and positive relationship was between *lack of resources* and *limited local people with experience* ($r = 0.148$, $n = 76$, $p = 0.145 > 0.05$).

Qualitative analysis of advocated solutions to the capacity building challenges

As indicated in the research methods section, 'word frequency analysis' was used for the open-ended questions within the survey instruments. Using open ended questions, respondents were asked to identify the advocated solutions to the capacity building challenges. From the results of the word frequency analysis, the advocated solutions could be broadly classified into the following categories: (1) Training and education; (2) Benchmarking and lessons learnt; (3) Knowledge transfer and experience sharing; and (4) Institutional reforms; and supportive enabling environments. Overall, 'training' was mentioned 25 times amongst the 50 respondents. Some proposed solutions from respondents which included the following:

- Train trainers to help in training others to have common understanding on PPP
- Initiating institutions for trainings in Tanzania or set and introduce courses on PPP within the training institutions we have in Tanzania in their syllabus and Introduce short courses on PPP training in our colleges/universities
- On job training seminars, fundraising, exposure visits, leadership succession plans, strong programs conducted on self-assessment to see areas of need and use of consultants for capacity building
- Providing awareness to the implementing authorities on the importance of allowing their staff (officers) to attend the PPP training on time.
- Sector specific PPP Training and delivery, automation of PPP Project cycle, standardization of PPP processes procurement agreement and learning on actual projects to supplement classroom training.

Discussions

The results of the data analysis presented in the previous sections show that only 4 out of the 8 identified critical capacity building challenges (CBC) are statistically significant and are regarded as among the critical challenges (Table 7). However, seven challenges attained a mean value greater than 3.5. For ease of discussion, only the top quartile ranked significant challenges as well as the least ranked are included in the following subsections.

- *Limited local people with experience*

The highest ranked capacity building challenge was “limited local people with experience”. The capacity building needs should be developed using the local knowledge, structure and processes (UNDP, 2009). However, the lack of skill amongst the professions in developing countries is

well documented. For example, Kikwasi and Escalante (2018) identified ‘inadequate management and human resource skills’ among the number of challenges facing Tanzanian contractors. The findings are consistent with PPP literature. For instance, the World Bank (2016) acknowledges that Tanzania has significant experiences with PPPs, although these have so far produced mixed results.

- ***Lack of resources***

The capacity building challenge of “limited local people with experience” was the second ranked. Despite the findings being consistent with a few earlier studies, others such as UNDP (2009) offer some contradictory viewpoints with the assertion that availability of input resources does not guarantee their contribution to development objectives. For instance, according to Mourgues and Kingombe (2017), this is one of the most difficult challenges for Governments at the early stages of PPP development as it requires not only training the stakeholders but also resourcing PPP Unit. The mere formation of PPP units is not enough to make them successful. Therefore, these units require resources, qualified staff and ability to retain these qualified staff.

- ***Lack of successful PPP projects***

“Lack of successful PPP projects” was the third ranked challenge. This ranking is further evidenced by some ways of improving the capacity building that were suggested by the survey respondents. Examples and advocated solutions include usage of PPP projects from countries which have similar enabling environment such as Tanzania. This finding is also consistent with the UNDP (2009) which recommended ‘experience sharing’ through promoting exchange of information and best practices among the countries as a pathway to successful project.

Accordingly, the Tanzanian practitioners are of the view that this could be used as case studies for easy understanding and to show how they are successful.

- ***Lack of permanent PPP trainers***

The fourth ranked challenge to bid decisions was “lack of experience of several works”.

According to Plummer (2002), a capacity building strategy should address both skills development and organisational capacity. The World Bank (2016, pg. XV) further acknowledges that a solid training program and public outreach campaign plays an important role in enabling government staff, local governments and the public to understand the rationale for PPP. Likewise, the UNDP (2009) has identified ‘expertise on training and learning methodologies’ among the indicative activities of capacity building programmes. However, the issue of skilled workforce, and lack of qualified PPP trainers is a significant challenge affecting the emerging economies, and Tanzania is no exception. Previous studies further support this finding. For example, the Danish Institute for International Studies (DIIS), (2015), noted that the skills required to identify, assess, procure and implement PPP projects are advanced and in high demand in government and, especially, in the private sector.

- ***Lack of hands on training***

The challenge of “*lack of hands-on training*” was the fifth ranked as affecting the capacity building initiatives within the Tanzanian context. As observed by Mourgues and Kingombe, (2017), the majority of the capacity building initiatives have previously been designed as participation to seminars and lectures. However, approaches have failed to fully enable staff gain some practical skill/experience.

The suggested advocated solution arising from this challenge is through the inclusion of long-term PPP training programmes with advisory team bearing international experience in place on a day-to-day basis to advise the trained team, this approach proved to be effective in Namibia and Morocco. Nevertheless, despite the viability of the findings from Mourgues and Kingombe, (2017), the practical approach as suggested was considered lengthy and was leading into another problem of higher costs in conducting PPP training or simply they could be no PPP projects in the pipeline. Also the idea of having international experts on site for practical training could lead into institutions becoming too dependent on the consultants' advice to operate since every project is unique.

- ***Lack of political will for promoting PPPs***

Lack of political will for promoting PPPs was least ranked. According to Mahalingam *et al.* (2011 *et al.* cited in Voordijk, 2012), political willingness is a key factor to determining the evolution of the institutional environment. In developing countries such as India, a number of the infrastructure sectors have experienced a higher level of PPP adoption due to political commitment, institutional capacity and sector specificities (Devkar *et al.* 2020). The need of an enabling PPP environment and government support as a catalyst for PPP implementation and capacity building is well documented in literature (World Bank, 2016; Janssen *et al.* 2016). For instance, Janssen *et al.* (2016) study aimed at identifying barriers that prevent local governments from applying PPPs in their road development projects established that the application of PPPs required local governments to adapt their current working methods. Most functioning of local government in developing countries is associated with the particular Government of the day (or

in power), hence any lack of political will would cascade to the functioning of the local government.

The political will for promoting PPPs is critical as it ensures having a political mandate for private sector participation (Plummer, 2002) whereas the report by the Danish Institute for International Studies (2015) which emerged from a seminar designed to connect and establish a network among African and Asian countries working with PPPs, emphasised that a political vision for and understanding of PPP must be in place at the decision-making level.

Pearson's correlation analysis

Figure 1 highlighted the importance and criticality of the challenge of 'lack of resources'. As observed by Janssen *et al.* (2016), the application of PPPs requires local governments to adapt their current working methods, which accordingly amounts to a large impediment to local governments applying PPPs. The results as illustrated in Figure 1 and associated findings emphasise the following: 1) the importance of *experience* and associated *resources* as further evidenced by their higher rankings (Table 6). Furthermore, the stronger relationship between these two challenges is not surprising considering that, one of the main drivers for public-private partnerships (PPPs) is due to the inadequate resources and skills deficiency in public sector projects (Eyiah-Botwe *et al.* 2019). The findings further highlights and reinforces the need for the Tanzanian practitioners to invest in capacity building using appropriate strategies, which in essence would have to underpinned by an enabling environment with appropriate policies, regulatory and legal frameworks. Finally, as observed by the UNSECAP (2011), in addressing the identified challenges within our study, the private sector would need to establish whether any

previous experience exists within the government and how much capacity does the agency have in implementing the project.

Advocated solutions to the capacity building challenges

The following sub section presents a discussion around the mapping of the responses into capacity building strategies is based on the categories as identified from literature review (Nanfosso, 2011; UNESCAP, 2011a; World Bank, 2016). For brevity, the following section presents a discussion of a few selected solutions:

Training and education

The importance of '*training and education*' to capacity building initiatives is documented in both developed and developing countries (Voordijk, 2012; Kavishe and An, 2016; World Bank, 2016; Mourgues and Kingombe, 2017; Kavishe *et al.* 2018) and confirmed partially in the discussion of the '*Lack of hands on training*' challenge. For example, training programs and public outreach campaigns have been identified among the mechanisms for building capacity for PPP initiatives (World Bank, 2016). Most importantly, Tanzanian specific studies such as Kavishe and An (2016) and Kavishe *et al.* (2018) proposed amongst other solutions, the need for clear investment in training as mechanisms for addressing the issue of poor planning skills and analytical capacity of the Tanzanian PPP stakeholders.

Based on the reported solutions, '*training and education*' is viewed as an enabler for the stakeholders such as government staff, local governments and the public to understand the rationale for PPPs. This finding is also consistent with the World Bank (2016) recommendation

of public outreach campaigns. Other solutions such as “Providing awareness to the implementing authorities on the importance of allowing their staff (officers) to attend the PPP training on time” are equally acknowledged in literature. Other respondents suggested that: “Customizing the PPP training materials to reflect the Tanzanian environment and culture to make it more relevant”. This point is crucial localization of the training needs from Western practices is acknowledged when addressing the contemporary issues (i.e. PPPs) of developing countries (Voordijk, 2012). In addition to in-housing training, the Tanzanian practitioners are of the view that Universities should have a role in this process as evidenced by the following suggestion: “Introduce a PPP course in our higher learning institution, sponsor local PPP experts to be trained abroad and introduce a PPP regulatory authority”. This view is further supported by another respondent who recommended “including PPP in the university curriculum and having PPP dialogue and discussion to the public”. The respondent’s observations and solution via training are also consistent with literature. Whilst the proposed solutions by the Tanzanian practitioners

Benchmarking and lesson learnt

Whilst the benefits and barriers of lessons learnt have been investigated in construction literature, and among developed countries (Shokri-Ghasabeh and Chileshe, 2014) and issues around organisation learning in developing countries such as Kululanga and Shaibu Kuotcha (2008), the usage of benchmarking and lesson learnt as solutions to PPPs capacity building in sub-Saharan African is very limited. However, the meaning of ‘*benchmarking*’ as an advocated solution is drawn from Camp (1989 cited Arujo *et al.* 2019) interpretation that for the best industry practices which, through its implementation, will lead to exceptional performance. Therefore, the

suggested solutions would enable the Tanzanian practitioners to implement PPP successful post acquisition of desirable capacities.

- Excursion trip to most successful PPP projects in other countries
- To have exposure tour to countries which have success in implementing PPP projects and include PPP curriculum in the Universities and colleges
- Look for funds for capacity building of PPP construction projects, attachment or study tours of staff to countries which have successful PPP projects
- Being attached to countries with successful PPP projects
- Prepare proper guide that can be used to train, let it be contextualize as per the developing countries context. Let it be simple detailed and comprised of each step of PPP. Let trainers be exposed to successful PPP in other developing and developed countries.

From the above proposed solutions, the emergent theme is that of “Visits” to other countries which is very consistent with literature and best practice of building capacity. As noted by the World Bank (2018), benchmarking exercises allows for the comparison of internationally recognised good practices, as well as areas for improvement in a number of areas such as preparation, procurement, and management of PPPs.

Knowledge transfer and experience sharing

An earlier study undertaken by Chileshe and Kavishe (2020), aimed at examining the Tanzanian practitioner’s readiness assessment for PPP adoption found limited knowledge and skills required for PPP practitioners. Therefore, the proposed solution of “Knowledge transfer and

experience sharing” through options such as the “setting up a PPP Community of online group of Tanzania PPP specialists trainers and practitioners to share knowledge, experience and advice locally” and “writing up of local PPP case studies in Tanzania both new PPPs and past pilot PPPs in Tanzania” are very consistent with advocated solutions in literature. For example, from an empirical viewpoint, Love *et al.* (2016) have argued that the performance and productivity of construction projects can improve if firms were able to learn and draw upon lessons that have been acquired from the experiences of individuals, teams and organizations. Therefore the proposed solutions around having “more practical training and attachment on the ongoing projects” and “trainee needs to be attached to reality of developing PPP projects” can be used as pathway for knowledge transfer and experience sharing among the Tanzanian practitioners.

Institutional reforms and supportive enabling environments

“Institutional reforms and supportive enabling environments” was the fourth category of the advocated solutions. The finding is consistent with several earlier studies that report better institutional reforms as catalysts of PPP adoption (Umar *et al.* 2019; Nanfosso, 2011; Ika and Donnelly, 2017; World Bank, 2018; Araujo *et al.* 2019; Umar *et al.* 2019; Chileshe and Kavishe, 2020; Chileshe *et al.* 2020b; Damoah *et al.* 2020; Muleya *et al.* 2020). For instance, legal and regulatory frameworks, and contextual or enabling environments are identified in literature as part of structural conditions necessary for capacity building projects (Ika and Donnelly, 2017). Some studies have also suggested the need for developing the government’s internal technical capacity and creating efficient mechanisms for hiring external consultants should provoke institutional strengthening (Araujo *et al.* 2019). However, having such enabling environments could only be achieved with supporting legal and regulatory frameworks. Therefore, the

proposed solutions by respondents such as the need for “PPP legal framework to be a compulsory module or skills to be possessed by the construction projects practitioners” should be underpinned by changes in the institutional framework which guides development oriented public actions (Nanfosso, 2011). The importance of enabling environments is further reinforced in studies conducted in other sub-Saharan African countries sharing economic communities and geographical conditions with Tanzania, such as Kenya (Chileshe *et al.* 2020b), and Zambia (Muleya *et al.*, 2020).

Conclusions

In order to gain insights into the Tanzanian stakeholders on the challenges impacting the capacity building for the PPP projects, as well as propose some practical solution for managing these challenges, a quantitative approach comprising questionnaire survey was adopted. Based on the overall sample, the most highly ranked seven challenges in ascending order were: 1) limited local people with experience; 2) lack of resources; 3) lack of successful PPP projects; 4) lack of permanent PPP trainers; 5) higher costs in conducting PPP training, 6) lack of hands-on training; and 7) inadequate qualifications. The least ranked was lack of political will for promoting PPPs.

The findings further established that the majority of these challenges were more prevalent in the “*Procurement phase*” followed by the “*Preparation phase*”. The major finding from the correlation analysis was the existence of the strong and positive correlation between ‘inadequate qualifications’ and ‘lack of hands-on training’. The majority of the advocated solutions were nested within the training and education, lessons learnt through PPP project exemplars, benchmarking of PPP projects through local and foreign visit categories. This study is significant as to the best of our knowledge, our empirical study is among the first within the Tanzanian

construction and housing-specific empirical studies on the challenges affecting the capacity building for PPPs.

Implications

The following important implications are suggested. For, *researchers* the insights and knowledge from correlation analysis highlighted the existence of some strong positive and negative correlations among the capacity building challenges. These could be used to inform *government* and *practitioner* policies towards the effective implementation of capacity building initiatives within Tanzanian PPP projects. The correlation results highlighted the need for proactiveness, and political willingness from the Government of the day to provide enabling environments such as supportive regulatory frameworks. Such actions provide opportunities for the locals to acquire experience through the availability of PPP projects, thus empowering low-income groups with desirable analytical skills if aspirations of affordable housing are to be attained. Furthermore, the literature review and findings provides an opportunity for comparisons and drawing of lessons learned around challenges affecting capacity building amongst Sub-Saharan countries, similar emerging markets, and other developing economies. Finally, the findings reinforced the need for tailoring solutions to capacity building challenges according to local or host environment context. For *governments*, these findings would be used through the PPP units to design and tailor specific training initiatives associated with capacity building programmes.

Limitations and suggestions for future research

Despite the noted contributions, the main limitation of the study was around the lack of generalization as the survey sample consisted of organisations and PPP stakeholders from one

country, namely Tanzania. Evidently, findings may not generalize to other developing countries, and therefore future studies should be extended to other parts of Tanzania. **In order to establish the predictive power and impact (negative or positive) of the factors on the capacity building process, as well as the complex relationships amongst them, rigorous analysis such as structural equation modelling should be employed.**

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Additional reading

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Caption: List of Tables (in order of appearance in manuscript)

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Table 2: Demographic description for the PPP stakeholders

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No.	Challenge	Supporting literature
1.	Limited local people with experience	Chileshe and Kikwasi (2014); Danish Institute for International Studies (DIIS), (2015); World Bank (2016); Kikwasi and Escalante (2018)
2.	Lack of resources	UPND (2009); Mourgues and Kingombe (2017); Ika and Donnelly (2017)*
3.	Lack of successful PPP projects	Plummer (2002); UNDP (2009)
4.	Lack of permanent PPP trainers	Plummer (2002), UNDP (2009); Danish Institute for International Studies (DIIS), (2015); World Bank (2018);
5.	Higher costs in conducting PPP training	Ika and Donnelly (2017)*; Janssen <i>et al.</i> (2016),
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7.	Inadequate qualifications	Plummer (2002), World Bank (2016); Osei-Kyei and Chan (2018)
8..	Lack of political will for promoting PPPs	Nanfosso (2011); Voordijk (2012); Danish Institute for International Studies (DIIS), (2015); Kwofie <i>et al.</i> (2016); World Bank (2016); Jansen <i>et al.</i> (2016); Ika and Donnelly (2017); Almarri and Boussabaine (2017); Kavishe <i>et al.</i> (2018); UNDP (2009); Devkar <i>et al.</i> (2020); Damoah <i>et al.</i> (2020)

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Table 2: Demographic description for the PPP stakeholders

Characteristics	No of respondents	%	Cumulative
<i>Education</i>			
PhD	7	8.80	8.80
Masters	42	52.50	61.30
Postgraduate	3	3.80	65.00
Bachelor	25	31.30	96.30
Diploma	3	3.80	100.00
	80	100.0	
<i>Professional background*</i>			
PPP advisor	7	11.48	11.48
Private partner	1	1.64	13.12
Public partner	36	59.00	72,12
Any other	7	11.48	83.60
PPP officer	2	3.28	86.88
Coordinator PPP program	3	4.92	91.80
Project team member	4	6.56	98.36
Project manager	1	1.64	100.00
	61	100.0	
<i>Experience with PPP projects</i>			
Yes	41	51.20	51.20
No	39	48.80	100.00
	80	100.00	
<i>Number of PPP projects</i>			
1-2	38	50.00	50.00
3-5	3	3.94	53.94
6-10	1	1.32	55.26
Over 10	9	11.84	67.10
None	25	32.89	100.0
Total	76	100.0	

Table 3: Test statistics for Kendall's coefficient concordance

Characteristic	This sample (Tanzania)
Number of respondents (<i>n</i>)	68
Kendall's coefficient of concordance (W)	0.305
Chi-Square (χ^2)	57.585
df	7
Critical value of χ^2	14.08
Asymp. Sig	0.000

Notes: ^a Kendall's Coefficient of Concordance

Table 4: Stage of the current PPP projects

PPP stage	Frequency	Valid percent	Cumulative percent
Identification and screening	9	11.30	14.75
Feasibility study	47	58.80	77.04
Procurement	3	3.80	4.92
Operation	2	2.50	3.29
Total	61		100.00

Notes: Based on the total responses of 61

Table 5: Do you have any PPP knowledge awareness? * Do you have any experience with PPP projects cross tabulation

Count	Do you have any experience with PPP projects		Total	
	Yes	No		
Do you have any PPP knowledge awareness?	Yes	40	37	77
	No	1	1	2
Total		41	38	79

Table 6: Descriptive statistics of the challenges impacting the capacity building for the Tanzania public–private partnerships (PPPs) projects

Capacity building challenges	N	Min	Max	MS ^{a,b}	Std. dev	COV	Std. error mean	Percentiles			R
								25th	50 th (Median)	75th	
Limited local people with experience	77	1.00	5.00	4.32	.938	21.71	.074	4.00	5.00	5.00	1
Lack of resources	76	1.00	5.00	4.12	1.131	27.45	.209	3.00	5.00	5.00	2
Lack of successful PPP projects	77	1.00	5.00	3.86	1.060	27.46	.175	3.00	4.00	5.00	3
Lack of permanent PPP trainers	76	1.00	5.00	3.80	1.143	30.08	.212	4.00	4.00	5.00	4
Higher costs in conducting PPP training	75	1.00	5.00	3.65	1.120	30.68	.158	3.00	4.00	4.75	5
Lack of hands-on training	73	1.00	5.00	3.59	1.116	31.09	.229	3.00	4.00	4.00	6
Inadequate qualifications	74	1.00	5.00	3.53	1.208	34.22	.205	3.00	4.000	4.75	7
Lack of political will for promoting PPPs	76	1.00	5.00	3.46	1.194	34.51	.219	3.00	3.00	4.75	8
<i>Average</i>				3.64							

Notes: ^aMean score based on valid n =76 (list wise), ^b MS = mean score of capacity building challenge where 5= strongly agree; 4=agree; 3=neutral; 2= disagree; 1= strongly disagree. The higher the mean score the more critical the challenge; COV = Coefficient of variation; R = Rank

Table 7: One-sample test of capacity building challenges for PPP projects among respondents

Capacity building challenges (CBS)	Test value ($\mu = 3.5$)	<i>df</i>	Sig. (2-tailed)	Mean difference	95% C
					Lower
CBS1 = Lack of resources	2.526	75	.014*	1.0132	.2141
CBS2 = Limited local people with experience	7.714	76	.000*	.8247	.6118
CBS3 = Lack of successful PPP projects	2.956	76	.004*	.3571	.1165
CBS4 = Inadequate qualifications	1.042	73	.301	.2973	-.2715
CBS5 = Higher costs in conducting PPP training	1.302	74	.197	.1533	-.0813
CBS6 = Lack of hands-on training	1.181	72	.241	.5000	-.3439
CBS7 = Lack of permanent PPP trainers	2.308	75	.024*	.3026	.0414
CBS8 = Lack of political will for promoting PPPs	-.288	75	.774	-.0395	-.3123

Notes: *df* = degrees of freedom, *Significant at the 95 per cent level ($p < 0.05$)

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Identification and screening	9	11.30	14.75
Feasibility study	47	58.80	77.04
Procurement	3	3.80	4.92
Operation	2	2.50	3.29
Total	61		100.00

Notes: Based on the total responses of 61

Table 5: Do you have any PPP knowledge awareness? * Do you have any experience with PPP projects cross tabulation

Count	Do you have any experience with PPP projects		Total	
	Yes	No		
Do you have any PPP knowledge awareness?	Yes	40	37	77
	No	1	1	2
Total		41	38	79

Table 6: Descriptive statistics of the challenges impacting the capacity building for the Tanzania public–private partnerships (PPPs) projects

Capacity building challenges	N	Min	Max	MS ^{a,b}	Std. dev	COV	Std. error mean	Percentiles			R
								25th	50 th (Median)	75th	
Limited local people with experience	77	1.00	5.00	4.32	.938	21.71	.074	4.00	5.00	5.00	1
Lack of resources	76	1.00	5.00	4.12	1.131	27.45	.209	3.00	5.00	5.00	2
Lack of successful PPP projects	77	1.00	5.00	3.86	1.060	27.46	.175	3.00	4.00	5.00	3
Lack of permanent PPP trainers	76	1.00	5.00	3.80	1.143	30.08	.212	4.00	4.00	5.00	4
Higher costs in conducting PPP training	75	1.00	5.00	3.65	1.120	30.68	.158	3.00	4.00	4.75	5
Lack of hands-on training	73	1.00	5.00	3.59	1.116	31.09	.229	3.00	4.00	4.00	6
Inadequate qualifications	74	1.00	5.00	3.53	1.208	34.22	.205	3.00	4.000	4.75	7
Lack of political will for promoting PPPs	76	1.00	5.00	3.46	1.194	34.51	.219	3.00	3.00	4.75	8
<i>Average</i>				3.64							

Notes: ^aMean score based on valid n =76 (list wise), ^b MS = mean score of capacity building challenge where 5= strongly agree; 4=agree; 3=neutral; 2= disagree; 1= strongly disagree. The higher the mean score the more critical the challenge; COV = Coefficient of variation; R = Rank

Table 7: One-sample test of capacity building challenges for PPP projects among respondents

Capacity building challenges (CBS)	Test value ($\mu = 3.5$)	df	Sig. (2-tailed)	Mean difference	95% C
					Lower
CBS1 = Lack of resources	2.526	75	.014*	1.0132	.2141
CBS2 = Limited local people with experience	7.714	76	.000*	.8247	.6118
CBS3 = Lack of successful PPP projects	2.956	76	.004*	.3571	.1165
CBS4 = Inadequate qualifications	1.042	73	.301	.2973	-.2715
CBS5 = Higher costs in conducting PPP training	1.302	74	.197	.1533	-.0813
CBS6 = Lack of hands-on training	1.181	72	.241	.5000	-.3439
CBS7 = Lack of permanent PPP trainers	2.308	75	.024*	.3026	.0414
CBS8 = Lack of political will for promoting PPPs	-.288	75	.774	-.0395	-.3123

Notes: *df* = degrees of freedom, *Significant at the 95 per cent level ($p < 0.05$)

Caption: List of Tables (in order of appearance in manuscript)

Table 1: Summary of supporting literature on capacity building challenges in PPP projects (arranged in chronological order).

Table 2: Demographic description for the PPP stakeholders

Table 3: Kendall's *W* test – challenges to capacity building

Table 4: Stage of the current PPP projects

Table 5: Do you have any PPP knowledge awareness? * Do you have any experience with PPP projects Cross tabulation

Table 6: Descriptive statistics of the challenges impacting the capacity building for the Tanzania public–private partnerships (PPPs) projects

Table 7: One-sample test of capacity building challenges for PPP projects among respondents

Table 8: Inter-item Kendall's tau_b correlations of the challenges affecting the capacity building of PPPs

Figure 1: Roadmap of the capacity building challenges affecting the implementation of PPPs

Table 1: Summary of supporting literature on capacity building challenges in PPP projects

No.	Challenge	Supporting literature
1.	Limited local people with experience	Chileshe and Kikwasi (2014); Danish Institute for International Studies (DIIS), (2015); World Bank (2016); Kikwasi and Escalante (2018)
2.	Lack of resources	UPND (2009); Mourgues and Kingombe (2017); Ika and Donnelly (2017)*
3.	Lack of successful PPP projects	Plummer (2002); UNDP (2009)
4.	Lack of permanent PPP trainers	Plummer (2002), UNDP (2009); Danish Institute for International Studies (DIIS), (2015); World Bank (2018);
5.	Higher costs in conducting PPP training	Ika and Donnelly (2017)*; Janssen <i>et al.</i> (2016),
6.	Lack of hands-on training	UNDP (2009); Osei-Kyei and Chan (2018); Mourgues and Kingombe (2017); Ferrero <i>et al.</i> (2019)
7.	Inadequate qualifications	Plummer (2002), World Bank (2016); Osei-Kyei and Chan (2018)
8..	Lack of political will for promoting PPPs	Nanfosso (2011); Voordijk (2012); Danish Institute for International Studies (DIIS), (2015); Kwofie <i>et al.</i> (2016); World Bank (2016); Jansen <i>et al.</i> (2016); Ika and Donnelly (2017); Almarri and Boussabaine (2017); Kavishe <i>et al.</i> (2018); UNDP (2009); Devkar <i>et al.</i> (2020); Damoah <i>et al.</i> (2020)

Notes: Drawing upon Umemiya *et al.* (2020), capacity building support in the context of this study means financial and technical assistance in the form of international development projects, aimed at building and strengthening the PPP implementation approaches capacity in developing countries, and using Tanzania as a case study; *Ika and Donnelly (2017) identified financial resources among the structural conditions necessary for measuring capacity building.

Table 2: Demographic description for the PPP stakeholders

Characteristics	No of respondents	%	Cumulative
<i>Education</i>			
PhD	7	8.80	8.80
Masters	42	52.50	61.30
Postgraduate	3	3.80	65.00
Bachelor	25	31.30	96.30
Diploma	3	3.80	100.00
	80	100.0	
<i>Professional background*</i>			
PPP advisor	7	11.48	11.48
Private partner	1	1.64	13.12
Public partner	36	59.00	72,12
Any other	7	11.48	83.60
PPP officer	2	3.28	86.88
Coordinator PPP program	3	4.92	91.80
Project team member	4	6.56	98.36
Project manager	1	1.64	100.00
	61	100.0	
<i>Experience with PPP projects</i>			
Yes	41	51.20	51.20
No	39	48.80	100.00
	80	100.00	
<i>Number of PPP projects</i>			
1-2	38	50.00	50.00
3-5	3	3.94	53.94
6-10	1	1.32	55.26
Over 10	9	11.84	67.10
None	25	32.89	100.0
Total	76	100.0	

Table 3: Test statistics for Kendall's coefficient concordance

Characteristic	This sample (Tanzania)
Number of respondents (<i>n</i>)	68
Kendall's coefficient of concordance (W)	0.305
Chi-Square (χ^2)	57.585
df	7
Critical value of χ^2	14.08
Asymp. Sig	0.000

Notes: ^a Kendall's Coefficient of Concordance

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Table 7: One-sample test of capacity building challenges for PPP projects among respondents

Capacity building challenges (CBS)	Test value ($\mu = 3.5$)	df	Sig. (2-tailed)	Mean difference	95% Confidence interval of the difference	
					Lower	Upper
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CBS2 = Limited local people with experience	7.714	76	.000*	.8247	.6118	1.0376
CBS3 = Lack of successful PPP projects	2.956	76	.004*	.3571	.1165	.5978
CBS4 = Inadequate qualifications	1.042	73	.301	.2973	-.2715	.8661
CBS5 = Higher costs in conducting PPP training	1.302	74	.197	.1533	-.0813	.3880
CBS6 = Lack of hands-on training	1.181	72	.241	.5000	-.3439	1.3439
CBS7 = Lack of permanent PPP trainers	2.308	75	.024*	.3026	.0414	.5639
CBS8 = Lack of political will for promoting PPPs	-.288	75	.774	-.0395	-.3123	.2333

Notes: *df* = degrees of freedom, *Significant at the 95 per cent level ($p < 0.05$)

Table 8: Inter-item Kendall's tau_b correlations of the challenges affecting the capacity building of PPPs

Challenges to capacity building		Coefficient of determination (γ^2) or amount of variance							
		<i>CBS1</i>	<i>CBS2</i>	<i>CBS3</i>	<i>CBS4</i>	<i>CBS5</i>	<i>CBS6</i>	<i>CBS7</i>	<i>CBS8</i>
CBS1= Lack of resources	Pearson correlation	1.000	7.73	13.84	5.29	8.41	9.86	7.62	5.11
	Sig. (2-tailed)								
CBS2 = Limited local people with experience	Pearson correlation	.278*	1.000	4.80	4.58	11.49	11.63	3.35	0.09
	Sig. (2-tailed)	.015							
CBS3 = Lack of successful PPP projects	Pearson correlation	.372**	.219	1.000	5.34	4.79	4.97	4.37	6.71
	Sig. (2-tailed)	.001	.055						
CBS4 = Inadequate qualifications	Pearson correlation	.230	.214	.231*	1.000	4.24	26.94	8.70	0.14
	Sig. (2-tailed)	.050	.068	.047					
CBS5 = Higher costs in conducting PPP training	Pearson correlation	.290*	.339**	.219	.206	1.000	1.77	0.59	.213
	Sig. (2-tailed)	.012	.003	.059	.080				
CBS6 = Lack of hands-on training	Pearson correlation	.314**	.341**	.223	.519**	.133	1.000	19.45	3.67
	Sig. (2-tailed)	.007	.003	.058	.000	.262			
CBS7 = Lack of permanent PPP trainers	Pearson correlation	.276*	.183	.209	.295*	.077	.441**	1.000	6.20
	Sig. (2-tailed)	.017	.114	.070	.011	.516	.000		
CBS8 = Lack of political will	Pearson correlation	.226	-.030	.259*	.038	.146	.192	.249*	1.000
	Sig. (2-tailed)	.051	.799	.024	.752	.216	.106	.031	

Notes: n=76, the values in *italics* (and bold) with asterisks are significant at appropriate levels. The values on the right side of the diagonal are for the "Coefficient of determination". This is the value of the correlation squared, and it provides the proportion of variance accounted for by the relationship.

** . Correlation is significant at the 0.01 level (2-tailed); * . Correlation is significant at the 0.05 level (2-tailed); CBS = Capacity building challenge.

Capacity Building Strand (CBS) Levels 1 and 2 : Individual and Organizational

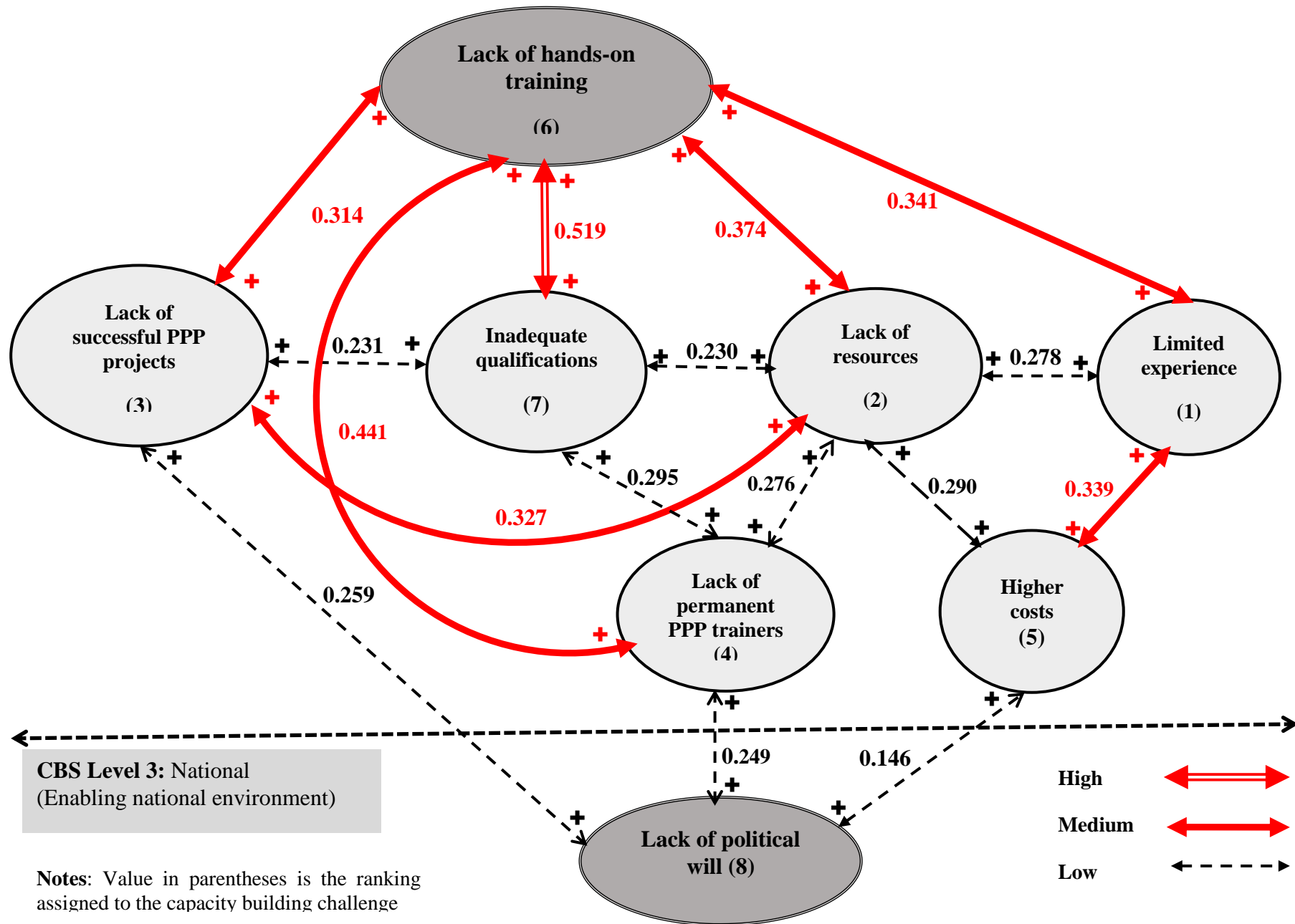


Figure 1: Roadmap of the capacity building challenges affecting the implementation of PPPs