Social Risks Influencing Export of Construction Services into African Markets

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Abstract
International construction studies have examined the impact of political, socio-cultural and economic/financial risks on export of construction services into overseas markets. Yet, limited studies examined international risks within African construction markets. The rationale for this paper stems from the recent social issues like outbreak of Ebola virus in West Africa and Boko Haram insurgencies within the African sub-region. This paper examines the social risks influencing export of construction services and whether there are significant social risks that influence export of construction services into African markets. The research adopted a convergence mixed method approach while stratified random sampling of 597 construction companies with work categories in civil engineering and general buildings, and listed on Grades 7 to 9 of the cidb Contractor register in South Africa was undertaken. Data collected from 58 construction companies who responded to the survey were analyzed using descriptive (mean score) and inferential (factor analysis) statistics. The social risks influencing export of construction services into African markets that emerged are threat of terrorism, difficulty of doing business, high crime rate and theft. Based on these findings, the paper concludes that there are significant social risks influencing export of construction services into African markets and that these risks can be classified into two dimensions for ease of their management. The paper recommends that there is a need for both international and South African construction companies, keen on expanding their geographical footprints across the border into Africa to put in place strategies that will adequately address the social risks identified.

Keywords
African Construction Markets, Construction Export, Construction Services, International risks, Social Risks

1. Introduction

Globalization the pater of *internationalization* is an interaction among people, corporations and governments of different nations aided by industrialization and information technology (IT) and driven by international trades and investment. It involves transfer of skills, capacity and capabilities mostly from developed to under-developed/developing economics and vice versa (Ofori, 2000; Ngowi *et al*., 2004). This is supported by the universal fact that the world has become "a global village" where the construction sector is a key driver for its development. As a result of this, construction markets have merged into a world (global/international) market due to the consequence of globalization (Ngowi, et al., 2004), which ensures free flow of skills (technical and managerial), resources (human and financial) and technologies. The global construction market was valued at US$8.7 trillion and US$7.5 trillion in 2012 and 2014 respectively, and projected to have a value of US$15 trillion in 2015 (Kenter, 2014). The African construction market is also becoming significant due to deficits in infrastructural needs (AfDB, 2011; Deloitte and Touche, 2013). Infrastructure need within African markets is set at about $93 billion per year (AfDB, 2011). Recently, approximately US$222.8 billion is being invested in 322 infrastructure projects across African continent (Deloitte and Touche, 2013). The major share of global construction markets have been controlled over the

years by companies originating from the United States, China, Japan, Russia, and Canada (Messner, 2006; Kenter, 2014), these same cohort - few large international contractors from US, Europe and Asia, dominate the African construction market (Reina and Tulacz, 2010; Deloitte and Touche, 2013) while the participation of African-based contractors in African construction markets is considerably low (Reina and Tulacz, 2010). The reason for the highly oligopolistic nature of the African construction market is debatable and demands investigation.

Overseas construction projects are more risky when compared to typical risks that local/domestic projects face (Loo, *et al*., 2013). Moreover, overseas projects also have unique risks and tend to have high possibility of failure (Han *et al.*, 2007). Risk is a critical issue for overseas business and also affects company's decision to expand into international markets (Park *et al.*, 2014). Risks in international construction markets have been categorized severally into social risk (Fang *et al*., 2004; Zhang, 2011), political risk (Agarwal and Felis, 2007; Xiaopeng and Pheng, 2013), economic/financial risk (Ling and Hoi, 2006; Ozorhon et al., 2007), construction/project risk (Zhi, 1995; Dikmen et al., 2007; Hastak and Shaked, 2000), market risk (Hastak and Shaked, 2000) and country risk (Dikmen et al., 2007). These classes of risks are also further categorized into either country or project risks for the purpose of this study. Country risks are risk factors, which originate and are specific to an individual country, and are classified into political, socio-cultural and financial/economic risks (Park, *et al.,* 2014). Project risks on the other hand are those associated with project execution in an overseas country, which include risks associated with procurement, design and construction (Dikmen et al., 2011).

The rationale for this paper, stems from recent trends in social issues happening across the African continent. Key among these is the outbreak of the Ebola virus in West Africa and Boko Haram insurgencies dominating Cameroon, Chad, Niger and Nigeria in the African sub-region. In contrast to traditionally experienced risks such as political and economic/financial, the dynamic realms of risk management in international business environments make international contractors to be confronted with a new concern, that is, social risks which are the social consequences and impacts on business activities in overseas markets (Kyle and John, 2005). Zhang (2011) reported that social risk, which plays an increasingly significant role in the globalization era has been largely ignored in existing international construction studies. There is also dearth of researches on overseas construction and international risks within African construction markets. Moreover, little attention has been paid to the impact of social risk in international construction markets and ignoring social risk may lead to incorrect entry mode decision into foreign markets by construction companies. This research examines the social risks in overseas construction with a view to establishing whether there are significant social risks that influence entry decision of South African construction companies into African markets.

2. Overview of Social Risks

Social risk is the vulnerability of companies to social issues (Zhang, 2011) and their consequences on business activities in overseas markets. According to Zhang (2011), social risk is not a routine event but occurs when stakeholders identify a company's vulnerability on social issues such as potentially provocative policy, human rights, labour, or environmental sustainability, ethics, or practice and pressure on the organization to change its approach. Zhang (2011) established that the occurrence of social risks in international construction vary from market to market and project to project; and if these are not properly predicted, or addressed and/or regulated, their consequences could be severe. Zhang (2011) reviewed previous studies on social risks (Chan et al., 1997; Clark and Tunaru, 2001; Shen, 2001; Campbell, 2002) and established that social risks consists of dispute with local construction labour, discrimination risk, ethical and religious strife, permit or license risk, construction planning issues, poor social relations in the local region, dishonesty of employees, bribery or fraud by local employees, policy changes, difference in laws or regulations and local protectionism (for local projects). Social risks identified by Zhi (1995) in risk management for overseas construction projects most especially in China and Fang *et al*. (2004) in a similar study conducted on the Chinese construction market comprises low social security at project location, lack of education, communication and hospital facilities, pollution problem, language barrier, lack of free

market mechanism, differences in culture and customs, lack of commodities, war/social disorder, pestilence, popularity in informal relationships and brotherhood. Earlier studies that identified the social risks influencing export of construction services were reviewed (Clark and Tunaru, 2001; Shen, 2001; Campbell, 2002; Fang *et al*., 2004; Zhang, 2011) in other to develop an instrument and constructs for this study. The social risks identified from literature were reframed to ensure clarity of information to the study population and to portray regional markets. Those, which formed the research constructs, are outlined in Table 1.

3. Research Methodology

This paper examines the social risks that influence the export of construction services into African markets among the construction companies listed in Grades 7 to 9 of the Construction Industry Development Board (cidb) Contractor register in South Africa. The revenues of Grades 7, 8 and 9 of construction companies range between R13,000,000 to 40,000,000, R40,000,000 to 130,000,000 and R130,000,000 to no limit respectively. These revenues are approximate equivalents of 1.3-4millionUSD; 4-13millionUSD and 13millionUSD to no limit respectively. Research data were collected using a convergence mixed method research approach combining the survey and interview of construction companies. Those on the highest grades were selected because Engineering News Record (ENR) ranking of international contractors is majorly based on companies' international revenues. Review of literature was undertaken to identify the significant social risks highlighted in international construction studies. These formed the constructs of the survey and interview questions. Selection of construction companies for survey was made using stratified random sampling technique since the construction companies in South Africa are grouped and classified either into grades (revenues), provinces and work categories on the cidb Contractor register. The selection of construction companies for interviews conducted was made using a purposive random sampling technique because the study focused mainly on those exporting construction services within the Grades 7 to 9 cohorts and not on the entire population of construction companies in the selected grades. The survey population comprise of those on Grades 7 to 9 whose work categories are in general building (GB) and civil engineering (CE), while interviews were conducted within the same population but choice of companies interviewed focused on three provinces Gauteng, Kwazulu Natal and Western Cape in South Africa. These provinces were selected because the head offices of the top construction companies within these Grades in South Africa are based in these provinces.

A list of 707 construction companies used as unit of analysis was obtained from the cidb contractor register in 2013 although some of these companies were listed in more than one work category (GB and CE). Those contractors whose construction work category falls into either civil engineering or general building were selected for this study**.** After cleaning out the cidb repository, a total of 597 construction companies were invited to participate in the research since information on those actually exporting construction services was not available. At the end of the survey period, 58 construction companies that spanned across the three registration Grades responded to the survey and were used for analysis. The response rate of approximately 10% was obtained which provides insight into the proportion of South African construction companies exporting their services overseas and/or within African construction markets. The identified social risks identified from the literature review were provided and the responding officers of the companies were asked to rank how frequently their companies encountered social risks provided when making entry decisions into, and when operating within the African construction markets. In addition, respondents were asked to rate the impact of the identified social risks on their decision to enter into overseas construction markets. The results of their responses to these questions are outlined in the findings and discussion section of this paper. This paper presents results, which is part of an ongoing study into construction companies' capacities and its relationship with risk perception in African construction markets. A reliability test was conducted to test the robustness of data collected and the result of the Cronbach alpha test was significant (α=0.951) for the 13 social risks identified. Quantitative data collected were analysed using descriptive (mean score) and inferential statistics (factor analysis). The Mean score was used in ranking the perception of construction companies on the significant social risks influencing export of construction services decision, while factor analysis was employed in reducing the identified 13 social risks into major components.

4. Findings and Discussion

This section provides details on the findings of the research into social risks in the African construction markets.

4.1 Background Information of the Construction Companies

The capabilities of South African construction companies on Grades 7 to 9 in terms of their revenues are presented in the research method section of this paper. Interviews conducted shows that, the 8 construction companies interviewed are specialized in civil engineering (CE) and General building (GB). The level of involvement of South Africa construction companies in export of construction services from the interview conducted shows that out of eight construction companies, one company is an expanding exporter, three are continuing exporters, another three are new exporters and one is a non-exporter. It was found that the services export of these construction companies was highly concentrated in Namibia, Botswana, Swaziland, Mozambique, Angola and Ghana, which are countries within the Southern African Development Community (SADC) excluding Ghana. Other countries in which South African construction companies have moderate operations are Tanzania, Congo DR, Kenya, Nigeria, Sierra Leone, Mauritius and Madagascar while their operations in other countries are low.

4.2 Social Risks influencing Export of Construction Services

Table 1 shows the ranking of the social risks influencing export of construction services into African markets among South African construction companies. Table 1 reveals that the top rated factors on a scale of 1 to 5 are threat of terrorism, difficulty of doing business, high crime rate and theft with mean scores 3.74, 3.55, 3.54, and 3.47 respectively., Other social risks comprising of the need to import expatriate skills and the availability of work permits, under-developed/inadequate access to infrastructure, high cost of infrastructure, poor work ethic/attitude to work, lack of social mobility within local labour/staff, low quality of infrastructure, high staff turnover/frequent loss of key employees, low level of education and social benefits requirements, were also ranked higher than the average rating of 2.5 and perceived to be significant to construction services export decision into African markets. .

Table 1: Social Risks influencing Construction Services Export

Code	Social Factors	SD	Mean	Rank
SR1	Threat of Terrorism	1.26671	3.74	1
SR2	Difficulty of doing business	1.15542	3.55	2
SR3	High Crime rate	1.14491	3.54	3
SR4	Theft	1.08396	3.47	4
SR5	Need to import expatriate skills and the availability of work permits	1.17495	3.40	5
SR6	Underdeveloped/inadequate access to infrastructure (transport services, housing, electricity, water etc.)	1.18340	3.29	6
SR7	High cost of infrastructure	1.01763	3.21	7
SR8	Poor work ethic/attitude to work	1.16645	3.13	8
SR9	Lack of social mobility within local labour/staff	1.00779	3.11	9
SR10	Low quality infrastructure	1.02355	3.08	10
SR11	High Staff turnover (frequent loss of key employees)	1.14801	3.08	11
SR12	Low level of education	1.21190	2.87	12
SR13	Social benefit requirements	.85507	2.84	13

SD-Standard Deviation,

Supporting the findings of this paper are the works of Zhang (2011) who established that social risks occur when there are potentially inflammatory policies which may create difficulty of doing business; human rights issues which may be connected to threats of terrorism, crime rate and theft; labour

factors in forms of availability of required skills and challenges in obtaining permits for the expatriates who are required to work on overseas construction projects. Other social risk factors are related to the ethical conduct of the workforce at the project location in the overseas markets. The findings are also aligned to the work of Fang et al. (2004) who raised issues of social security, which is connected with the threat of terrorism evidenced in Boko Haram activities in the West African sub-region, high crime rates and theft. Among others social risks identified by Fang *et al.* (2004) and aligned to the findings of this research are social risks related to infrastructure challenges within the African region, as there is dearth of basic infrastructure (good roads, water, electricity, communication and hospital facilities) across the region (AfDB, 2011). Those available are of low quality and the cost of providing the basic infrastructure is equally high. Other prevailing social risks in overseas businesses that emerged in this study and aligned to the study by Fang et al. (2004) are: outbreak of pestilence like Ebola virus in the West African sub-region, differences in language, culture, customs and beliefs, wars and social disorder.

4.3 Classification of Social Risks influencing Export of Construction Services

In other to further explore the construct of social risks, the social risks listed and ranked in Table 1 were subjected to factor analysis with each item treated as variables with the aim of reducing them to few significant factors which will be used in the description of closely related factors and those sharing the same features (Odediran and Babalola, 2014). The appropriateness of the list of social risks was tested using Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (MSA) and the Bartlett's test of sphericity. The KMO value of a set of scores should be close to 1 for factor analysis to yield distinct and reliable factors (Field, 2005) and KMO measure of sampling adequacy should be greater than 0.5 for satisfactory factor analysis to proceed. The result obtained satisfied these conditions and are presented in Table 2. The KMO value of 0.863 was obtained, showing that factor analysis is appropriate for the type of data collected for this study, and that the Bartlett's test of sphericity was highly significant ($\chi^2 = 476.790$, $p < 0.01$).

Table 2: Test of Sample Adequacy, Appropriateness and Reliability

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.863
Bartlett's Test of Sphericity	Approx. Chi-Square	476.790
	Df	78
	Sig.	.000

The result of factor rotation yielded two (2) components as shown in Table 3 which classifies the identified social risks into various groups sharing equal and relevant features, and factor analysis also reduces a large number of factors to a smaller number of groups for modelling purposes. Social risks identified were grouped as sub-factors under the two (2) components identified from factor loadings as shown in Table 3. The loading scores ranges from 0.677 to 0.912, which is moderately high compared to an absolute loading of 1. The strength of a particular factor in factor analysis result depends on how close its loading value is to 1. The thirteen (13) social risks loaded into the rotated component matrix produced two (2) components and based on the common features of the social risks within each of the groups, the components were labeled as human capacity, resource and social requirements (Component 1); and social stability and security (Component 2) (see Table 4). The yielded rotated risks under Component 1 were nine (9) consisting of low level of education, need to import expatriates skills and the availability of work permits, poor work ethic/attitude to work, social benefit requirements, lack of social mobility within local labour/staff, high staff turnover, underdeveloped/inadequate access to infrastructure, low quality of infrastructure and high cost of infrastructure. Although these social risks were perceived to be significant to the export of construction services within African construction markets none forms part of the four (4) top ranked social risks (see Table 1). This confirms that human capacity, resource and social requirements among other social risks highlighted in this paper will have a moderate impact on construction services export within African markets when compared to those ranked higher on the list.

Table 3: Rotated Component Matrix[a] of the Social Risks

	Factors	Component 1	2
SR1	Low level of education	.847	
SR2	Need to import expatriate skills and the availability of work permits	.891	
SR3	Poor work ethic/attitude to work	.857	
SR4	Social benefit requirements	.677	
SR5	Lack of social mobility within local labour/staff	.775	
SR6	High Staff turnover (frequent loss of key employees)	.808	
SR7	Difficulty of doing business	.	.660
SR8	Underdeveloped/inadequate access to infrastructure (transport services, housing, electricity, water etc.)	.815	
SR9	Low quality infrastructure	.850	
SR10	High cost of infrastructure	.779	
SR11	High Crime rate		.912
SR12	Theft		.903
SR13	Threat of Terrorism		.862
	Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 3 iterations.		

The yielded rotated social risks under Component 2 were four (4) comprising of difficulty in doing business, high crime rate, theft and threat of terrorism. These four (4) are the top ranked social risks on Table 1 and have high loading values based on the results of the factor analysis performed. These results show that social stability and security as well as the availability of social infrastructure such as good roads, water, electricity, communication and health facilities are the key social risks within African markets that have significant impact on the export of construction services. Hence, it is imperative that international construction companies planning to operate/expand into African markets must note these social risks/challenges within the region and understand the state of social infrastructures within the locality of the proposed operation before deciding to export their services or operate in the target market.

Table 4: Reduced Component Social Risks

S/N	Component Factor	Sub-Factors
A	Human Capacity, Resource and Social Requirements	Low level of education
		Need to import expatriate skills and the availability of work permits
		Poor work ethic/attitude to work
		Social benefit requirements
		Lack of social mobility within local labour/staff
		High staff turnover (frequent loss of key employees)
		Underdeveloped/inadequate access to infrastructure (transport services, housing, electricity, water etc.)
		Low quality of infrastructure
		High cost of infrastructure
B	Social Stability and Security	Difficulty in doing business
		High crime rate
		Theft
		Threat of terrorism

5. Conclusion and Further Research

This paper examines the social risks in overseas markets with a view to establishing whether there are significant social risks that influence export of construction services into African markets. Thirteen (13) social risks were identified as research constructs which were obtained from the review of extant literature. The top rated social risks in African construction markets empirically identified from the perspectives of South African construction companies are threat of terrorism, difficulty in doing business, high crime rate and theft. The principal components classification of these social risk consists of human capacity, resource and social requirements; and social stability and security. The most significant of these social risks are associated with social stability and security, explained by factors such as threat of terrorism, high crime rate and theft. This suggests that the influence of social risks on export of construction services is significantly associated with how stable the local markets are and how secure the companies with all its resources are within those markets, followed by the availability and provision of basic infrastructures such as good roads, water, electricity, communication and health facilities within local markets. It also emerged that, human capacity, resource and social requirements will also have a moderate impact on construction services export within African construction markets. Based on these findings, the paper concludes that there are significant social risks that influence export of construction services within African markets and that these risks can be classified into two dimensions of - human capacity, resource and social requirements; and social stability and security. The paper recommends that there is a need for International and South African construction companies; keen on expanding their geographical footprints across the border into Africa, to put in place strategies that will adequately address the social risks identified in this paper. These strategies can be in form of insurance and contingencies added to the final tender figures. Future researches that examine the influence of construction company's capabilities on social risks perception; and influence of social risks perception on entry decision into African/overseas construction markets are proposed.

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