Needs assessment of international capacity building using a Delphi technique

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Abstract

Purpose – The purpose of this paper is to engage African subject matter experts to assist with a needs assessment of international capacity building for developing countries in Africa, to establish a prioritized list of capacity building keywords substantiated by a current literature review.

Design/methodology/approach – A pragmatic mixed-method research design was used which involved conducting literature reviews and applying a modified Delphi technique to determine future research needs. The credibility of these results was strengthened by selecting a Delphi subject matter expert panel from African countries including Benin, Uganda, Rwanda, Burundi, Ethiopia, Ivory Coast, South Africa, Zimbabwe, Madagascar, Cameroon, Congo, Burkina Faso, Eritrea, Algeria and Nigeria. Non-parametric statistical techniques were used to objectively analyze the qualitative data and prioritize the findings.

Findings – The results clearly identified seven literature keywords which could improve future African capacity building research (in order of highest importance first): Trade Union (regional economic integration), Governance, FDI, Emigration, Education, Economic (small business stimulation), and Brain Gain. Additional keywords surfaced in the literature related to these ones, namely healthcare and brain drain (emigrating academics and scholars).

Research limitations/implications – The results of this study should generalize to government and capacity building policy administrators in Africa as well as to other researchers and practitioners in this field. The use of a novel modified Delphi technique should also be of interest to other researchers.

Originality/value – The modified Delphi technique commenced with a knowledge sharing conference where pre-selected subject matter experts collaborated to define the initial scope of questions. Another novel aspect of the customized Delphi technique was that the subject matter experts were required to conduct a literature review to substantiate their responses to questions.

Keywords FDI, Delphi, Ethics, Values, Social responsibility, Strategy, International trade

Paper type Research paper

1. Introduction

Practitioner-driven international capacity building is critical for the future development of African countries. Unfortunately, international capacity building projects have not always been effective mainly because they were designed without the involvement of African practitioners (Costello, 2010; Ika and Donnelly, 2017). In Africa, the most important factor to make international capacity building effective has been asserted to be the "how" it is done, with relevant experts involved, instead of the "what" is actually done (Brautigam *et al.*, 2008).

According to the extant literature the biggest challenge for international capacity building in African countries is that we do not know what is actually needed from a practitioner or scholarly perspective (Awidi and Cooper, 2015; Karikari *et al.*, 2015; Makinda, 2007; Omoruyi and Omiunu, 2014; Stewart, 2015). A needs assessment could be performed to close this gap (McGeary, 2009).

There are many successful international capacity building studies in the literature but there are no clear future research directions for Africa (Allen *et al.*, 2016; Alsudairi and Tatapudi, 2014; Awidi and Cooper, 2015; Barnes and van Laerhoven, 2015; Beynaghi *et al.*, 2016; Germak, 2014; Karikari *et al.*, 2015; Omoruyi and Omiunu, 2014; Steel *et al.*, 2016). Another reason that international capacity building in Africa requires more research is due to the longitudinal impact of the 2008 financial crises which forced small businesses

and not-for-profits around the world to re-evaluate their strategies (Strang, 2017). Therefore, a current needs assessment of capacity building in Africa should be undertaken.

Based on the above rationale, this study engaged African subject matter experts to assist with a needs assessment of international capacity building for developing countries in Africa. A pragmatic research design was used which involved conducting literature reviews and applying the Delphi technique to determine future research needs. Non-parametric statistical techniques were used to objectively analyze the qualitative data and prioritize the findings. The results of this study should generalize to government and capacity building policy administrators in Africa as well as to other researchers and practitioners in this field.

2. Literature review

International capacity building needs have become a heavily discussed topic for all the developing countries in Africa (AfDB, 2016; ACBF, 2016). Various terms have been used including capacity development, capacity strengthening, and various definitions have been provided but there is no broadly accepted definition (Makinda, 2007). According to Stockdill *et al.* (2002), international capacity building means "the intentional work to continuously create and sustain overall organizational processes" (p. 14).

According to Leautier (2014) the performance-oriented definition of capacity building comprises the ability of people, organizations, and society as whole to manage their affairs successfully and that is the process by which people, organizations, and society as whole unleash, strengthen, create, adapt, and maintain capacity over time. Capacity building requires the application of experiential knowledge that cannot be easily transferred from the individuals who possess it. In other words, capacity building refers to learning by doing in order to acquire tacit knowledge Leautier (2014).

The most important institutions who conduct international capacity building in African countries are the African Capacity Building Foundation (ACBF), African Development Bank (AfDB), United Nations Economic Commission for Africa, United Nations Development Programme, New Partnership for Development, World Bank (WB) and the International Monetary Fund (IMF). From all these institutions, ACBF and AfDB tend to be the leaders of capacity building in African countries. Thus, a needs assessment of capacity building should involve subject matter experts from these organizations.

The ACBF was launched in 1991 by 45 African countries to enhance the skills, strengthen institutions, and promote regional integration of participating countries. ACBF carries out its mandate through investments, technical support, knowledge generation, and competency sharing between African countries. ACBF not only invests by offering grants, it also provides grant management and technical assistance throughout the implementation of the capacity development intervention projects in Africa. To date ACBF has empowered governments, parliaments, civic society, private sector, and higher education institutions in more than 45 countries and six regional economic communities (ACBF, 2016). The report of the celebration of the 25th anniversary of ACBF reveals that the institution has invested more in over 321 capacity development projects, produced 73 knowledge products advocating emerging development issues, and has committed more than USD700 million to capacity development in Sub-Saharan Africa (ACBF, 2016).

The AfDB was created in 1963 by several African countries with the mandate to stimulate sustainable economic development and social progress in its regional member countries, with a secondary goal to reduce poverty. AfDB is considered the most influential institution to stimulate capacity building on the African continent (AfDB, 2016). The amount of approved loans for African countries reached USD7,696,164,000 in 2015 (AfDB, 2016). A significant part of those loans was devoted to capacity building throughout countries on the African continent. However, despite this huge amount of funding, capacity building has not been conclusively successful in African countries (Costello, 2010; Ika and

Donnelly, 2017) and there is no clear direction for future research needs (Awidi and Cooper, 2015; Karikari *et al.*, 2015; Makinda, 2007; Omoruyi and Omiunu, 2014).

The perception of capacity building in the African continent has not remained static for the last five decades. In 1960s right after the independence of most of African countries, the concept of capacity building refers to creating the different basic institutions needed to launch the socio-economic development of their countries. Public institutions like ministries and universities were created in some countries. In 1970s, the concept of capacity building refers to developing various technical skills, in particular rural areas – in agriculture in particular – but also in administrative sectors of developing countries (Stewart, 2015). This development of skills includes training in western countries which was in most cases the former colonizing country.

During years 1980s, with the structural adjustments almost everywhere on the African continent, capacity building has been perceived more as policies reforms in public sector, more involvement of private sector and NGOs to supplement the government actions and initiatives of development. In 1990, the term "capacity building" has gained an unprecedented worldwide recognition as a leading concept in international development referring to a new philosophy a capacity building focusing on empowerment and participation for a sustainable development (Brautigam *et al.*, 2008). In the years 2000s, there was a renewal of interest and engagement to capacity building with the United Nations Millennium declaration. Capacity building has been perceived as indispensable to reach that goal.

There is no academic consensus about who should initiate capacity building or how it should be deployed in developing countries and in particular on the African continent. According to Brautigam *et al.* (2008), two issues underpin the debate of international capacity building in Africa, namely:

(1) Should capacity building be a top-down government-driven process or bottom-up organic business-initiated process?

(2) Should capacity building be an external exogenous process stimulated from outside Africa or an internal endogenous process championed by African practitioners?

Interestingly, many African governments and international capacity building experts have thought that capacity building should be a top-down process coordinated by government. Hence, most of the financial support provided for capacity building has been given to the government of African countries. Various development models consistent to this approach were implemented in the last few decades (AfDB, 2016). In fact the most important counterpart of international institutions involved in capacity building in Africa is still the government of African countries (ACBD, 2016). Therefore, it is essential to involve subject matter experts from African governments to help with a needs assessment.

In contrast to the top-down approach for capacity building, there are some experts who think that capacity building should be an organic bottom-up or grassroots process. They refer to the view of the well-known American model of business which posits that economic development is not the result of top-down government action, nor the result of the invisible hand of the market, but instead it is the outcome of the visible hand of small business entrepreneurs and not-for-profits in the economy who create wealth (Brautigam *et al.*, 2016). In other words, by undertaking entrepreneurial initiatives, entrepreneurs and managers contribute to the economic development by organically creating wealth with associated tax revenues going to government and citizens. Thus, they create capacity for small business development through their entrepreneurial activities, and subsequently through their actions they stimulate government to continue capacity building funded by tax revenues. This view reflects the macro process of economic development of the USA and this approach is considered the most successful socio-economic capacity building system in the

world (Stewart, 2015). Thus, both African and western-based subject matter experts ought to be consulted when conducting a needs assessment of capacity building for Africa.

Capacity building could be an external exogenous process or an internal endogenous process. Many capacity building development projects for African countries were designed in western countries either by the former colonizers or by the USA. The problem with these exogenous efforts was that the western country capacity building project managers did not have a complete understanding of what was needed. Therefore, a more current needs assessment must take place. To date, most of these projects have not been successful to promote sustainable capacity building on the continent (ACBD, 2016).

On the other hand, the endogenous processes have not been very successful either for various reasons including the lack of appropriate expertise, and most importantly the lack of capacity building expertise from western countries (ACBD, 2016). Thus, exogenous and endogenous subject matter experts to Africa must be consulted to identify and prioritize what needs to be done to improve capacity building in African countries.

In the light of the literature review, it is clear that the capacity building effort deployed on the African continent for the last few decades has not been effective, especially after the 2008 global financial crisis. It is also clear that endogenous African-based experts and external western-based experts must collaborate to assess the needs and potential approaches for capacity building in African countries.

A needs assessment of capacity building must explore the existing literature with respect to how contemporary ideas and models could support emerging needs for developing African countries. This would lead to an agenda of what needs to be done in terms of research and action plans. A needs assessment is a systematic set of procedures undertaken for the purpose of setting priorities and making decisions about program or organizational improvements and allocation of resources using priorities based on identified needs (Lee *et al.*, 2007). According to Lee *et al.* (2007), a needs assessment for international capacity building involves five steps, as enumerated below:

(1) researching the "what should be" (target) status;

(2) researching the "what is" (actual) status;

(3) quantifying discrepancies between "what should be and what is";

(4) analyzing the causes of discrepancies; and

(5) establishing capacity building priorities.

The needs assessment of what should be (target) must reflect the goals of service recipients, service providers as well as the organizations like governments who provide the resources. A needs assessment must include a literature review of best-practices and experiences learning to avoid reinventing the wheel. Establishing the "what should be" and "what is" states can be done through interviews, literature reviews, surveys, and other data collection approaches.

Interestingly, the Delphi technique is recognized as an appropriate method for eliciting information for a capacity building needs assessment (McGeary, 2009; Lee *et al.*, 2007). A Delphi technique has been described as a qualitative data analysis and consensus method providing a means of harnessing the insights of appropriate experts to enable decisions to be made (McGeary, 2009; Strang, 2015). A literature review can also assist with the above and form the initial input to the Delphi technique (McGeary, 2009). Quantifying and analyzing discrepancies can be done through non-parametric statistical techniques and by making lists sorted by importance ratings. Priority setting may be done through non-parametric techniques such as the analytical hierarchy process or weighted scoring rating models (Strang, 2015).

Delphi is methodology created by Dalkey and Helmer (1963) at the Rand Corporation during the 1950s. It is a recognized formal research technique in the pragmatic category of ideologies associated with collecting and analyzing qualitative data (Strang, 2015). It remains a popular technique for bringing a group of subject matter experts together and determining a consensus especially when the questions are complex or controversial (Strang, 2015). Delphi is ideal for conducting a detailed needs assessment and discussion of a specific issue for the purpose of goal setting, policy investigation, or predicting the occurrence of future events (McGeary, 2009; Dalkey and Helmer, 1963). It differs from the survey method which attempts to identify "what is" because the Delphi technique addresses the "what could/should be" (Dalkey and Helmer, 1963). In the literature, Delphi has been applied for many uses such as program planning, needs assessment, policy determination, resource utilization as well as capacity building needs assessment (McGeary, 2009).

The Delphi technique is similar to the nominal group brainstorming process except in the former the subject matter experts do not need to be physically present. According to Dalkey and Helmer (1963), the Delphi technique involves up to four rounds of controlled question and answer sessions, where a central facilitator creates the initial set of questions through a literature review, sends out questions to a subject matter expert panel of usually 15-20 members in a confidential manner, then synthesizes, summarizes, and ranks the answers, and issues a new round of questions, until consensus or saturation is achieved. This multiple round of confidential question and answer feedback process encourages the subject matter experts to objectively reassess their initial judgments about the information provided in a previous round. Theoretically, the question and answer round can be continuously performed until a consensus is achieved or saturation is reached by in practice usually four to five rounds will be sufficient (Dalkey and Helmer, 1963).

Therefore, in a Delphi methodology, the results of previous question round regarding specific statements can be modified by facilitator as well as by the subject matter expert panel based on their answers and the ratings given (if any). Since the subject matter expert panel members are anonymous, they do not influence one another, as long as the facilitator ensures the process is controlled to do so. This eliminates many of the drawbacks of conventional data collection and decision making approaches. For example, non-response and participant attrition are not likely to be problems with Delphi studies. Instrument validity can be improved through the iteration process. Dominant personalities or group think are minimized by the anonymous response format and through the control of the facilitator. At any point the facilitator or panel members could cite literature or other evidence to clarify questions or to substantiate responses. In this way it may be considered an evidence-based empirical methodology, as long as there is an emphasis on citing sources for any opinions. Since the questions and answers are often typed (in e-mail) the Delphi technique is particularly useful for overcoming socio-cultural barriers at the national or organizational level (Strang, 2015). Therefore, the Delphi technique would be ideal for use in a capacity building needs assessment when African and western-based subject matter experts will be collaborating together.

The main weakness of the Delphi technique rests with the limitations of the facilitator in terms of competency and access to good quality literature for review. It is posited that one way to overcome the primary weakness of the Delphi technique would be to have more than one scholar perform the facilitation role. There is no specific requirement in the methodology for one person to serve as a facilitator as long as a dyad (two people) or a team could work effectively and objectively together. Thus, more than one qualified scholar could serve as a Delphi facilitator.

Additional weaknesses of the Delphi technique are the time it takes for data collection (one to two months are typical) as compared to alternative methods, and the unique requirement for a large number of qualified subject matter experts, whereas a traditional

study may require only one or two scholars. Time has an inherent risk so the study needs to be managed as a project to ensure uncertainty is reduced and any arising risks are mitigated (Strang, 2015). Nonetheless, when ample subject matter experts are available and willing to collaborate to improve capacity building, and since technology permits ample electronic communications, there should be no significant resource cost as compared to typical formal needs assessment studies. An assumption made here is that the subject matter experts are competent and roughly equal in ability with respect to provide opinions on African capacity building needs. Therefore, participant selection will be important.

In a Delphi method qualitative and/or quantitative data may be collected (Dalkey and Helmer, 1963). When open-ended questions are used to solicit subject matter expert opinions, the facilitator could use subsequent iterations with rating scales to quantify idea or recommendation priorities (Dalkey and Helmer, 1963). Qualitative data such as nominal data types can be summarized using frequency counts and bar charts (Strang, 2015). The major statistical measures for quantitative data are descriptive statistics which are measures of central tendency such as average and median along with dispersion standard deviation and inter-quartile range (Strang, 2015).

Statistical analysis techniques may be applied to prioritize the answers or recommendations (Dalkey and Helmer, 1963). In particular, non-parametric statistical techniques such as χ^2 contingency analysis, canonical correlation, and logistic regression may be applied to nominal and ordinal response ratings (Strang, 2015). A difficult task for the facilitator(s) of a Delphi study is to determine if and when a consensus has been achieved for a question or issue. According to the literature, a Delphi subject matter expert panel consensus has been achieved on a rated question when 80 percent of votes fall into two categories on a seven-point scale or least 70 percent of the responses are at 3 or higher on a four-point Likert type scale of agreement with a median of 3.25 or higher (Dalkey and Helmer, 1963). An alternative consensus benchmark would be to use an inter-rater agreement statistic such as a κ correlation (Strang, 2015), which calls for an 80 percent correlation effect size coefficient to signify agreement beyond chance.

The selection of subject matter experts for a Delphi study is considered the most important step in the entire process because it directly relates to the quality of the results generated (Dalkey and Helmer, 1963). Since the Delphi technique focuses on eliciting expert opinions over a short period of time, the selection of Delphi subjects is generally dependent upon the disciplinary areas of expertise required by the specific issue and by the availability of participants. There is some debate in the literature about which criteria to use as a guide to the selection of a Delphi subject matter expert panel, but at minimum the participants should have a related background or experience concerning the target issues and be capable as well as willing to contribute (McGeary, 2009; Dalkey and Helmer, 1963). Most importantly, the subject matter expert panel and facilitator(s) should be highly trained preferably as a scholar and be competent with the knowledge area under investigation (McGeary, 2009; Dalkey and Helmer, 1963). The facilitator(s) should be trained in research methods and with whichever statistical techniques will be applied to the data (McGeary, 2009; Dalkey and Helmer, 1963). In practice, the Delphi technique is applied by a facilitator using e-mail and the subject matter expert panel size ranges from 10 or 20 to a practical maximum of 50 (McGeary, 2009; Dalkey and Helmer, 1963).

3. Methods
In this research a qualitative mixed methods approach was employed. Given that the nature of this study was inductive – a needs assessment of future capacity building research – the data were collected first through qualitative questions, and later through ranked quantitative questions, and then analyzed using non-parametric statistical techniques due to the small sample size (Strang, 2015). Since this study was exploratory with a small sample

size (subject matter expert panel), distribution free tests used where possible and used a 90 percent level of confidence was applied for hypothesis testing.

A formal needs assessment is a form of action research method which begins with a project goal and concludes with a detailed action plan or in some cases a completed project (Strang, 2015). On this study, the Delphi technique was used in the first stage of the needs assessment to gain a consensus of informed opinion on the ideal requirements of future capacity building research for African countries. This approach is comparable to the method documented by McGeary (2009). Therefore, this study was actually the application of the Delphi technique and concluded when a consensus was achieved toward the African capacity building research needs.

However, the Delphi technique was customized for this study, based on the following workflow:

(1) confirm a qualified scholar-facilitator and identify a second qualified scholar-facilitator or qualified research assistant;

(2) identify the panel of capacity building subject matter experts from USA, Europe and African countries;

(3) confirm the willingness of individuals to serve on the panel during September-October 2016 (a conference was planned for September 2016 as per below);

(4) develop the initial list of African capacity building keywords using a literature review;

(5) Organize a conference so that subject matter experts could share initial issues and problems concerning the African capacity building keywords, moderated by the facilitator;

(6) summarize the conference qualitative presentation data and develop a short list of quantitative questions;

(7) round 1 – collect individual input on quantitative questions;

(8) summarize results and issue round 2;

(9) round 2 – collect individual input on quantitative questions;

(10) summarize results and issue round 3;

(11) repeat until saturation point reached (no change in results) or a consensus is achieved – in this study consensus was achieved after round 2;

(12) analyze data and perform brief literature review to substantiate recommendations;

(13) share results with subject matter experts and invite constructive feedback;

(14) incorporate subject matter expert constructive feedback; and

(15) document study and disseminate responses to the community of practice through a recognized high-quality peer reviewed indexed journal.

The author was the primary Delphi facilitator (based at a USA university) and a college-educated colleague from an African country volunteered to serve as co-facilitator. The participants were selected by conducting a literature review and e-mailing the authors of relevant capacity building studies. Additionally, the members of the Center for Economic Development and Economic Movements in Society organization who had hands-on experience in capacity building were contacted and invited to apply for the project. A list of the subject matter expert panel members is available upon e-mail request to the corresponding author. Several of the subject matter experts has served on relevant capacity building projects or in organizations involved in related funding such as WB, AfDB, and ACBD.

The original subject matter expert panel contained 71 members and this was reduced to 32 active members after participation in the mandatory conference held September 1-3, 2016.

Participants were told to submit a research presentation for peer review, and if accepted, they would be invited to present their paper, which would be followed by an open knowledge sharing discussion at the conference. The final participants originated from 23 home lands: Benin, Uganda, Rwanda, Burundi, Ethiopia, Ivory Coast, South Africa, Zimbabwe, Madagascar, Cameroon, Congo, Burkina Faso, Eritrea, Algeria, Nigeria, Finland, Poland, China, France, Haiti, Canada, Albania and the USA. Of these 32 participants, all were considered subject matter expert scholars in international development or capacity building.

4. Results and discussion

The initial conference agenda informed participants that they would first hear various subject matter expert presentations and then collectively engage in brainstorming to help the facilitator develop research questions about capacity building needs in Africa that were not already addressed in the contemporary literature. The brain storming session took place using the nominal group technique toward the end of the conference after all of the presentations had ended. Random breakout groups recorded and ranked individual ideas in separate rooms about how to improve capacity building in African countries, then everyone came together and collectively the best ideas were presented and ranked at a common session. The author did not participate in generating the ideas, only in collecting and organizing data.

The following were the topics presented, shared, and discussed at the conference. These presentations show the relevancy of the subject matter expert contributions and they also serve to help other researchers to understand the nature of capacity building issues in African countries:

- Capacity building: apparently rational but misguided.
- ACBF priorities and challenges of capacity building in Africa.
- Capacity building in Africa: from syndromes of poverty to a real moral re-armament of mentalities.
- Capacity building and small businesses, entrepreneurship and firm internationalization in developing countries.
- Capacity building and internationalization of SMEs from developing countries.
- Capacity building by promoting grassroots entrepreneurship and innovation in the horn of Africa.
- Assessment of the business environment of SMEs in Africa.
- Developpement de Capacites par l'Entrepreneuriat Feminin: L'experience Malgache.
- Capacity building and economic transformation in developing countries.
- Capacity building for economic transformation in Africa: closing the gap.
- Capacity building in Africa: testimonies from an International Monetary Fund expert.
- Capacity building and diaspora remittances, foreign direct investment and governance in developing countries.
- Comparative study of foreign direct investments from developed countries vs china in Africa.
- Capacity building, the legal system and foreign direct investments: the case of African countries.

- Governance in Africa: challenges, actors and policies.
- Diasporas contributions in the development of their home country through capacity building.
- Capacity building and education, knowledge transfer and success factors in developing countries.
- Capacity building in the education system of developing countries: testimonies of a diaspora.
- Under what circumstances does capacity building work?
- Strategic knowledge transfer in cross border partnerships: Africa-China success stories and pitfalls.
- Identification of needs and suggestions for experiential training in Democratic Republic of Congo
- Capacity building beyond remittance in Africa: the role of knowledge transfer.
- Capacity building in developing countries through new management approaches.
- Managerial practices learning and capacity building in businesses between Africa and China.
- Analytical literature review and lessons to learn for capacities building in Africa.
- Human resource management practices and capacity building of the companies in Africa: literature review.
- Promoting diaspora entrepreneurship in African cities.
- Toward a better understanding of the determinants for the growth of African companies.
- Capacity building and environment issues, natural resources, institutional, and governance challenges.
- Capacity building and environmental challenges in developing countries.
- Challenges facing capacity building in developing countries?
- Exchange rate and destruction of capacity: lessons from the German unification.
- Globalization, Culture and capacity building in developing countries: the case of Cameroon.
- Capacity building and export from developing countries: case of Burkina Faso.
- Economic integration and investments in Sub-Saharan Africa: theoretical and empirical assessment.
- Important capacity developing questions and future research plans.

Following the conference, the facilitators summarized the African capacity building issues and challenges presented at the conference by the subject matter experts. A list of 23 core questions was developed and circulated to the subject matter experts. The experts were requested to respond with clarification questions and to supply up to two keywords for each question to identify research needed to improve African capacity building. In round 1 the goal was to confirm the core questions, verify the face validity and relevance of the questions, and develop the keywords. Participants responded with clarification questions and suggestions. The result was 0.83 unstandardized inter-rater agreement reliability (only four out of 23 questions were revised). Thus, the reliability of the capacity building questions and keywords was adequate. In this way, content validity of the instrument was achieved.

Initial African capacity building questions sent to Delphi subject matter experts are as follows:

(1) How can an African without a Visa get a job or business opportunity anywhere on the continent?

(2) What is the potential for an African-wide trade agreement?

(3) How could we retain African's best talents within the continent?

(4) Is there a diaspora brain gain to Africa?

(5) How can African citizens and businesses work effectively with government?

(6) Examine strategies of retaining the capacities that have been developed and how to assure a good maintenance of infrastructure?

(7) Explore how to build capacities in the healthcare systems?

(8) Design communication strategies with WB and International Monetary Fund in order to explain and promote mind set change?

(9) How can we exploit more internal resources instead of external resources?

(10) Is there successful infrastructure in Africa?

(11) How can we focus on capacity building at the organization level; it has been so far at a country level?

(12) How can we fix the failure of the education system?

(13) Are information technologies roles disseminated (documented)?

(14) How can we have a good civil service?

(15) How much ethics education is part of the education system?

(16) When will there be a creation of the Civil Society Institute?

(17) Could we have a formal civil society?

(18) How could we cope with problem of lack of trust in Africa business environment?

(19) Why is Africa not experiencing sustainable development although a huge amount of capital flows?

(20) Getting emerging and developing countries more involved in the governance of WB and International Monetary Fund?

(21) Does China have more influence than Taiwan on African healthcare?

(22) Examine the impact of the increasing influence of China in Africa and explore what to do?

(23) How do you resolve the issue of time management in Africa?

The results of round 1 keywords from the subject matter experts are summarized in Figure 1.

In round 2 the facilitators sent the subject matter expert panel the refined list of questions with keywords and requested a vote on which items were essential for improving the future of African capacity building research. Participants were asked to conduct a literature review to substantiate that the keyword was actually not already answered in the extant literature. A Pearson χ^2 test of independence confirmed that the initial keywords were not significantly different from the refined list, based on an $\chi^2(78) = 95.322$, $p = 0.089$ with a Likelihood Ratio of 66.041 ($p = 0.831$). This analysis was conducted using SPSS (IBM, 2013).

Practice
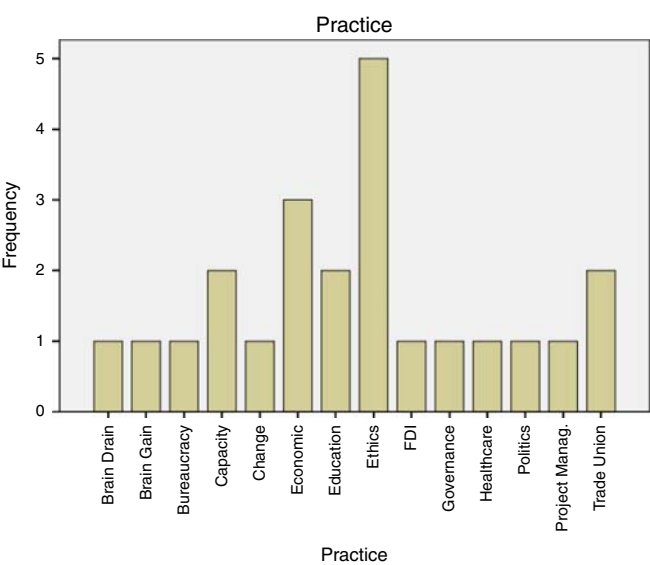
Figure 1.
Frequency chart of
subject matter expert
capacity building
keywords

The results clearly indicated a consensus had been achieved of seven final keywords to represent the most essential needs of future African capacity building research. Figure 2 shows the final consensus of seven keywords and their importance according to the number of votes.

The results were informative. Seven literature topics emerged which could accommodate all the African capacity building research needs, namely: Trade Union (regional economic integration), Governance, FDI, Emigration, Education, Economic (small business stimulation), and Brain Gain.
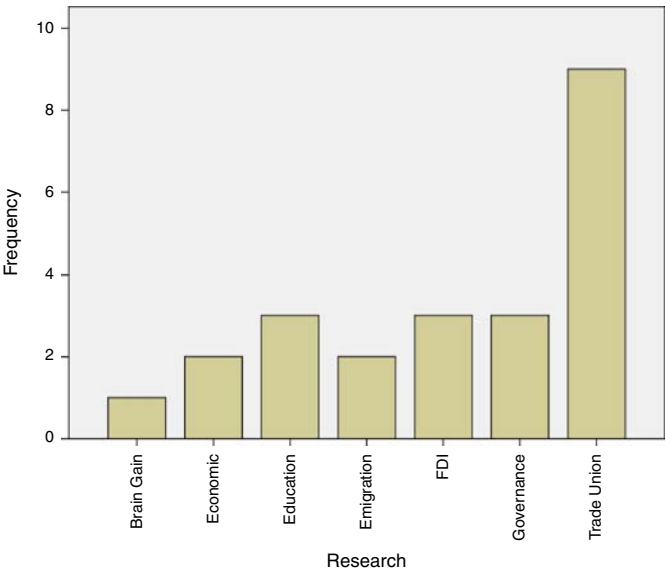
Figure 2.
Consensus of capacity
building keywords
needed for future
research

The subject matter experts identified relevant capacity building literature to substantiate their votes. The Trade Union factor presented as a distinct and powerful research need for capacity building. In Africa subject matters traditionally refer to this as regional economic integration since there are already several African trade union initiatives. The literature substantiates that Healthcare, Brain Gain, and Governance are also important for future African capacity building. Interestingly, the Education keywords were often linked in the capacity building literature to emigration, politics, economic (stimulation), and governance. This seems to imply that these topics may be combined in a research effort to improve education practices, which is a fundamental tenant of a developed nation (Awidi and Cooper, 2015; Beynaghi *et al.*, 2016; Omoruyi and Omiunu, 2014; vanderHeiden *et al.*, 2015). Another perspective on this is that maybe emigration is related to education in as far as the lack of quality education leads to higher emigration.

There is a great amount of African capacity building literature addressing trade economics, FDI, ethics, bureaucracy, healthcare, and governance but very little if any on brain gain. Alsudairi and Tatapudi (2014) examined the impact of government policy on the economy and the quality of life within the context of capacity building in east African countries near the Gulf. They concluded that business development was one of the most important beneficial activities and in particular that could be achieved by making national governance entrepreneur friendly. Another positive factor was what they called a social innovation strategy that encouraged government ethics (public welfare) and accessibility by providing government services through the internet. They asserted that e-government leadership should promote knowledge sharing and intellectual capital management activities. Apparently they imply that improving business education and developing internet access technology are key tenants of capacity building in the African Gulf region. These are similar to the findings of Barnes and van Laerhoven (2015) which were cited earlier.

Makinda (2007) had come to a similar conclusion for a broader generalization. He argued that African country businesses and governments need strong scientific and technological intellectual capital because although there is an abundance of natural resources on the continent, citizens do not have the knowledge to effectively and efficiently leverage them instead of allowing foreigners to extract them at low prices. Makinda also argued that African nation capacity building ought to include leadership development training along with better ethical, political and legal initiatives promoting participatory democracy, peace building, and socio-economic justice for poverty stricken zones.

Leadership development is high on the list of capacity building requirements in developing nations (Alsudairi and Tatapudi, 2014; Beynaghi *et al.*, 2016; Germak, 2014; Koski and Lee, 2014; Lan *et al.*, 2014; Mataira *et al.*, 2014). Operational governance and human resource training are related. Having operational governance is two-part: first documentation needs to be created to articulate the procedures and policies and thereafter human resources, staff and volunteers, need to be continuously trained (Cantrell-Bruce and Blankenberger, 2015). While there is no doubt that transformational leadership is an important competency for implementing capacity building in developing nations (Lan *et al.*, 2014; Strang, 2012), strategic planning must be done to ensure there is a strategy in case the leader needs to be replaced due to attrition or unexpected risks occurring (Hamilton and Brown, 2016). Successor planning is an important component of capacity building leadership since less human resources and finances may be available to undertake a full recruiting program in an African country, especially to fill a key position requiring the unique socio-economic knowledge of the local products or services (Hoefer and Sliva, 2014). Contingency planning is related to successor planning. Contingency planning is important for commercial businesses in developed countries so it is equally essential in African countries to ensure continuity (Lock *et al.*, 2016), and perhaps more so given the scarcity of

externally educated assets willing to return as brain gain (Jayashankar *et al.*, 2015; Vallejo and Wehn, 2016).

A number of researchers had earlier identified technology as an important factor for African capacity building projects (Awidi and Cooper, 2015; Pick and Nishida, 2015; Zlotnikova and van der Weide, 2015). Technology generally refers to business software but it could also include individual devices such as laptops and cell phones (Cardoba *et al.*, 2014; Trencher *et al.*, 2014). Bos and Brown (2014) claimed that socio-technical systems such as enterprise resource systems (ERPs) that help large institutions manage their complex processes and technology is essential in a modern business world – there are large businesses in African countries so ERPs are needed there too. Two key points they conferred were that technology systems must be customized to support the programs and that training must be provided to transition new employees and volunteers joining the institution.

Pick and Nishida had revealed that it was important to customize information technology training since the needs of specific African countries differ greatly, especially from coastal to central and from Anglophone to Francophone zones (Pick and Nishida, 2015). For example, since most software user interfaces are in English, they may be of little use to any region where residents speak only Afrikaans or French. Awidi and Cooper (2015) studied capacity building for universities in Ghana (Africa). They recommended transitioning business training into online delivery modalities in order to embrace the mobile continuous learning demands of a modern developing nation. A hidden value of their research was how capacity building was provided to the universities, and in particular how they selected teams as well as developed the leader. Their study was a good example for how to apply project management principles in a capacity building initiative.

Capacity building in African healthcare is inter-related to public policy development and governance. Lewis *et al.* (2015) examined how healthcare practices could be improved in a developing nation through community based participatory research projects. Their study investigated how to improve capacity building in Southern USA-based African-American communities so this may not generalize directly to African countries although it could inform brain drain research. Their findings suggested that initiating collaborative activities were successful in developing productive scholarly relationships between researchers and community leaders, which in turn led to increased capacity for submitting good quality competitive grant applications. The final results were positive since 75 percent of the submitted grant applications were successfully funded. They also mentioned the importance of developing cultural competencies along with trust in capacity building projects consisting of African-Americans and domestic academic researchers. We would suggest a next step in this type of capacity building research would be to initiate projects where western-world researchers who left Africa return to their homeland to implement projects there, with the hopes that the socio-cultural and trust gaps are minimal, and perhaps these scholars would permanently relocate to Africa. This may also serve to reduce the African country brain drain if capacity building projects required the participation of local scholars, so as to develop them as domestic role models and to serve as self-actualization for remaining in Africa.

Education, capacity building and change topics were often inter-linked in the literature. The study cited earlier by Awidi and Cooper (2015) discussed how providing education in Ghana could lead to more intellectual capacity and possibly to retain domestic talent, reducing brain drain and emigration out of Africa. One of the more innovative ideas for capacity building education in Africa was published by Karikari *et al.* (2015). Their idea was to develop biomedical research expertise in Africa through knowledge transfer about applying bioinformatics to facilitate biomedical analysis. They found that most African laboratories and medical research institutions had inadequate infrastructure, training opportunities, research funding, human resources and minimal bio repositories to

use for testing. They asserted that research funding and infrastructural support were the two most important capacity building activities that would improve healthcare knowledge in African countries. Perhaps another capacity building avenue to investigate would be inviting western-world bio-medical companies and universities to partner with their African counterparts in establishing local infrastructure using the argument that many potent viruses (Zika) and diseases (e.g. Aids) have originated in and continue to surface from African countries. There would be better opportunities to collect data and study the environment where many of these health risks occur.

Being ethical and socially responsible seems like a de facto process for a developed nation but these were identified in our study as the most common type of African capacity building research needed. There have been many studies about the capacity building to improve government ethics and social politics (Dedeurwaerdere et al., 2016; Gebauer and Saul, 2014; Khieng, 2014). Jayashankar et al. (2015) asserted that in our current climate of fiduciary capitalism, capacity building projects must include non-financial goals in order to address the concerns of a broader range of their stakeholders, especially government ethics and social responsibility. There is additional support in the literature for capacity building to improve agriculture, organics, and other good-citizen aspirations (Clark and Martinez, 2016; Wohlgemuth, 2014).

5. Conclusions

This study clearly identified high priority needs for future African capacity building research. The results clearly identified seven literature keywords which could improve future African capacity building research. These keywords were empirically grounded in the contemporary literature. The keywords were (in order of highest importance first): Trade Union (regional economic integration), Governance, FDI, Emigration, Education, Economic (small business stimulation) and Brain Gain. Additional keywords surfaced in the literature related to these ones, namely healthcare and brain drain (emigrating academics and scholars). The results should generalize to African developing country governments as well as to other stakeholders including funding organizations and researchers.

The research methodology used in this study was unique and relevant for other researchers. It was a mixed methods qualitative and quantitative data collection approach with a modified Delphi technique. The credibility of these results is strengthened by the fact that 32 of the participants were emigrants from African countries such as Benin, Uganda, Rwanda, Burundi, Ethiopia, Ivory Coast, South Africa, Zimbabwe, Madagascar, Cameroon, Congo, Burkina Faso, Eritrea, Algeria and Nigeria. Non-parametric statistics and contemporary current literature reviews to substantiate the findings.

The most interesting aspect of the study was that the Delphi technique commenced with a knowledge sharing conference where pre-selected subject matter experts collaborated to define the initial scope of questions. From there the traditional Delphi technique was applied to narrow a list of 23 questions into seven essential prioritized keywords. Another novel aspect of the customized Delphi technique was that the subject matter experts were required to conduct a literature review to substantiate their responses to the second round of deliberations. The results of the consensus and literature reviews were used to generate ideas for future African capacity building research.

As with any study, there are a few limitations. First, the subject matter expert panel as a sample size was small. This could be improved by replicating the study using additional panels. Second, there may have been bias in the selection of keywords and the citation of empirical literature topics since they were from African countries with limited access to current scholarly periodicals. Nonetheless, the citations were very current, with most falling within the last five years.

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