Cross-border Expansion and Competitive Interactions of Mobile Network Operators in Sub-Saharan Africa

Marcellinus Chum Dike
Cross-border Expansion and Competitive Interactions of Mobile Network Operators in Sub-Saharan Africa

Marcellinus Chum Dike
Supervising professor
Professor Elizabeth E. Rose, University of Leeds, UK

Thesis advisors
Professor Elizabeth E. Rose, University of Leeds, UK
Professor Rebecca Piekkari, Aalto University, Finland

Preliminary examiners
Professor Ulf Andersson, Mälardalen University, Sweden
Professor John Luiz, University of Sussex, UK

Opponent
Professor Ulf Andersson, Mälardalen University, Sweden
Abstract

The search for improved organizational performance and better competitive positions in their respective industries has often motivated firms to expand operations beyond their traditional domestic markets. Thus, despite the numerous obvious challenges and risks, which heighten investment costs and reduce the chances of success in doing business in foreign markets, more and more firms have become multinational in their operations. Mobile network operators (MNOs) are clearly among such firms that have increasingly sought cross-border consolidations and compete on multiple fronts in the global market in recent times, even delving into the more environmentally- and institutionally-challenging emerging-market regions, as they seek the much-desired expanded customer bases and market reach, as well as other growth opportunities that cannot accrue from operating just in their home markets.

Anchored in the internationalization and multimarket competition/competitive dynamics literatures and building upon empirical data derived from a combination of primary and (mainly) secondary sources, this study investigates how mobile network operators (MNOs) invest and competitively interact across country markets in the Sub-Saharan Africa (SSA) region. The main theoretical argument underpinning the study is that the strategic importance of mobile telecom to national security and economic advancement, which makes it a strictly-regulated hi-tech oligopolistic industry, and the numerous challenges of SSA, as an emerging-market region, which impede the prospects of successful business, can compel MNOs to adopt contingent context-specific investment strategies.

The findings of the three empirical investigations provide supporting evidence to the foregoing premise, as they make some important revelations that challenge the conjectures and findings of the extant studies that were mainly conducted in developed-market regions. For instance, by showing that MNOs rather prefer to invest in the SSA countries that share colonial ties with their countries of origin and having low-level corruption, the first empirical study makes a clear departure from the extant mainstream position that economic-related factors, such as market size and strong economic growth potentials and better standard of living of the populace, mainly determined the investment location choices of firms. The second empirical study provides evidence of both oligopolistic-reaction (or bandwagon-effect) and mutual avoidance among pairs of competing MNOs, against previous studies’ suggestion finding of firms engaging in either rather than the two strategies. With these findings, the study offers offers theoretical extensions, while also having implications for managerial practice.

Keywords Cross-border Expansion, Mobile Network Operators, Multimarket Competition, Oligopolistic Reaction, Competitive Interactions, Sub-Saharan Africa

ISSN-L 1799-4934 ISSN (printed) 1799-4934 ISSN (pdf) 1799-4942
Location of publisher Helsinki Location of printing Helsinki Year 2018
Acknowledgements

Unarguably, the development of a doctoral (PhD) dissertation, such as this one, is a challenging process and, thus, is not expected to be the handiwork of a single individual, but rather the devoted collaborative effort of several entities. As there should always be a reward for good work, I must not fail to acknowledge the group of wonderful individuals and organizations who in one way or the other contributed towards the successful completion of my PhD research, the outcome of which is this dissertation.

Top on this list of great individuals who made my dream of becoming an academic doctor come true is Professor Elizabeth L. Rose, my highly-talented supervisor. Beth, as we fondly call her, proved to be a great resource and a wonderful person to work with, all through the past few years that I have come to know her. I recall, my first interaction with her via email in 2012, as I sought a mentor for my planned doctoral study at Aalto University School of Business (AaltoBiz). Beth simply asked me to send my proposal to her, which I did, and she scheduled a discussion with me via Skype. I first wondered why Skype, as I expected her to be Finland, but discovered on the appointed day that she was 10 hours ahead of me in New Zealand – managing this wide time difference between us offered me a great learning opportunity.

All through the period of the doctoral program, Beth proved to be both a great supervisor and a true academic teacher. Her advice and directives always proved to be very helpful and indispensable, following which I often proudly refer to Beth as my academic mother. Despite spending only an academic year with Beth at Aalto University before her relocation to Otago Business School in Dunedin, New Zealand, and our interaction was mainly virtual, I still did not lack anything in terms of supervision from her. While it was not easy to have physical face-to-face meetings with Beth, following her relocation, we managed with our regular Saturday chat via Skype, meeting only during her regular visits in May-June and November-December each year and at conferences. (Note that after relocating to New Zealand, Beth still served as a Visiting Professor at
AaltoBiz.) Through such virtual and physical interactions, Beth gave her best in ensuring that I what I should at each point in time along the research trajectory.

Beth has also been a wonderful collaborator, given the two journal papers we have so far co-authored and the few others that are being readied for submission. I must point out that Beth’s wealth of knowledge and experience is highly remarkable in this regard. Beth has also been a very useful tool in building an academic network for myself. What a pride when responding to the typical question of “Who is your supervisor?” at any conference or seminar meeting and I responded “Beth”, with the inquirer often saying, wow Beth! Beyond academia, Beth has also proven to be a great friend, being fond of my wife and children as well. I must say that working with Beth has truly been a great experience and I would always wish to continue working with her!

Another person that very much influenced my doctoral study here at Aalto University School of Business is Professor Eleanor Wesley. I must point that Eleanor was very influential in the decision process for my choice of a dissertation topic. I recall when, on one of her visits as a Visiting Professor at AaltoBiz, Eleanor told me that using Sub-Saharan Africa as a locational context for research in any topical area in International Business (IB) and Strategy would be groundbreaking, given that the region was so far relatively underexplored in academic terms. Following this lead, I sought to investigate the cross-border expansion and competitive interactions of MNOs in SSA, which formed the basis of my PhD dissertation that I defend this fateful day (25 May 2018).

The study opened a lot of windows of opportunity for me, as scholars from different parts of the world showed interest in hearing about my topic and the constituent papers in the dissertation. Thus, just as Eleanor presumed, despite that the combined phenomena of cross-border expansion and competitive interactions of firms have already received wide attention among academic scholars, the inclusion of Sub-Saharan Africa and the mobile telecoms industry in the ongoing discourse, via my doctoral research, truly proved to be valuable. I strongly believe that the wide acceptance of my papers for presentation at conferences and seminars, as well as my two journal publications so far, are a testimony of the attractiveness of the contexts I am exploring in my research and I owe it all to Eleanor.

Professor Rebecca Piekkari, who incidentally is the current head of the International Business Unit of Aalto University School of Business, is another wonderful person worthy of my appreciation. Rebecca served as my second doctoral supervisor, albeit more on the administrative end. Despite that we did not have much together in terms of direct supervision, she proved to be readily available for advice when called upon. I must not
forget how often Rebecca sent me links to published journal articles in our field bordering on Sub-Saharan Africa, which I value very much, as reading those really helped me in shaping my own research. I am very grateful, Rebecca!

I am also very grateful to my two pre-examiners, Professor Ulf Andersson of Mälardalen University School of Business, Sweden, and Professor John Luiz of the University of Essex School of Business, Management, and Economics, in the UK. The thoughtful and very constructive feedback from these two great scholars on my dissertation draft have further opened my eyes on how to do research, which I consider invaluable for my future academic pursuit. It is worth mentioning that having Ulf as the opponent for my doctoral defense today is something I very much cherish and I thank him so very much for being a part of my academic history.

Professor Asta Sami Salmi and Professor Kristiina Mäkelä are two other individuals who greatly influenced my doctoral studies. Professor Salmi, as the then head of the IB unit, was the one who authorized funding for my first conference trip outside Finland. I simply approached Asta and told her that I would like to attend the Academy of International Business United Kingdom and Ireland (AIB-UKI) Conference at the Henley Business School of the University of Reading, UK, but had no grant for that and she approved some funds for me. Though you may not remember this anymore, I must tell you, Asta, that that singular act of yours meant a lot to me. Professor Mäkelä, the current Provost of Aalto University, on her part, always offered a listening ear to me all along my doctoral studies. Apart from her very useful advice that helped me in my research, participating in paper development workshops (PDWs) chaired by Kristiina provided me with great learning opportunities.

Working at the IB Unit of AaltoBiz over these few years has been memorably fun, with such wonderful people as Professor Carl Fey, Professor Zuhair Al-Obaidi, Assistant Professor Tiina Ritvala, as well as Dr. Perttu Kähäri, Dr. Virpi Outila, Dr. Miikka Lehtonen, Dr. Wei Lu, Dr. Anne Quarshire, Dr. Sami Itani, Dr. Daniel Graff, Dr. Anna Salonen, Dr. Alexei Koveshnikov, Dr. Herta Vuorenmaa, Dr. Daria Kautto, Dr. Irina Mihailova, Dr. Laura Erkkilä, and Dr. Fernando Pinto Santos. Worthy of my recognition, also, are Lucas Humphries, Piyali Rudra, Anton Beletskiy, Andreas Benker, Sanna Heiniö, Lotta Aho, Jukka Rintamäki, Seppo Puro, Tuuli Hakkarainen, Tytti Nahi, Iiris Saittakari, Xiaoshi Xu, Riku Reunamäki, Ngoc Nguyen, and others.

Mervin Miomoukanda of International Data Corporation (IDC) and Lehlohonolo Mokenela of Frost and Sullivan (Johannesburg, South Africa) are also worthy of my appreciation. The devotion of these two gentlemen made it possible for me to circumvent the difficulty of getting MNO managers in SSA to interview. As many may have
already known, getting empirical data out of Africa is a very challenging process, often posing a major constraint to academic research. The kind assistance of Mervin and Lehlo in offsetting this difficulty for me is immeasurable and highly commendable.

At this juncture, I must acknowledge the Helsinki School of Economics (HSE) Foundation (Tukisäätiö), the Foundation for Economic Education (Liikesivistysrahasto), and the Dr. H. C. Wallenberg Foundation (Marcus Wallenbergin Liiketaloudellinen Tutkimussäätiö) for their benevolence in providing me with the funds to make this research a reality. I must say that the successful completion of this research is partly attributable to the generosity of these great foundations.

Given the huge impact of my three-month research visit at Stanford University in the U. S. under the umbrella of the Scandinavian Consortium for Organization Research (SCANCOR) to my doctoral dissertation, I feel very obliged to express my warm gratitude to both the organization and all its workers. I also give a big ‘thank you’ to all the fellow Scancorians I met at Stanford, as well as the directors: Professor Sarah Soule and Professor Mitchel Stevens. While thanking Sarah specifically for her advice, which really helped me in finetuning my work, I also acknowledge the selfless assistance of Maude Engström in making life a bit easier for me during my stay there.

This list would never be complete without a mention of the Paunonens: Silva and Hannu. From merely meeting my wife, Juliet, at the Baptist Church in Tampere, Silva has become so close to my family that we count her and hers as ours too. We are very grateful to you, Silva and Hannu, for all you have done for us, which I cannot mention here. Worthy of mention also are the lovely Baptist Community in Tampere and our dear friends and well-wishers living in the city. Additionally, I appreciate Pastor Linus Anyamele and his lovely family for their kind support. May God reward you all immensely for your love and kindness!

Finally, I express my very special gratitude to my dear lovely and very caring wife, Mrs. Juliet E. Dike and our amazing children: Max (Jr.), Favor, and Sharon for their unwavering support for me during these challenging years of my doctoral research. You are such a wonderful set of people and I say a big ‘thank you’ to each one of you. I love you with all my heart and all that I am. My gratitude further goes to my lovely parents, Chief Dom Kakam Dike and Loolo Margaret M. Dike; I thank you so very much papa and mama for all you have done to see me this far. I also express warm gratitude to my siblings Longi N. Dike (late), Kyrian E. Dike and Sam N. Dike and their families for their immeasurable care and support. Despite that space and time limitations would not allow me to list all the members of my family of friends and well-wishers here, I must not fail to thank every one of them for their unflinching support in making my academic
journey and this PhD project a huge success. In conclusion, I express my most sincere gratitude to each of you here today for coming to grace this grand occasion of mine!

Thank you and God bless you all!
## Contents

Acknowledgements ................................................................................................. 1  
List of Abbreviations and Symbols ....................................................................... 9  
Author’s Contribution ............................................................................................. 10  
List of Figures .......................................................................................................... 11  
List of Tables ........................................................................................................... 12  

1. **Introduction** ....................................................................................................... 14  
   1.1 Research Background .................................................................................. 14  
   1.1.1 Mobile Telecoms as the Business Context ...................................... 17  
   1.1.2 Sub-Saharan Africa as the Locational Context ............................... 21  
   1.1.3 Mobile Telecoms in Sub-Saharan Africa ........................................... 23  
   1.2 Research Gap, Objective, and Question .............................................. 33  
   1.3 Structure of the Dissertation .................................................................... 38  

2. **Theoretical Background** .................................................................................. 41  
   2.1 The Internationalization Perspective ....................................................... 41  
   2.2 The Multimarket Competition/Competitive Dynamics Perspective 45  
   2.3 Conceptual Development of the Study ............................................... 47  

3. **Methodology** ..................................................................................................... 51  
   3.1 Research Design ......................................................................................... 51  
   3.2 Philosophical Orientation and Research Methods ............................. 52  
   3.3 Data Collection and Analysis .................................................................. 55  
   3.4 Research Quality ....................................................................................... 56  

4. **Summaries of the Papers** ................................................................................. 59  
   4.1 Summary of Paper I ................................................................................. 59  
   4.2 Summary of Paper II .............................................................................. 60  


List of Abbreviations and Symbols

FDI  Foreign Direct Investment
FMAs  First-mover Advantages
GSMA  Global System for Mobile Association
IFC  International Finance Corporation
IMF  International Monetary Union
ITU  International Telecommunication Union
JV  Joint Venture
LOF  Liability of Foreignness
MNOs  Mobile Network Operators
MFSs  Mobile Financial Services
MTN  Mobile Telephone Network
MNEs  Multinational Enterprises
M&A  Merger and Acquisition
OECD  Organization for Economic Cooperation and Development
ROI  Return on Investment
PT  Portugal Telecom
SSA  Sub-Saharan Africa
TCE  Transaction Cost Economics
UNCTAD  United Nations Conference on Trade and Development
WOS  Wholly-owned Subsidiary
Author’s Contribution

Paper I

Dike, M. C. & Rose, E. L., Internationalization of Mobile Telecommunications: A Systematic Literature Review (Final Manuscript Submitted for Publication in Review of International Business and Strategy)

Paper II


Paper III

Dike, M. C. & Rose, E. L., Competitive Interactions of Mobile Network Operators in Sub-Saharan Africa: A Multimarket Competition and Oligopolistic Reaction Perspective

Paper IV

Dike, M. C., Competitive Interactions of Mobile Network Operators in Sub-Saharan Africa: An Action-Response Theoretical Perspective
List of Figures

Figure 1. Conceptual Framework of the Study ......................................................... 48
Figure 2. The Design of the Study ....................................................................... 51
Figure 3. The Review Framework ......................................................................... 118
# List of Tables

<table>
<thead>
<tr>
<th>Table Number</th>
<th>Table Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Subregional and Linguistic Composition of Sub-Saharan Africa</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>MNOs in the SSA Country Markets</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>Profiles of the Multinational MNOs</td>
<td>26</td>
</tr>
<tr>
<td>4</td>
<td>MNO Operation Bases in SSA and Entry Dates</td>
<td>28</td>
</tr>
<tr>
<td>5</td>
<td>SSA Country Mobile Profiles</td>
<td>31</td>
</tr>
<tr>
<td>6</td>
<td>Structure of the Dissertation</td>
<td>39</td>
</tr>
<tr>
<td>7</td>
<td>Details of the Empirical Data</td>
<td>56</td>
</tr>
<tr>
<td>8</td>
<td>Summary of the Review</td>
<td>119</td>
</tr>
<tr>
<td>9</td>
<td>SSA Country Mobile Profiles</td>
<td>147</td>
</tr>
<tr>
<td>10</td>
<td>Profiles of the Multinational MNOs</td>
<td>148</td>
</tr>
<tr>
<td>11</td>
<td>Operation Bases and Chronology of MNO Entries</td>
<td>150</td>
</tr>
<tr>
<td>12</td>
<td>Descriptive Statistics</td>
<td>160</td>
</tr>
<tr>
<td>13</td>
<td>Logistic Regression Results</td>
<td>161</td>
</tr>
<tr>
<td>14</td>
<td>MNOs with Multiple Market Presence in SSA and Entry Dates</td>
<td>196</td>
</tr>
<tr>
<td>15</td>
<td>Hypergeometric Analysis for Multimarket Competition in 2014 (expected values italicized) – Full data</td>
<td>203</td>
</tr>
<tr>
<td>16</td>
<td>Hypergeometric Analysis for Multimarket Competition in 2014 (expected values italicized) – Anglophone Countries</td>
<td>204</td>
</tr>
<tr>
<td>17</td>
<td>Hypergeometric Analysis for Multimarket Competition in 2014 (expected values italicized) – Francophone Countries</td>
<td>205</td>
</tr>
<tr>
<td>18</td>
<td>Hypergeometric Analysis for Multimarket Competition in 2014 (expected values italicized) – Portuguese-speaking countries</td>
<td>206</td>
</tr>
<tr>
<td>19</td>
<td>Hypergeometric Analysis for Multimarket Competition in 2014 (expected values italicized) – Indigenous Firms</td>
<td>207</td>
</tr>
<tr>
<td>20</td>
<td>Hypergeometric Analysis for Multimarket Competition in 2014 (expected values italicized) – Non-SSA Firms</td>
<td>207</td>
</tr>
<tr>
<td>21</td>
<td>Hypergeometric analysis for multimarket competition in 2014 (expected values italicized) – Eastern region</td>
<td>208</td>
</tr>
<tr>
<td>22</td>
<td>Hypergeometric analysis for multimarket competition in 2014 (expected values italicized) – Western region</td>
<td>209</td>
</tr>
<tr>
<td>23</td>
<td>Hypergeometric analysis for multimarket competition in 2014 (expected values italicized) – Central region</td>
<td>210</td>
</tr>
<tr>
<td>24</td>
<td>Hypergeometric analysis for multimarket competition in 2014 (expected values italicized) – Southern region</td>
<td>211</td>
</tr>
<tr>
<td>25</td>
<td>Chronology of Competitive Actions and Responses in Kenya</td>
<td>237</td>
</tr>
<tr>
<td>26</td>
<td>Chronology of Competitive Actions and Responses in Nigeria</td>
<td>238</td>
</tr>
<tr>
<td>27</td>
<td>Chronology of Competitive Actions and Responses in South Africa</td>
<td>239</td>
</tr>
</tbody>
</table>
Table 28. The Competitive Situations in Kenya .............................................242
Table 29. The Competitive Situations in Nigeria .......................................245
Table 30. The Competitive Situations in South Africa ...............................248
1. Introduction

1.1 Research Background

With the perception that operating in foreign markets offers leverage for organizational performance, diversifying across markets has continued to be an important strategic option for firms (e.g., Ghoshal, 1987; Hitt, Hoskisson & Kim, 1997; Hymer, 1976; Nachum & Zaheer, 2005; Rugman, 1979; Tallman & Li, 1996). The desire for expanded market or customer bases, acquisition of more competitive resources and strategic assets, and enhanced operational efficiency are among the major forces driving firms into foreign markets (e.g., Dunning, 2000). Consolidating competitive advantages across borders (e.g., Bloodgood, Sapienza, & Almeida, 1996), enhancing sustainable organizational growth (e.g., Zahra, Ireland, & Hitt, 2000), as well as accumulating knowledge and experience (experiential knowledge) from international networks (e.g., Coviello & Munro, 1997; Johanson & Mattsson, 1987) and responding to rivals’ competitive moves (e.g., Porter, 2008) are some of the additional incentives spurring internationalization or cross-border expansion among firms.

Engaging in foreign market operations, however, comes with many challenges, which must be overcome for the success of the venture. Zaheer (1995), for example, posits that the firm seeking cross-border expansion must deal with the issue of liability of foreignness (LOF). Previous studies (e.g., Rieck, Cheah, Lau, & Lee, 2005; Zott, 2003) have also indicated that the multinational enterprise (MNE) encounters higher operational risks and stronger administrative control, as well as faces the challenges of adapting to new organizational routines and the additional investment and coordination costs. Most importantly, engaging in foreign-market operations exposes the firm to cross-border competition, with both local and foreign rivals met in each international market (e.g., Porter, 1986, 2000; Bloodgood et al., 1996). The focal internationalizing firm may even, in some instances, find itself engaging in what the literature has conceptualized as “multimarket competition” – the competitive situation whereby a firm encounters the same rivals simultaneously in multiple markets (e.g., Gimeno & Woo, 1999; Karnani & Wernerfelt, 1985; van Witteloostuijn, 1993).
Closely related to the multimarket competition logic is the competitive dynamics theoretical framework, which is underscored by the premise that a successful competitive action or move undertaken by a firm may provoke responses from market or industry rivals (e.g., Chen, 1996; Chen & Miller, 1994; Ferrier, Smith, & Grimm, 1999; Gnyawali & Madhavan, 2001; MacMillan, McCaffery, & Van Wijk, 1985; Smith, Grimm, & Chen, 1989; Smith, Ferrier, & Ndofor, 2001), who aim to restore the prevalent equilibrium of competition and forestall future actions (e.g., Chen & Hambrick, 1995; Chen & McMillan, 1992). Baum and Korn (1996) assert, thus, that domain overlap and multimarket contact are important drivers of competitive actions and responses among firms.

The cross-border investment behaviors of the mobile network operators (MNOs\(^1\)) in Sub-Saharan Africa (SSA\(^2\)) provide an example of the development of such a competitive environment as above. Starting with just two operators at the inception of the region’s mobile telecommunications (telecoms) industry in the late 1980s, there were 16 MNOs with significant multinational operations across this part of Africa as of 2014. Like their counterparts in other industries and sectors, the mobile telecoms firms have, over the years, expanded their international presence across the country markets of SSA. The MNOs have been incentives to expand their operations across SSA, despite the numerous challenges posed by the characteristic nature of both the mobile telecoms industry and the market region, which greatly influence their cross-border expansion.

Obviously, the combined issues of cross-border expansion and competition have been important issues for academic debate, as scholars employ a variety of theoretical perspectives to investigate the foreign market investment patterns and competitive behaviors of MNEs, adopting different empirical contexts (both industrial and locational). Research in this bias, in the case of mobile telecoms has, however, been very focused on the dimension of internationalization, as implied from the numerous studies highlighting the foreign direct investment (FDI) location and entry strategy choices of MNOs (e.g., Clegg & Kamal, 1998; Clifton, Comín, & Diaz-Fuentes, 2011; Curwen & Whalley, 2006; Gerpott & Jakopin, 2005; Jakopin & Klein, 2012; Luiz & Stephan, 2012; Pogrebnyakov, 2007, 2008; Pogrebnyakov & Maitland, 2011; Sarkar, Cavusgil, & Aulakh, 1999; Whalley & Curwen, 2005, 2006) and the very few (e.g., Fernandez & Marin, 1998; Fernandez & Usero, 2009) investigating their competitive interactions.

---

\(^1\) An MNO is a telecoms firm that owns and controls both radio spectrum licenses and the network infrastructure capable of delivering wireless voice and data communications to subscribed users.

\(^2\) SSA comprises 49 African countries, including the 43 mainland countries lying below the Sahara Desert and six island countries in both the Atlantic and Indian Oceans.
Given the strategic importance of the (mobile) telecoms to both national economic growth and security (e.g., OECD, 1991; Teece, 1991), it suffices to have a more comprehensive understanding of the cross-border investment behaviors of mobile telecoms firms. Particularly, as the mobile telecoms industrial subsector has so far not gained adequate academic attention, there is value in also exploring how MNOs engage in cross-border competitive rivalries. In doing this, it is important to take cognizance of the likelihood of, at least, some of the telecoms firms to exhibit the “oligopolistic reaction” or “follow-the-leader” investment pattern described by Knickerbocker (1973), exercise mutual forbearance and collude to dampen the intensity of their rivalries (e.g., Edwards, 1955; Feinberg, 1984; Gimeno, 1994; Phillips & Mason, 1992), or rather undertake their foreign market investments independently of rivals’ moves.

It is important to note, as Guillén and Garcia-Canal (2009) point out, that much of the extant understanding of the investment activities of MNEs, including their cross-border expansion and competition, was derived mainly from studies conducted in developed markets. With the wide environmental and institutional differences between developed markets and the relatively less advanced emerging markets (e.g., Ghemawat, 2007; Hoskisson, Eden, Lau, & Wright, 2000; Khanna & Palepu, 1997), the findings of such studies cannot be truly representative of the investment behaviors of firms in emerging-market regions. It may, thus, be erroneous and misleading to make conjectures about the investment and competitive behaviors of MNOs in such an emerging-market region as SSA, for instance, based on the observed behaviors of those in developed markets.

Thus, as the traditional internationalization frameworks (e.g., Johanson & Vahlne, 1977, 2009; Johanson & Weidersheim-Paul, 1975; Luostarinen, 1979; Welch & Luostarinen, 1988) does not capture the dimension of competition among MNEs, this study incorporates the internationalization and multimarket competition/competitive dynamics theoretical logics to explore the cross-border expansion and competitive interactions of the multinational MNOs in SSA. Essentially, the services offered by MNOs are technology-oriented (Johansson, 1994), and the mobile telecoms industry is highly-regulated with high entry barriers (Clifton et al., 2011; Nicolaides, 1994; Sarkar et al., 1999), which explains the fewness of MNOs in most countries (e.g., Gruber, 2001; Gruber & Verboven, 2001). With these context-specific characteristics of mobile telecoms and its industry, MNOs are expected to behave differently in their cross-border expansion and competition, relative to other service-sector firms.

The extant literature has several conjectures about the cross-border investments of MNOs, with research (e.g., Chanakira, 2012; Gruber & Verboven, 2001; Wymbs, 2002), for instance, claiming that market size, government policy and the regulatory
environment, industry dynamics, level of technological/infrastructural development, and firm strategy constitute the key considerations of MNOs when investing internationally. With the argument that embracing new international contexts broadens research (e.g., Chittoor & Aulakh, 2015; Luo & Tung, 2007; Meyer, 2007) and the assertion that adopting different contexts challenges the conventional wisdom (Wright, Filatotchev, Hoskisson and Peng (2005), it is believed that additional insights for extending the literature will be gained by empirically investigating how MNOs undertake FDI and compete in SSA. The fact that such issues have not been adequately explored, in the academic sense, provides additional value to the study.

The study is embedded in two empirical contexts: the mobile telecoms industry as the business and SSA as the locational. As suggested by the component papers in the dissertation, the business context is used, essentially, as a basis for exploring two key phenomena associated with international strategy – cross-border expansion (FDI location choices) and competitive interactions (multimarket competition and competitive action-response strategies) – using the example of the 16 MNOs with active multinational operations across the country markets in the SSA region. The choice of the two contexts derives mainly from the huge potential each has for shedding light, beyond what is presently captured in the academic literature, on the duo-phenomena being investigated. In addition to offering contextual academic (theoretical) contributions, this study also has important implications for managerial practice.

1.1.1 Mobile Telecoms as the Business Context

Stuber (2002) indicates that the era of mobile telephony commenced with the introduction of the first cellular or cordless telephone system in the early 1980s. Since then, several generations of mobile telecom technologies have emerged. The first-generation (1G), which was launched in 1981, was based on analogue FM (frequency-modulated) technology and designed to offer narrow-band circuit-switched voice services. This was succeeded by the second-generation (2G) system that came into operation in 1992 with the launch, in Finland, of the first-ever wireless digital technology and offered improved spectral efficiency and voice quality over the 1G technology. The quest for better quality of service and improved customer satisfaction led to the launch of 3G technology in 2001, followed by that of 4G/LTE (long-term evolution) networks by TeliaSonera in Stockholm and Oslo in 2009 (TeleGeography, 2009). Plans are already underway for the rollout of 5G technologies before 2020 (TechRadar, 2016).

The earlier cellular technologies were rather more of a luxury than a substitute for fixed-line telephony, being relatively more expensive. For instance, 1G mobile phones did not
attain high levels of penetration globally owing, in part, to their associated high costs. Besides, they were cumbersome to operate, not portable, and offered poor quality of services. The usefulness of the first-generation cellphones was further hampered by the characteristic low geographic coverage of the 1G network (e.g., Rodini, Ward, & Woroch, 2003). The enhanced service quality of the much cheaper later generations, as well as the increased efficiency of networks and spectrum usage, however, heightened the adoption of mobile phones in many countries (ITU, 2003), spurring more FDIs among MNOs and increasing global penetration of mobile telecommunication.

Thus, growing from just seven million subscribers in 1989 to 11 million in 1990 (Tele-Geography, 2015), global mobile (SIM\(^3\)) subscriptions exceeded 300 million in 1998 (ITU, 1999). This amazing growth in global mobile penetration continued, with GSMA Intelligence (2017) reporting that the number of subscribers, 738 million in 2000 (ITU (2015), rose astronomically further to 7.9 billion at the end of 2016 and is projected to reach 9.7 billion by 2020 at a 4% compound annual growth rate (CAGR) 2016-20. A total 4.8 billion of the 2016 figure were unique\(^4\) subscribers; the number is projected to exceed 5.7 billion by 2020 at a 4.2% CAGR 2016-20. Global SIM penetration rate attained 100% in 2016, projected to 112% by 2020, while unique penetration stood at 65% and is expected to reach 73% by 2020 (GSMA Intelligence, 2017).

The rising preference of mobile communication over fixed-line telephony, which lead to the high growth in mobile connections, is attributed to several factors. The advantages of mobile over fixed-line communications are obvious: whereas mobile phones can make or receive calls anywhere, provided there is network service, even the most efficient fixed-line phone must be placed close to its base unit for calls to be made or received. Mobile devices are also very multifunctional; most connect to the Internet, send emails and text messages, support apps and games, serve as global positioning system (GPS) for navigation, take pictures and videos, and even help in keeping track of customers’ daily lives with calendars and to-do lists. On the contrary, fixed-line phones are basically used only for placing or receiving calls.

Apart from the fact that mobile networks are faster to build than fixed-line networks (ITU, 2003; Wallsten, 2001), cellphones are also much more cost-effective. Curwen and Whalley (2006) contend that the cost of rolling out a new mobile network is much lower than that of a wired network. The pay-as-you-go billing offers from MNOs, which allow plenty of messages, chats, and talk minutes at affordable prices, are impossible with

\(^3\) Note that SIM (mobile) subscriptions refer to the number of SIM cards in use.

\(^4\) Unique subscriptions denote the number of individually-registered mobile phone users. MNOs adopt unique subscription figures in strategic planning due to their better reliability than SIM figures.
fixed-line phones. Furthermore, the capability of mobile devices to serve as personal computers (PCs) is important, especially in SSA where the accessibility and reliability of fixed-line services have long been problematic (Esselaar & Stork, 2005).

An important dimension of the spate of mobile penetration relates to the regulatory reforms embarked upon by the governments of many countries in the late 1980s through the early 1990s, mainly in developing-market and emerging-market regions. Wallsten (2001) claims that changes in technology and poor performance of incumbent operators, combined with pressure from the World Bank and other international organizations, compelled the building of regulatory institutions and the opening of many country markets for competition in mobile. The liberalization and deregulation exercises and the privatization of incumbent operators, which were part of the telecoms reforms, also paved way for more investments, as private firms (both local and foreign) also gained operation and spectrum licenses, thereby intensifying competition in the industry.

Wellenius and Stern (1994) note that the growing need for better, more varied, and cheaper communication and information services further spurred the internationalization of telecoms. As pointed out by Smith (1997), following the market reforms, mobile became a multiproduct subsector, with several alternative service delivery mechanisms that allowed competition in many markets. It is argued that market competition in telecoms creates incentives for cost reductions and innovation, as well as the elimination of high prices (e.g., Laffont & Tirole, 2000; World Bank, 2005). Given the quality improvements and persistent drop in tariffs accompanying the enablement of competition in many country markets, mobile phones gradually became an attractive alternative to fixed-line services (ITU, 2003; Rodini et al., 2003). With the average annual subscription growth rate of 49% in 1995-1999, relative to the 4% of fixed-line networks (OECD, 2001), mobile eventually overtook fixed-line penetration in 2002 (ITU, 2003) as the preferred mode of telecommunication.

Research (e.g., Clegg & Kamall, 1998; Gerpott & Jakopin, 2005; Whalley & Curwen, 2005) shows that the cross-border expansion of mobile gained root in the literature in the 1990s following the market reforms that took place in many country markets. The underlying assumption that a strong subscriber base in just the focal firm’s domestic market alone may not be sustainable enough for growth (e.g., Stienstra, Baaij, Van den Bosch, & Volberda, 2004), as well as the quest for enhanced organizational performance (e.g., Asimakopoulos, Hernández, & Whalley, 2015; Geppert & Jakopin, 2005; Rieck et al., 2005) are considered among the major triggers of internationalization in the mobile telecoms subsector, with MNOs seeing cross-border consolidations as a strategy for boosting subscriber bases and gaining greater global competitive advantages.
Business-friendly regulatory regimes and market environments (e.g., Kim, Lee, & Kim, 2009; Clifton et al., 2011); diminishing domestic market returns, rising subscriber acquisition costs, and shrinking average revenue per user (ARPU) (e.g., Graack, 1996); and previous international experience (e.g., Pogrebnyakov, 2007; Eggers, Grajek, & Kretschmer, 2012; Luiz & Stephan, 2012) also motivated MNOs to internationalize. MNOs are further driven across borders by their desire to establish international presence (e.g., Clegg & Kamall, 1998; Kim et al., 2009), leverage the ownership advantages developed through domestic operations (e.g., Gerpott & Jakopin, 2005), exploit first-mover advantages (FMAs) (e.g., Sarkar et al., 1999; Bijwaard, Janssen, & Maasland, 2008; Jakopin & Klein, 2012), and earn faster return on investment (ROI) (e.g., Ahmad, 2014). Earning economies of scale and scope (Stienstra et al., 2004), acquiring foreign market knowledge (e.g., Clegg & Kamall, 1998), and contending with rivals (Fernandez & Usero, 2009) further spur internationalization among MNOs.

With the spate of cross-border expansion and intensification of business in the industry, there has also been a rapid growth in the contributions of mobile telecoms to the global economy, beyond the traditional communication services mobile phones are known to offer. GSMA (2017a) reports that the global mobile ecosystem, which comprises about 800 MNOs and 300 associated companies, contributed more than 4.4% (equivalent to over US $3.3 trillion of economic value) of the world’s gross domestic product (GDP) in 2016 and is projected to 4.9% or an equivalent of US $4.2 trillion by 2020. The mobile ecosystem also generated a total of 28.5 million direct and indirect jobs in 2016, while additionally contributing over US $450 billion in public funding that year.

These figures, however, do not capture the social values derived from mobile communications and applications, including digital and financial inclusion. As further reported by GSMA (2017a), there were 277 live mobile money (m-Money) services in 92 countries by the end of 2016. Through such m-Money services, the challenges emanating from inadequacy of banks and financial institutions, such as in Sub-Saharan Africa where the population of the unbanked is astonishingly high, have been mitigated as people can now use their mobile devices to circumvent banking services. Beyond mobile banking, there are several other applications of mobile; including mobile health (m-Health), mobile education (m-Education), mobile agriculture (m-Agriculture) and a host of other mobile-device-enabled value-added services whose economic contributions cannot be quantified in monetary terms. The future of the industry is also very impressive, given the growing global adoption of smartphones and rising demand for mobile services, due, in large part, to the multifunctional use of mobile devices, especially in the developing markets and regions, where the prevalent harsh economic conditions make it difficult for individuals to have PCs.
1.1.2 Sub-Saharan Africa as the Locational Context

Sub-Saharan Africa is a 49-country region partitioned into four subregions: East Africa, Central Africa, Southern Africa, and West Africa. The countries are very diverse in terms of their cultural background, considering spoken language, with English, French, Portuguese, and Spanish, respectively, as the most adopted official languages. English, spoken in a total of 23 countries and French, adopted in 19 countries, are the two most dominant official languages among the countries. The linguistic heterogeneity of SSA is more easily appreciated at the subregional level; English is mostly spoken in East Africa and Southern Africa, while French is predominant in Central Africa and West Africa. Portuguese is spoken in five countries, two in each of West Africa and Southern Africa and one in Central Africa; whereas Spanish is adopted in one country, Equatorial Guinea. (Note that Rwanda changed its official language from French to English in 2009 and that, albeit not colonized by Italy, Italia is widely spoken in Somalia.) The subregional and linguistic (official) composition of SSA is highlighted in Table 1.

Table 1. Subregional and Linguistic Composition of Sub-Saharan Africa

<table>
<thead>
<tr>
<th>Subregion</th>
<th>Constituent Country Markets and Primary Languages</th>
<th># Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Africa</td>
<td>Comoros (F), Djibouti (F), Eritrea (E), Ethiopia (A), Kenya (E), Seychelles (E), Somalia (E/I), South Sudan (E), Sudan (E), Tanzania (E), and Uganda (E).</td>
<td>11</td>
</tr>
<tr>
<td>West Africa</td>
<td>Benin (F), Burkina Faso (F), Cape Verde We, Cote d’Ivoire (Ivory Coast) (F), Gambia (E), Ghana (E), Guinea (F), Guinea Bissau (P), Liberia (E), Mali (F), Mauritania (F), Niger (F), Nigeria (E), Senegal (F), Sierra Leone (E), and Togo (F).</td>
<td>16</td>
</tr>
<tr>
<td>Central Africa</td>
<td>Burundi (F), Cameroon (F), Central African Republic (CAR) (F), Chad (F), Congo Republic (Congo Brazzaville) (F), Democratic Republic of Congo (DRC) (F), Equatorial Guinea (S), Gabon (F), Rwanda* (E), and Sao Tome &amp; Principe (P)</td>
<td>10</td>
</tr>
<tr>
<td>Southern Africa</td>
<td>Angola (P), Botswana (E), Lesotho (E), Madagascar (F), Malawi (E), Mauritius (E), Mozambique (P), Namibia (E), South Africa (E), Swaziland (E), Zambia (E), and Zimbabwe (E)</td>
<td>12</td>
</tr>
</tbody>
</table>

*English became the official language of Rwanda in 2009. Note: A=Amharic; E=English; F=French; I=Italian; P=Portuguese; S=Spanish

SSA countries are also very diverse regarding market size, economic strength, and level of infrastructural development. While the most populous, Nigeria, has over 184.6 million people, the least-populated, Seychelles, has a population of just 96.7 thousand (GSMA Intelligence, 2017). With their respective nominal GDPs of US $415.080 billion and US $351 million in 2016, Nigeria and Sao Tome are SSA’s largest and smallest economies (Statistics Times, 2017). Seychelles leads in terms of standard of living, with per capita GDP (nominal) of US $15,400 in 2016, while Somalia has the lowest with a
nominal GDP per capita of just US $145.06 (IMF, 2017; World Bank, 2017). South Africa is SSA’s most developed market, while South Sudan is the least-developed.

Despite these wide discrepancies among the constituent countries, SSA has continued to exhibit strong economic growth in the past few decades (e.g., World Bank, 2012; World Bank, 2014; IMF, 2014). The region’s GDP grew from 4.2% in 2013 to 4.5% in 2014 (World Bank, 2015a), making it the world’s second fastest-growth economic region, after the Asia-Pacific region (World Bank, 2014; IMF, 2015; EY, 2015). Bloomberg (2015a) reports that SSA is home to some of the fastest growing economies on the globe, despite also accounting for some of the most impoverished and least-developed. The region’s economic outlook, at least for the near future, is also impressive, given the projected respective GDPs of 2.9% and 3.7% for 2017 and 2018, after the 20-year low of 1.5% in 2016 (IMF, 2017; World Bank, 2017).

Much of SSA’s economic growth in recent years is attributed to the sharp rise in FDI inflows into the various countries, following improvements in the business environment and the institution of business-friendly regulatory regimes. EY (2014) reports a 4.7% regional FDI inflow into SSA in 2013, relative to the 2.6% figure for Latin America and Caribbean region. (Note that the overall growth in FDI inflow for Africa stood at 3.1% in 2013.) With the projected 5.1% inflow for 2017 (e.g., EY, 2015; World Bank, 2015b), the prospects for greater future FDI inflows into SSA are also high, with UNCTAD (2015) indicating that South Africa, the Democratic Republic of Congo (DRC), Mozambique, and Nigeria were the region’s top FDI recipients in 2013-2014.

UNCTAD (2015) indicates that services constituted over 45% of the inflow of FDI into SSA in 2012, whereas the manufacturing and primary industries, accounted for 35% and 20% respectively. Following the rapid market reforms in many countries, SSA’s attractiveness for investment has improved (Deloitte, 2015), with some studies (e.g., Asiedu, 2002; Luiz & Stephan, 2012) claiming that SSA provides the highest return on investment (ROI) amongst the world’s economic regions. Rising demands for goods and services, following the rapid growth in the middle-class economy, as well as improvements in the standard of living of the populace, are among the major factors fueling SSA’s economic advancement (e.g., Luiz, 2012; IMF, 2016).

Research (e.g., Acquaah, Zoogah, & Kwegi, 2013; George, 2015; Amankwah-Amoah, 2016; George, Corbishley, Khayesi, Haas, & Tihanyi, 2016; Zoogah, 2008) shows that SSA has been underutilized as an empirical setting for exploring the investment behaviors of firms – my position being that it is quite long overdue to correct this anomaly. As conjecturable from the foregoing underpinning theoretical arguments, reasons abound for SSA to be adopted as a locational context for empirically investigating
the activities of firms. Essentially, the characteristic nature of SSA as an emerging-market region, as well as its relative hugeness and heterogeneity may compel telecoms firms, for instance, to behave in certain ways that may not have been observed elsewhere. Particularly, given the growing contributions of mobile telecoms to the global economy in recent times, as well as the distinctive nature of the industry, there is value in gaining a better understanding of the behaviors of telecoms firms in the emerging-market context, as they become increasingly attracted to emerging markets.

Unarguably, underscored by the premise that cross-border consolidations generate potential for enhanced organizational performance (e.g., Ghemawat, 2007; Rugman & Verbeke, 2004; Stienstra et al., 2004), MNOs have incentives to expand operation bases into SSA countries, following which, they may engage in competition with each other on multiple fronts. Ideally, the rapid intensification of cross-border investment moves among MNOs across the SSA market region in recent times calls for empirical investigation, which underlies this research. Thus, as the combined issues of cross-border expansion and competition are yet to be adequately explored in the case of mobile telecoms, especially considering emerging-market regions, embracing the industry and SSA as the empirical contexts for this study is considered revolutionary. The findings are expected to extend academic knowledge, thereby bringing SSA into the ongoing discourse on the cross-border expansion and competitive interactions of firms. Beyond theoretical knowledge, the study also has major implications for managerial practice.

1.1.3 Mobile Telecoms in Sub-Saharan Africa

The era of mobile telecommunication in SSA commenced in 1989, with the launch of operations by Portugal Telecom (PT) and Millicom in the West African country of Guinea Bissau and the Indian Ocean island-country of Mauritius, respectively, albeit the regional industry barely took off in the late 1990s. With the rapid adoption of mobile telephones and the rising demand for mobile services, as well as the establishment of an enabling investment climate through the institution of market regulatory reforms (privatization, liberalization, and deregulation) in many country markets, more MNOs sought to invest and expand their activities within the fast-emerging market region.

Thus, relative to 1993, when less than one-third of SSA countries had mobile communications, all the countries already had mobile telecoms services as of 2000 (AICD, 2009). UNCTAD (2007) indicates that each of the countries had at least one operator as of 2007, with some that were previously under monopoly, notably, Cape Verde and Namibia, having allowed competition in their markets. Cowhey and Klimenko (2001)
content that the telecoms regulatory reforms embarked upon by the government—separating the telecoms legislative process, regulatory functions, and service provision that were previously undertaken by a single body—freed up the traditionally state-owned monopoly-oriented industry in most countries. The grant of more operating and spectrum licenses brought more MNOs into operation, paving the way for competition.

Altogether, there were 173 mobile operators in the 49-country SSA as of 2014, implying an approximate average of 3.5 MNOs per country market in the region at that time. Of these 173 telecoms firms, 157 were non-internationalized firms that only operated in their domestic markets, whereas the remaining 16 had undertaken FDIs and were actively present and operational in multiple countries. A list of the mobile telecoms firms, including both the non-internationalized and the multinational operators, in each SSA country is provided in Table 2.

Driven mainly by the quest to consolidate their market and industry competitive positions (essentially through the exploitation of the locational advantages created by greater demands for mobile services, due mainly to growing middle-class and enhanced standard of living in many countries that orchestrated higher affordability of smartphones, improvements in the regional economy, institution of a more friendly investment climate, and advancements in infrastructural development), the 16 multinational MNOs, including some of the world’s largest, intensified their presence across SSA. As seen from Table 3, five of the firms are European multinationals; the other 11 are emerging-market multinationals, with five indigenous to SSA while six are non-indigenous operators originating from the Middle East and Asia.

The 16 multinational MNOs had made a total of 120 market entries across SSA as of 2014. The bulk of entry moves occurred in 2010, which is partly explainable through the massive and unprecedented simultaneous 15-market entry of Bharti Airtel, following the firm’s acquisition of Zain’s SSA-country operations in 2010 (Bose & Celly, 2011; Palepu & Bijlani, 2012). Notably, there were no recorded cross-border investment moves by any MNO in 1991. The operation bases and chronology of market entries of the 16 multinational MNOs are highlighted in Table 4.

The investment moves of the multinational MNOs into SSA can be summarized in five phases. The first phase occurred in 1989-1994, when the early movers (Millicom, PT, Sudatel, MTN, and Vodafone) commenced operations. Nine investment moves were made during this phase. The second phase (1995-1999) saw the emergence of Zain, Bharti Airtel, Econet, and Etisalat, with a total of 12 investment moves. Africell, Moov

---

5 Maroc Telecom acquired many West African subsidiaries of Etisalat in 2014, rebranding to Moov.
Orange (France Telecom Orange), and GLO Mobile joined the fray in the third phase, which occurred in 2000-2004, with a record total of 17 new market entries. Two MNOs, Azur (Bintel) and Smile came into operation during the fourth phase (2005-2009); 47 investment moves were made then. The final phase occurred in 2010-2014, with a total of 35 new market entries and the emergence of one more operator, Smart.

Table 2. MNOs in the SSA Country Markets

<table>
<thead>
<tr>
<th>Country</th>
<th>Mobile Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>Movicell, Unitel (Portugal Telecom)</td>
</tr>
<tr>
<td>Benin</td>
<td>Bell Benin Coms, Glo Mobile (Globacom), Libercom (Benin Telecoms), Moov (Maroc Telecoms), MTN</td>
</tr>
<tr>
<td>Botswana</td>
<td>Be Mobile (BTC), MTN (Mascom), Orange</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>Airtel, Telecel (Plano Afrique), Telmob (Onatel: Etisalat)</td>
</tr>
<tr>
<td>Burundi</td>
<td>Leo (Econet), Onamob (Onatel), Smart</td>
</tr>
<tr>
<td>Cameroun</td>
<td>CamTel, MTN, Nextel (Vitel), Orange</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>CVMove (Cabo Verde Telecom/Portugal Telecom), T+ (Teclium)</td>
</tr>
<tr>
<td>CAR</td>
<td>Azur (Bintel), Moov (Maroc Telecom), Orange, Telecel (Econet), Etisalat</td>
</tr>
<tr>
<td>Chad</td>
<td>Airtel, Sotel, Tigo (Millicom)</td>
</tr>
<tr>
<td>Comoros</td>
<td>Hun (Comoros Telecom)</td>
</tr>
<tr>
<td>Congo</td>
<td>Airtel, Azur (Bintel), MTN</td>
</tr>
<tr>
<td>Cote d’Ivoire</td>
<td>GreenN (Oricel), KoZ (Comium), Moov (Maroc Telecom), MTN, Orange, YooMee</td>
</tr>
<tr>
<td>Djibouti</td>
<td>Djibouti Telecom</td>
</tr>
<tr>
<td>DRC</td>
<td>Africell (Lintel), Airtel, Orange, SuperCell, Tatem Telecom, Tigo (Millicom), Vodacom</td>
</tr>
<tr>
<td>Eq. Guinea</td>
<td>MUNI (Green Com), Orange (GETESA)</td>
</tr>
<tr>
<td>Eritrea</td>
<td>Eritel</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>Ethio Telecom</td>
</tr>
<tr>
<td>Gabon</td>
<td>Airtel, Azur (Bintel), Libertis (Gabon Telecom), Moov (Maroc Telecom)</td>
</tr>
<tr>
<td>Gambia</td>
<td>Africell (Lintel), Airtel, Orange, SuperCell, Telecom, Tigo (Millicom), Vodacom</td>
</tr>
<tr>
<td>Ghana</td>
<td>Airtel, Blu, Expresso (Sudatel), Glo Mobile (Globacom), MTN, Sarifline, Tigo (Millicom), Vodafone</td>
</tr>
<tr>
<td>Guinea</td>
<td>Areba (MTN), Cellcom, Expresso/InterCell* (Sudatel), Orange (Sonatel)</td>
</tr>
<tr>
<td>G. Bissau</td>
<td>Guinetel (Guine Telecom/Portugal Telecom), MTN, Orange (Sonatel)</td>
</tr>
<tr>
<td>Kenya</td>
<td>Airtel, Orange (Telkom Kenya), Safaricom</td>
</tr>
<tr>
<td>Lesotho</td>
<td>Econet Wireless, Vodacom</td>
</tr>
<tr>
<td>Liberia</td>
<td>Celtel, Libitel, Lonestar (MTN), Novafone</td>
</tr>
<tr>
<td>Madagascar</td>
<td>Airtel, Orange, Telma</td>
</tr>
<tr>
<td>Malawi</td>
<td>Airtel, TNM</td>
</tr>
<tr>
<td>Mali</td>
<td>Malitel (Sotelma: Etisalat), Orange (Sonatel)</td>
</tr>
<tr>
<td>Mauritania</td>
<td>Expresso/Chinguitel (Sudatel), Mattel (Tunisse Telecom), Mauritel (Etisalat)</td>
</tr>
<tr>
<td>Mauritius</td>
<td>Chili (MTML), Emtel (Millicom), Orange (Mauritius Telecom)</td>
</tr>
<tr>
<td>Mozambique</td>
<td>Mcel (Mozambique Cell/Cell(TDM), Movitel (Vitel), Vodacom</td>
</tr>
<tr>
<td>Namibia</td>
<td>MTC (Portugal Telecoms), TN Mobile (Telecom Namibia: Leo), Telecom</td>
</tr>
<tr>
<td>Niger</td>
<td>Airtel, Moov (Maroc Telecom), Orange, SahelCom (Sonatel)</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Airtel, Emtel (EMTS), Glo Mobile, MTN, Multi-Links, Smile, Visafone, ZoomMobile, Spectranet, Swift</td>
</tr>
<tr>
<td>Rwanda</td>
<td>Airtel, MTN, Tigo (Millicom)</td>
</tr>
<tr>
<td>Sao T &amp; P</td>
<td>CST (Portugal Telecoms)</td>
</tr>
<tr>
<td>Senegal</td>
<td>Expresso (Sudatel), Orange (Sonatel), Tigo (Millicom)</td>
</tr>
<tr>
<td>Seychelles</td>
<td>Airtel, Cable &amp; Wireless</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>Africell (Lintel), Airtel, Sierratel</td>
</tr>
<tr>
<td>Somalia</td>
<td>Gollis Telecom, Hormud Telecom, NationLink Telecom, Sonafone, Sonatel (Somaliland), Telecom, Telecom (Somaliland)</td>
</tr>
<tr>
<td>South Africa</td>
<td>CellC (Oger Telecom), MTN, Telkom Mobile, Vodacom</td>
</tr>
<tr>
<td>South Sudan</td>
<td>Gentel (Green Network), Sudani (Sudatel), MTN, Vivacell, Zain</td>
</tr>
<tr>
<td>Sudan</td>
<td>MTN, Zain, Sudani (Sudatel), Etisalat (Cnr)</td>
</tr>
<tr>
<td>Swaziland</td>
<td>MTN</td>
</tr>
<tr>
<td>Tanzania</td>
<td>Airtel, Smart, Smile, Tigo (Millicom), TTCL, Vodacom, Zantel (Etisalat)</td>
</tr>
<tr>
<td>Togo</td>
<td>Moov (Maroc Telecom), Togocel (Togo Telecom)</td>
</tr>
<tr>
<td>Uganda</td>
<td>Africell (Lintel), Airtel, T+Tel, MTN, Smart, Smile, UT Mobile (Uganda Telecom), Vodafone (Afrimax)</td>
</tr>
<tr>
<td>Zambia</td>
<td>Airtel, MTN, Zamtel</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>Econet Wireless, NetOne, Teledel (Global Telecom/Vimpelcom)</td>
</tr>
</tbody>
</table>

Total number of MNOs = 173; Number of MNOs per market = 3.5

Author’s compilation based on data sourced from ITU, GSMA Intelligence, and MNO Websites

A total of 29 countries had already allowed full competition in their mobile markets as of 2014, with partial or restricted competition observed in 12 countries. Six countries
ran monopoly mobile markets, whereas the competitive situations in Somalia and South Sudan remained uncertain. Thus, for this study, issues relating to cross-border expansion and competitive interactions in the regional industry relate to the 41 countries that had allowed some form of competition (either full or partial) in their markets. Apart from the strong efforts to open their markets up for competition, many SSA countries have also continued to make heavy investments on mobile telecoms infrastructure. Except for the nine countries that operated on the GSM 1800 or 2G/GSM 18006 platforms, the rest already had either 3G or 4G/LTE networks as of 2014. Specifically, 22 countries had 3G network platforms while 18 had the 4G/LTE technologies—an clear indication of the technological advancement of the industry over the years.

Table 3. Profiles of the Multinational MNOs

<table>
<thead>
<tr>
<th>Name of MNO</th>
<th>Home Market</th>
<th>#Countries of Operation in SSA</th>
<th>#Worldwide Operation Bases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Vodafone</td>
<td>United Kingdom</td>
<td>7</td>
<td>28*</td>
</tr>
<tr>
<td>2 Orange</td>
<td>France</td>
<td>15</td>
<td>28</td>
</tr>
<tr>
<td>3 Millicom</td>
<td>Luxemburg</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>4 PT</td>
<td>Portugal</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>5 Smart</td>
<td>Switzerland</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>6 Airtel</td>
<td>India</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>7 Etisalat</td>
<td>United Arab Emirates</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>8 Africell</td>
<td>Lebanon</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>9 Azur</td>
<td>United Arab Emirates</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>10 Zain</td>
<td>Kuwait</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>11 Moov</td>
<td>Morocco</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>12 MTN</td>
<td>South Africa</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>13 Econet</td>
<td>South Africa*</td>
<td>7</td>
<td>22*</td>
</tr>
<tr>
<td>14 Sudatel</td>
<td>Sudan</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>15 GLO</td>
<td>Nigeria</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>16 Smile</td>
<td>Mauritius*</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

*Econet is owned by a Zimbabwean but registered in South Africa, while Smile is owned by a South African but registered in Mauritius. The origins of the two firms are often quoted as Zimbabwe or South Africa and South Africa or Mauritius depending on the source.

Lending support to the efforts of the governments is Helios Africa Towers, a company that focuses on the provision of towers to mobile operators. Apparently, the MNOs also engage in some collusive arrangements, such as tower sharing, to circumvent the high costs of acquiring infrastructure. For instance, MTN is known to outsource its tower networks to other mobile operators, including its own competitors, in several markets.

The implication of the availability of telecoms infrastructure in a country is obvious, considering especially the high-cost requirements for rolling out such vital equipment as towers and base stations from the scratch. This clearly explains the tendency of MNOs to prefer entry into countries with well-established telecoms infrastructure. Essentially, the availability of telecoms infrastructure resulted in the intensification of

---

6 GSM 1800 denotes GSM operating in the 1800 MHz band, whereas 2G, 3G, and 4G refer to the second, third, and fourth generation networks.
MNO expansion and competition in the regional industry, leading to the rapid rise in mobile connections and higher penetration rates in many SSA countries. Table 5 provides an overview of the mobile telecoms profiles of the 49 SSA country markets.

GSMA (2017b) indicates that there was a total of 731 million mobile connections and 420 million unique mobile subscribers in SSA at the end of 2016. Given the 6.6% CAGR 2016-2020 for mobile connections and 6.2% CAGR 2016-2020 for unique subscriptions, it is expected for the figures to rise to 942 million and 535 million, respectively, by 2020. The penetration rates, which were 74% for mobile connections and 43% for unique subscriptions, respectively, in 2016 are equally projected to 85% and 50% by 2020. These figures clearly indicate a substantial growth, in aggregate terms, over the respective about 20,000 and 18.3 million subscriptions in 1993 and 2003 (e.g., World Bank, 2005), which can be attributed to the market reforms that promoted the intensification of MNO activities in SSA (ITU, 2006).

The impact of mobile telecoms on the socio-economic advancement of SSA has been very impressive over the past few decades. GSMA Intelligence (2013) reports that, despite its youthfulness, the mobile telecoms made the highest contribution of more than 6% (US $60 billion) to SSA’s GDP in 2012, compared to any other economic region globally or industrial sector in the region. The importance of mobile telecoms to the economic growth of SSA continued unabated, given the GSMA’s (2017b) report that the industry also generated 7.7% (US $110 billion) of the regional GDP in 2016, projected to 8.4% (an equivalent of US $142 billion) in 2020. (It is important to note, comparatively, that mobile telecoms only generated a paltry 0.02% (US $100,000) of the SSA regional GDP in 1995 (IFC, 2016). Besides, the mobile telecoms ecosystem generated over 3.5 million jobs and more than US $13 billion worth of taxes to the SSA economy in 2016. Other monetary contributions of mobile telecoms to the economic advancement of SSA accrue mainly from license and regulatory fees paid by mobile operators, as well as from government-organized spectrum auction biddings in each country market.

These figures, however, did not account for the unquantified social values accruing from the multifunctional use of mobile-based applications in safety and security, healthcare delivery (e.g., m-Health), finance and money transfer (e.g., m-Finance and m-Money), education (m-Education), agriculture (m-Agriculture), and several other mobile apps that have positively impacted on the livelihood and wellbeing of Sub-Saharan Africans.
### Table 4. MNO Operation Bases in SSA and Entry Dates

<table>
<thead>
<tr>
<th>Country</th>
<th>Africell</th>
<th>Airtel</th>
<th>Azur</th>
<th>Econet</th>
<th>Etisalat</th>
<th>GLO</th>
<th>Millicom</th>
<th>Moov</th>
<th>MTN</th>
<th>Orange</th>
<th>Portugal Telecom</th>
<th>Smart</th>
<th>Smile</th>
<th>Sudatel</th>
<th>Vodafone</th>
<th>Zain</th>
<th>#MNOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Benin</td>
<td>2005</td>
<td>2008</td>
<td>2014</td>
<td>2006</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Botswana</td>
<td>2004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>2010</td>
<td></td>
<td>2005</td>
<td>2006</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Burundi</td>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Cameroun</td>
<td></td>
<td></td>
<td>2000</td>
<td>2002</td>
<td></td>
<td>2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Cape Verde</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1995</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Chad</td>
<td>2010</td>
<td></td>
<td>2005</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Comoros</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Congo</td>
<td>2010</td>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Djibouti</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2006</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Eritrea</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Ethiopia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Gabon</td>
<td>2010</td>
<td>2009</td>
<td>2005</td>
<td>2007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Gambia</td>
<td>2001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Guinea</td>
<td></td>
<td></td>
<td>2006</td>
<td>2006</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>2006</td>
<td>2006</td>
<td>1989</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Kenya</td>
<td>2010</td>
<td>2004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Lesotho</td>
<td>2008</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Country</td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td>Year 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madagascar</td>
<td>2010</td>
<td>2010</td>
<td>2010</td>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malawi</td>
<td>2010</td>
<td>2010</td>
<td>2010</td>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mauritania</td>
<td>2010</td>
<td>2009</td>
<td>2009</td>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Namibia</td>
<td>2013</td>
<td>2013</td>
<td>2013</td>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Niger</td>
<td>2010</td>
<td>2010</td>
<td>2010</td>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senegal</td>
<td>2012</td>
<td>2012</td>
<td>2012</td>
<td>2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>2009</td>
<td>2009</td>
<td>2009</td>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somalia</td>
<td>1999</td>
<td>1999</td>
<td>1999</td>
<td>1999</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td>2004</td>
<td>2004</td>
<td>2004</td>
<td>2004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Sudan</td>
<td>2011</td>
<td>2011</td>
<td>2011</td>
<td>2011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sudan</td>
<td>2005</td>
<td>2005</td>
<td>2005</td>
<td>2005</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tanzania</td>
<td>2014</td>
<td>2014</td>
<td>2014</td>
<td>2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Author's compilation based on data sourced from GSMA Intelligence, The Global Economy, ITU, and MNO websites.
Particularly, mobile financial services (MFSs), also called mobile money (m-Money), such as the m-Pesa, which emerged as a collaboration among MNOs, banks, and other financial service providers, have become an important platform for online financial payments and monetary remittances. As indicated by GSMA (2017b), the number of registered mobile money users in SSA, as of March 2017, topped 280 million, with the Economist (2015) claiming that approximately 25% of Kenya’s gross national product (GNP) in 2014 accrued from m-Pesa, which was launched in 2007 by Safaricom, the country’s largest mobile operator. (Note that the number of m-Pesa users in Kenya exceeded 17 million in 2015.)

GSMA Intelligence (2016) reports that 55% of the 271 live mobile money services globally are found in SSA. As reported by GSMA (2017b), SSA also accounted for more than 63% of the active global mobile money accounts in 2016, with 140 live mobile services in 39 SSA countries. Beyond serving as basis for monetary remittances, by providing services for loans and savings products, as well as for disbursing salaries and paying bills, m-Money has alleviated some of the difficulties associated with inadequate supply of banking services. Thus, for a region accounting for more than 17% of the unbanked global population (World Bank, 2015c), m-Money has increasingly served as an alternative to banks, as well as an important platform for financial inclusion. Based on the usefulness of m-Pesa in Kenya, m-money services are now widely adopted across the entire SSA region. The obvious success of m-Money in SSA has offered important lessons for payments and banking in other regions of the world, both developed and emerging, as Shadbolt (2015) reports the launch of an m-Pesa-like service in Romania.

Furthermore, mobile telecoms have continued to provide digital inclusion to the unconnected Sub-Saharan Africans: GSMA (2017a) reports that 26% of the region’s populace had internet connections in 2016, with around 270 million of the users gaining internet access through mobile devices. Mobile broadband connections are projected to increase from 33% in 2016 to 60% by 2020. With the reported projected 26 million machine-to-machine (M2M) connections by 2020 (GSMA, 2017b), relative to the seven million in 2015 (GSMA, 2016), mobile has remained a major deliverer of innovative new products and applications in SSA, thereby immensely contributing to the socio-economic advancement of the region.
<table>
<thead>
<tr>
<th>Former Colony</th>
<th>Spoken Language</th>
<th>Total Population (in million.)</th>
<th>#Mobile Connection (in million)</th>
<th>Growth Rate (YoY)</th>
<th>SIM Penetration (%)</th>
<th>Unique Penetration (%)</th>
<th>Broadband Penetration (%)</th>
<th>Pre-paid (%)</th>
<th>Independent NRA</th>
<th>Level of Competition</th>
<th># of MNOs</th>
<th>Technology in Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>Portuguese</td>
<td>24.2</td>
<td>14.0</td>
<td>9.0</td>
<td>64</td>
<td>50</td>
<td>26.0</td>
<td>97.0</td>
<td>Yes</td>
<td>Full</td>
<td>2</td>
<td>4G LTE</td>
</tr>
<tr>
<td>Benin</td>
<td>French</td>
<td>10.6</td>
<td>10.8</td>
<td>14.2</td>
<td>102</td>
<td>47</td>
<td>4.0</td>
<td>99.0</td>
<td>Yes</td>
<td>Full</td>
<td>5</td>
<td>3G</td>
</tr>
<tr>
<td>Botswana</td>
<td>English</td>
<td>2.2</td>
<td>3.4</td>
<td>3.8</td>
<td>167</td>
<td>82</td>
<td>26.0</td>
<td>97.0</td>
<td>Yes</td>
<td>Partial</td>
<td>3</td>
<td>4G LTE</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>French</td>
<td>17.6</td>
<td>12.5</td>
<td>13.0</td>
<td>72</td>
<td>34</td>
<td>4.0</td>
<td>100.0</td>
<td>Yes</td>
<td>Full</td>
<td>3</td>
<td>3G</td>
</tr>
<tr>
<td>Burundi</td>
<td>Belgium</td>
<td>10.8</td>
<td>3.2</td>
<td>8.5</td>
<td>31</td>
<td>18</td>
<td>2.0</td>
<td>99.0</td>
<td>Yes</td>
<td>Full</td>
<td>3</td>
<td>3G</td>
</tr>
<tr>
<td>Cameroon</td>
<td>French</td>
<td>22.8</td>
<td>17.3</td>
<td>11.5</td>
<td>76</td>
<td>39</td>
<td>0.0</td>
<td>99.0</td>
<td>Yes</td>
<td>Full</td>
<td>4</td>
<td>4G LTE</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>Portuguese</td>
<td>0.5</td>
<td>0.6</td>
<td>7.7</td>
<td>122</td>
<td>63</td>
<td>49.0</td>
<td>98.0</td>
<td>Yes</td>
<td>Full</td>
<td>2</td>
<td>3G</td>
</tr>
<tr>
<td>CAR</td>
<td>French</td>
<td>4.8</td>
<td>1.5</td>
<td>6.8</td>
<td>31</td>
<td>23</td>
<td>1.0</td>
<td>99.0</td>
<td>Yes</td>
<td>Full</td>
<td>5</td>
<td>GSM 1800</td>
</tr>
<tr>
<td>Chad</td>
<td>French</td>
<td>13.6</td>
<td>5.2</td>
<td>20.1</td>
<td>40</td>
<td>19*</td>
<td>0.0</td>
<td>99.0</td>
<td>Yes</td>
<td>Full</td>
<td>3</td>
<td>GSM 1800</td>
</tr>
<tr>
<td>Comoros</td>
<td>French</td>
<td>0.8</td>
<td>0.4</td>
<td>10.1</td>
<td>51</td>
<td>24</td>
<td>0.0</td>
<td>98.0</td>
<td>Monopoly</td>
<td>1</td>
<td></td>
<td>GSM 1800</td>
</tr>
<tr>
<td>Congo</td>
<td>French</td>
<td>4.5</td>
<td>5.0</td>
<td>–1.4</td>
<td>108</td>
<td>58</td>
<td>7.0</td>
<td>98.0</td>
<td>Yes</td>
<td>Full</td>
<td>3</td>
<td>3G</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>French</td>
<td>22.2</td>
<td>22.1</td>
<td>14.6</td>
<td>106</td>
<td>50</td>
<td>23.0</td>
<td>100.0</td>
<td>Yes</td>
<td>Partial</td>
<td>6</td>
<td>3G</td>
</tr>
<tr>
<td>Djibouti</td>
<td>French</td>
<td>0.9</td>
<td>0.3</td>
<td>13.3</td>
<td>32</td>
<td>30</td>
<td>10.0</td>
<td>98.0</td>
<td>No</td>
<td>Monopoly</td>
<td>1</td>
<td>2G/GSM 900</td>
</tr>
<tr>
<td>DRC</td>
<td>Belgian</td>
<td>74.9</td>
<td>37.1</td>
<td>37.2</td>
<td>54</td>
<td>27</td>
<td>8.0</td>
<td>98.0</td>
<td>Yes</td>
<td>Full</td>
<td>7</td>
<td>3G</td>
</tr>
<tr>
<td>Eq. Guinea</td>
<td>Spanish</td>
<td>0.8</td>
<td>0.5</td>
<td>9.1</td>
<td>66</td>
<td>46</td>
<td>0.0</td>
<td>99.0</td>
<td>Yes</td>
<td>Full</td>
<td>2</td>
<td>GSM 1800</td>
</tr>
<tr>
<td>Eritrea</td>
<td>English</td>
<td>5.1</td>
<td>0.4</td>
<td>16.4</td>
<td>6</td>
<td>2*</td>
<td>0.0</td>
<td>98.0</td>
<td>No</td>
<td>Monopoly</td>
<td>1</td>
<td>2G/GSM 900</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>Amharic</td>
<td>97.0</td>
<td>30.1</td>
<td>14.6</td>
<td>32</td>
<td>21</td>
<td>49.0</td>
<td>99.0</td>
<td>No</td>
<td>Monopoly</td>
<td>1</td>
<td>4G LTE</td>
</tr>
<tr>
<td>Gabon</td>
<td>French</td>
<td>1.7</td>
<td>3.6</td>
<td>–0.5</td>
<td>210</td>
<td>75</td>
<td>0.0</td>
<td>99.0</td>
<td>Yes</td>
<td>Full</td>
<td>4</td>
<td>2G/GSM 1800</td>
</tr>
<tr>
<td>Gambia</td>
<td>English</td>
<td>1.9</td>
<td>2.3</td>
<td>17.5</td>
<td>120</td>
<td>62</td>
<td>7.0</td>
<td>98.0</td>
<td>Yes</td>
<td>Full</td>
<td>4</td>
<td>4G WiMAX</td>
</tr>
<tr>
<td>Ghana</td>
<td>English</td>
<td>26.8</td>
<td>30.4</td>
<td>8.9</td>
<td>115</td>
<td>53</td>
<td>24.0</td>
<td>98.0</td>
<td>Yes</td>
<td>Full</td>
<td>8</td>
<td>4G LTE</td>
</tr>
<tr>
<td>Guinea</td>
<td>French</td>
<td>12.3</td>
<td>8.7</td>
<td>29.9</td>
<td>72</td>
<td>37</td>
<td>3.0</td>
<td>100.0</td>
<td>Yes</td>
<td>Full</td>
<td>4</td>
<td>3G</td>
</tr>
<tr>
<td>G. Bissau</td>
<td>Portuguese</td>
<td>1.8</td>
<td>1.2</td>
<td>16.9</td>
<td>64</td>
<td>42</td>
<td>0.0</td>
<td>98.0</td>
<td>Yes</td>
<td>Partial</td>
<td>3</td>
<td>2G/GSM 1800</td>
</tr>
<tr>
<td>Kenya</td>
<td>English</td>
<td>44.9</td>
<td>33.6</td>
<td>7.4</td>
<td>74</td>
<td>44</td>
<td>15.0</td>
<td>97.0</td>
<td>Yes</td>
<td>Full</td>
<td>3</td>
<td>4G LTE</td>
</tr>
<tr>
<td>Lesotho</td>
<td>English</td>
<td>2.1</td>
<td>2.1</td>
<td>4.0</td>
<td>102</td>
<td>45</td>
<td>15.0</td>
<td>98.0</td>
<td>Yes</td>
<td>Full</td>
<td>2</td>
<td>3G</td>
</tr>
<tr>
<td>Liberia</td>
<td>English</td>
<td>4.4</td>
<td>3.2</td>
<td>–0.8</td>
<td>73</td>
<td>32</td>
<td>6.0</td>
<td>98.0</td>
<td>Yes</td>
<td>Partial</td>
<td>4</td>
<td>4G</td>
</tr>
</tbody>
</table>

Table 5. SSA Country Mobile Profiles
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Madagascar</td>
<td>French</td>
<td>23.6</td>
<td>32.0</td>
<td>14.0</td>
<td>97.0</td>
<td>Yes</td>
</tr>
<tr>
<td>Malawi</td>
<td>English</td>
<td>16.7</td>
<td>31</td>
<td>10.0</td>
<td>99.0</td>
<td>Yes</td>
</tr>
<tr>
<td>Mali</td>
<td>French</td>
<td>17.1</td>
<td>1.4</td>
<td>149</td>
<td>99.0</td>
<td>Partial</td>
</tr>
<tr>
<td>Mauritania</td>
<td>French</td>
<td>4.0</td>
<td>6.7</td>
<td>94</td>
<td>28.0</td>
<td>Yes</td>
</tr>
<tr>
<td>Mauritius</td>
<td>Portuguese</td>
<td>13.3</td>
<td>7.6</td>
<td>132</td>
<td>80</td>
<td>40.0</td>
</tr>
<tr>
<td>Mozambique</td>
<td>Portuguese</td>
<td>27.2</td>
<td>22.5</td>
<td>70</td>
<td>22.0</td>
<td>Yes</td>
</tr>
<tr>
<td>Namibia</td>
<td>English</td>
<td>18.1</td>
<td>4.2</td>
<td>102</td>
<td>44</td>
<td>20.0</td>
</tr>
<tr>
<td>Niger</td>
<td>French</td>
<td>17.5</td>
<td>9.7</td>
<td>76</td>
<td>46</td>
<td>17.0</td>
</tr>
<tr>
<td>Nigeria</td>
<td>English</td>
<td>13.5</td>
<td>13.9</td>
<td>64</td>
<td>33</td>
<td>28.0</td>
</tr>
<tr>
<td>Sao Tome &amp; P</td>
<td>Portuguese</td>
<td>0.2</td>
<td>0.1</td>
<td>207</td>
<td>65</td>
<td>9.0</td>
</tr>
<tr>
<td>Senegal</td>
<td>French</td>
<td>14.7</td>
<td>9.2</td>
<td>99</td>
<td>9.0</td>
<td>Yes</td>
</tr>
<tr>
<td>Seychelles</td>
<td>English</td>
<td>0.1</td>
<td>3.6</td>
<td>162</td>
<td>73</td>
<td>28.0</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>English</td>
<td>6.3</td>
<td>-3.3</td>
<td>77</td>
<td>36</td>
<td>17.0</td>
</tr>
<tr>
<td>Somalia</td>
<td>English</td>
<td>10.5</td>
<td>5.5</td>
<td>34</td>
<td>20</td>
<td>98.0</td>
</tr>
<tr>
<td>South Africa</td>
<td>English</td>
<td>5.4</td>
<td>12.5</td>
<td>150</td>
<td>70</td>
<td>4.0</td>
</tr>
<tr>
<td>Sudan</td>
<td>English</td>
<td>11.9</td>
<td>3.3</td>
<td>12.7</td>
<td>28</td>
<td>12.0</td>
</tr>
<tr>
<td>Swaziland</td>
<td>English</td>
<td>13.5</td>
<td>9.6</td>
<td>72</td>
<td>63</td>
<td>11.0</td>
</tr>
<tr>
<td>Tanzania</td>
<td>English</td>
<td>51.2</td>
<td>17.4</td>
<td>63</td>
<td>38</td>
<td>25.0</td>
</tr>
<tr>
<td>Togo</td>
<td>French</td>
<td>7.1</td>
<td>4.8</td>
<td>141</td>
<td>69</td>
<td>5.0</td>
</tr>
<tr>
<td>Uganda</td>
<td>English</td>
<td>15.7</td>
<td>7.6</td>
<td>67</td>
<td>67</td>
<td>4.0</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>English</td>
<td>15.3</td>
<td>11.8</td>
<td>81</td>
<td>51</td>
<td>22.0</td>
</tr>
</tbody>
</table>

Author’s compilation based on data sourced from GSMA Intelligence (Mid-June 2015 data), The Global Economy, ITU, Telecom Week: NRA=National (Telecoms) Regulatory Authority.
Given that both SIM and unique connections in SSA, respectively standing at 50% and 27%, were below the global averages of 72% and 42% in 2016 (GSMA, 2017b), there are strong outlook for further intensification of MNO activities in the region. Also, as more than 40% of the population of most SSA countries are under 16 years and mobile uptake by women stood at 40% in 2016 (GSMA, 2017b), there is high likelihood for the future growth of mobile to be driven by individuals in these two groups. (Note that women had 17% less chances than men to own a mobile phone in SSA as of 2016.) The rapid doubling of smartphone connections to nearly 200 million between 2015 and 2016, accounting for 25% of the total mobile connections (excluding M2M connections), is an additional indicator of the great future for mobile in SSA. Majority of the new network subscribers are expected to come from the currently underpenetrated countries and specifically from the DRC, Nigeria, and Tanzania, which have continually exhibited strong leadership in the uptake of mobile. Overcoming the challenges of high costs of extending network connections to rural and remote areas, the volatile economic and socio-political situations, as well as the low income and purchasing power in most countries will surely raise the stakes for successful mobile telecoms business in SSA.

1.2 Research Gap, Objective, and Question

Growing demands for mobile telecoms services in recent times have compelled MNOs to intensify their FDI efforts, thereby heightening competition in the global market (e.g., Garbacz & Thompson, 2007). This has also aroused the interest of academic scholars (e.g., Chanakira, 2012; Clegg & Kamall, 1998; Clifton et al., 2011; Curwen & Whalley, 2006, 2008; Gerpott & Jakopin, 2008; Gruber, 2001; Gruber & Verboven, 2001; Jakopin & Klein, 2012; Luiz & Stephan, 2012; Pogrebnyakov, 2008; Pogrebnyakov & Maitland, 2011; Sarkar et al., 1999; Whalley & Curwen, 2005; Whalley & Curwen, 2006), seeking to empirically investigate and understand the cross-border investment behaviors of MNOs, using a variety of theoretical assumptions and locational contexts.

Essentially, understanding how MNOs invest and compete in foreign markets is necessary, given the important contributions of mobile telecoms to the global economy. By enhancing the efficiency of communication among people and firms, for instance, mobile telecoms have been a major success factor for businesses (e.g., Cronin, Parker, Collieran, & Gold, 1991; Röller and Waverman, 2001; Sridhar & Sridhar, 2007). Through the services offered by MNOs, transaction costs have decreased, enabling firms to expand their business horizons and market reach (Röller & Waverman, 2001). OECD (2001) notes that the mobile telecoms industry has largely been a success story and
gained importance as a major contributor to both the global economy and those of nations and regions, with Deloitte (2017) contending that the economic contributions of the mobile subsector have been dramatic, relative to the others in the telecoms industry.

Nonetheless, much of the extant understanding about the foreign-market behaviors of firms, in general, has been derived from studies conducted mainly in the developed markets of Europe and North America (e.g., Chittoor, 2009; Guillén & Garcia-Canal, 2009; Madhok & Keyhani, 2012). While it may be arguable for business research to initially focus on the advanced markets, especially for newly emerging industries (Burgess and Steenkamp, 2006), the present low level of studies on emerging markets creates a major bias in the literature. For instance, although there has been an increasing interest on SSA and the activities of MNEs embedded in it, as evident through special issues of journals and other academic activities, the region is still underexplored (e.g., Zoogah, 2008; Acquaah et al., 2013; George, 2015).

For instance, Chanakira (2012) and Luiz and Stephan (2012) were the only studies that focused on issues pertaining to cross-border expansion and competition among MNOs in SSA, despite the growing economic importance of both the region and its mobile telecoms industry. Chanakira (2012) assessed the factors affecting the entry strategy choices of telecom operators (both fixed-line and mobile) in Africa while Luiz and Stephan (2012) studied the multinationalization of South African telecom firms across the entire African continent. Notably, neither study purely addressed the issue with SSA as the empirical context nor touched on the aspect of competition among the firms.

Noteworthy is that the traditional internationalization frameworks have limitations in fully explaining the investment behaviors of MNEs in emerging markets (e.g., Chittoor, 2009; Luo & Tung, 2007; Meyer, 2007); they also have generally fallen short of capturing the dimensions of competition and competitive interactions among firms in emerging-market regions. Notably, the development of the Uppsala stage model (e.g., Johanson & Vahlne, 1977; Johanson & Weidersheim-Paul, 1975; Luostarinen, 1979; Welch & Luostarinen, 1988), which has basically served as a standard for explaining the process internationalization of firms (Vahlne & Nordström, 1993), was solely based on the activities of firms from the Nordic region. Unarguably, therefore, adopting such a framework as the benchmark for investigating the investment behaviors of firms in an emerging-market-region context, such as SSA, can only yield biased results.

With the growing intensity of the activities of the MNOs in SSA and their obvious impactful contributions to the region’s economic advancement, the knowledge gap created by the current low-level academic inquiry into the cross-border investment behaviors of
these telecoms firms is a matter of concern. Against this backdrop, this study complements the extant literature by investigating the combined phenomena of cross-border expansion and competitive interactions of the multinational MNOs in SSA. The main research question guiding the study is: How do mobile network operators expand operations and competitively interact across the Sub-Saharan Africa market region? By answering this question, this study clearly departs from Chanakira’s (2012) and Luiz and Stephan’s (2012) works by being mobile-telecoms- and SSA-focused and incorporating the aspects of both cross-border expansion and competitive interactions of MNOs.

Owing to the relatively short history of the mobile telecoms industry and the lack of extensive academic work in the domain, it can be argued that the issues of cross-border expansion and competition among mobile telecoms firms in SSA currently constitute new and interesting empirical phenomena. Thus, with both the industry and SSA market region as underexplored contexts, this study has strong potential for generating useful insights for extending academic knowledge. Essentially, SSA offers a great locational context for exploring the duo-phenomena under study, given its fast emerging-market status, rapid economic development over the past few decades, and huge diversity.

Conceptualized as low-income, rapid-growth countries, where economic liberalization drives growth (Hoskisson et al., 2000), emerging markets – including the countries of SSA – are, however, typically difficult for doing business, due to their numerous inherent institutional and environmental challenges (e.g., Khanna & Palepu, 1997; Hoskisson, Johnson, Tihanyi, White, 2005; Cuervo-Cazurra & Genc, 2008) and high dynamism (e.g., Wright et al., 2005). Following these challenges, extending operations into emerging markets is typically very daunting, relative to developed markets (e.g., Khanna & Palepu, 1997; Hoskisson et al., 2005). Nonetheless, emerging markets have become important contributors to the world economy, as they account for an increased proportion of the global FDI flows (Hoskisson et al., 2000; UNCTAD, 2014). As reported by UNCTAD (2017), emerging markets (including both developing and transition economies) accounted for about 43% or an equivalent US $652 billion of the US $1.52 trillion global foreign direct investment (FDI) flows in 2016.

Specifically, with the dwindling growth in developed market regions over the past few decades (e.g., Nakata & Sivakumar, 1997; Hart & Milstein, 2003; London & Hart, 2004; Govindarajan & Ramamurti, 2011; Peng, Wang, & Jiang, 2008), there has been a long-term investment shift towards emerging markets (e.g., Hay, 2000; Cavusgil, Ghauri, & Agarwal, 2002; IMF, 2014). With this development, emerging markets are currently described as the hotspots for global investment (e.g., Bloomberg, 2015b; IMF, 2007; Teagarden, 2012). It should be noted, following IMF (2017), that the economies of
emerging and developing markets are projected to grow at the rates of 4.5% and 4.8% in 2017 and 2018, respectively, relative to the just 1.9% and 2.0% forecasts for developed markets in the two years; hence, emerging-market regions have become more attractive than their developed counterparts in terms of incentives for firms to invest.

Given SSA’s positions as both the world’s second fastest-growth economic region (e.g., World Bank, 2014; IMF, 2015; EY, 2015) and the least mobile-penetrated (GSMA, 2015), MNOs perceive the region as offering huge potentials for investment. The wide diversity of the constituent countries – considering market size, historical and colonial background, market and institutional environment, culture (mainly spoken language), and level of infrastructural development – is, however, an important factor worthy of consideration in the investment decisions of the telecoms firms. MNOs with home markets in the UK and France are traditionally more likely to undertake FDIs in the former British and French colonies, respectively.

Nonetheless, as cross-border consolidation is both a major source of competitive advantages and a performance enhancer (e.g., Ghemawat, 2007; Rugman & Verbeke, 2004; Stienstra et al., 2004), the firms may be compelled to invest beyond the markets of the former colonies of their home countries. This simply implies that the MNOs may also enter the more institutionally-distant countries from their home markets, potentially implying higher investment challenges. The availability of a large market or population, better standard of living, and a higher level of infrastructural development is expected to be another important consideration for choices of FDI locations among the mobile operators. It should be noted that each SSA country market has its own policies regarding entry regulations and the setting of standards for competition, which may further impinge upon the focal firms’ cross-border investment and competitive behaviours.

As realizing a clearer and more holistic knowledge about the cross-border investment behaviours of multinational MNOs cannot be possible without having an adequate understanding of how such firms choose foreign-market investment locations and contend with rivals in those markets, this study aims to broaden the extant knowledge base from the perspective of the SSA emerging-market region. Essentially, this research is undertaken as a response to the growing calls for expanding International Business (IB) and Strategy research with empirical evidence from emerging markets (e.g., Burgess & Steenkamp, 2006; Hoskisson, et al., 2000; Griffith, Cavusgil, & Xu, 2008; Hitt, Dacin, Levitas, Arregle & Borza, 2000; Kostova, Roth, & Dacin, 2008; London & Hart, 2004; Peng et al., 2008; Ramamurti, 2004; Wright et al., 2005). This study, therefore, joins several others (e.g., Asiedu, 2004, 2006; Eweje, 2006; Luiz, 2012; Amankwah-Amoah,
2016; Ado & Su, 2016; de Jonge, 2016) in providing context-specific insights into how business is done in SSA, from the perspective of mobile telecoms.

The study is based on the recognition that SSA offers a rich locational context for expanding management research (e.g., George et al., 2016; Mol, Stadler, & Arino, 2017; Mbarika, Okoli, Byrd, & Datta, 2005). It is further anchored in the assertion that the wide institutional differences between developed and emerging markets (e.g., Ghemawat, 2007; Hoskisson et al., 2000; Khanna & Palepu, 1997) may limit the utility of the findings of developed-market studies, when considering the investment and competitive behaviors of firms embedded in emerging markets (e.g., Mellahi & Mol, 2015).

The novelty of the study derives basically from the fact that both SSA and its mobile telecoms industry are currently underexplored, in academic terms, with research (e.g., Mellahi & Mol, 2015; Mol et al., 2017) suggesting that there may be some empirical phenomena about SSA that could constitute important research agendas. As a result, it suffices to adopt SSA as a locational context for empirical investigations.

Undertaking such studies (including this current one that focuses on the MNOs in SSA) is very important, given essentially the present low-level academic inquiries into the phenomena of cross-border expansion and competition in the mobile telecoms industry, both at the global and SSA regional market levels. Besides, research (e.g., Ghemawat, 2005, 2007; Khanna & Palepu, 1997; Khanna, Palepu, & Sinha, 2005) shows that the inherent environmental and institutional challenges of emerging markets may compel firms investing in them to adopt different entry and competitive strategies vis-à-vis those employed by firms in the developed markets of Europe and North America.

Mobile telecoms as an industry has several inherent characteristics that make it specific, relative to other industries. The service rendered by mobile operators is technology-oriented (e.g., Johansson, 1994), without much need for co-location or personal contact between the service provider (the MNO) and the mobile subscriber or user or customer (e.g., Christensen, Scott, & Roth, 2001; Meuter, Ostrom, Roundtree, & Bitner, 2000).

The mobile subsector is considered strategic, like the wider telecoms industry, in terms of its contributions to national economic growth and development (e.g., OECD, 1991; Teece, 1991). Additionally, the activities of the telecoms operators are strictly regulated by the government, which raises the barriers to entry very high (Clifton et al., 2011; Nicolaides, 1994; Sarkar et al., 1999), which clearly explains the fewness of MNOs or the high concentration of the industry in most countries (e.g., Gruber, 2001; Gruber & Verboven, 2001). The mobile telecoms industry is further associated with low operator
switching costs (e.g., Aydin, Özer, & Arasil, 2005; Kim, Park, & Jeong, 2004), creating room for the high subscriber churn rates\(^7\) witnessed by MNOs in most country markets.

As generating the critical mass of subscribers needed for sustainable growth cannot be realized in just one market, irrespective of its size or degree of economic endowment, MNOs are compelled to exploit the synergic advantages of cross-border consolidations. The highlighted foregoing inherent attributes of both mobile and the mobile telecoms industry make it understandable for MNOs to exhibit different behaviors, relative to other service-industry firms, when undertaking FDI; it should also be recalled that emerging markets are very different from their developed counterparts. Thus, the investment patterns of the empirical firms adopted in this study, MNOs, are expected to be contingent upon the known attributes of both the business and locational contexts – mobile telecoms and SSA. For instance, there is likelihood for choices around the FDI locations and entry and competitive strategies of the mobile operators in SSA to be influenced by their perceptions of the business environment in each country of interest.

1.3 Structure of the Dissertation

This dissertation is comprised of two main parts (see Table 6). Part I provides an overview of the research and consists of five subparts. The first subpart is the introduction; it establishes both the research background and empirical contexts (business and locational), as well as the research gap, objective, and questions. The second subpart focuses on the theories, highlighting the major theoretical frameworks and concepts upon which the study is built. As focus is on the cross-border expansion and competitive interactions of firms, the internationalization and the multimarket competition (by extension, the competitive dynamics) literatures form the theoretical background for the research.

The third subpart highlights the methodological approaches employed in collecting and analyzing the data employed in the three empirical substudies, which are summarized in the fourth subpart. (Note that the processes of data collection and analysis for each paper are detailed in its methodology section.) The fifth subpart is the discussion and conclusion section; highlighting the major findings of the overall study, the theoretical (academic) contributions, and the practical (managerial) implications. This final subpart also identifies the limitations of the study and makes suggestions for future research.

Part II consists of the four papers in the dissertation: Paper I reviews the literature on the internationalization of mobile telecommunication, whereas Papers II, III, and IV are

\(^7\) Churn rate refers to the annual percentage rate at which customers stop subscribing to or abandon a mobile network
empirical and reflect the three substudies investigating different dimensions of the cross-border investment and competitive behaviors of multinational MNOs in SSA. Specifically, Paper II investigates the subject of cross-border expansion among the MNOs, with emphasis on their choices of investment locations. Paper III explores multimarket competition among the telecoms firms while, Paper IV investigates their competitive action-response strategies.

Table 6. Structure of the Dissertation

<table>
<thead>
<tr>
<th>Part I</th>
<th>Part II</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction</td>
<td>Paper I</td>
</tr>
<tr>
<td>2. Theoretical Background</td>
<td>Cross-border Expansion of Mobile Network Operators in Sub-Saharan Africa: Investment Location Choice Determinants</td>
</tr>
<tr>
<td>3. Methodology</td>
<td>Paper III</td>
</tr>
<tr>
<td>4. Summaries of the Papers</td>
<td>Competitive Interactions of Mobile Network Operators in Sub-Saharan Africa: A Multimarket Competition and Oligopolistic Reaction Perspective</td>
</tr>
<tr>
<td>5. Discussion and Conclusion</td>
<td>Paper IV</td>
</tr>
<tr>
<td></td>
<td>Competitive Interactions of Mobile Network Operators in Sub-Saharan Africa: An Action-Response Theoretical Perspective</td>
</tr>
</tbody>
</table>
2. Theoretical Background

This section encapsulates the two theoretical perspectives, namely internationalization and multimarket competition (and competitive dynamics) frameworks, employed in the research. The aspect of internationalization, underpinning Papers I and II, relates to the mechanism of cross-border expansion of firms, with emphasis on investment location choices. The multimarket competition and competitive dynamics frameworks, which form the theoretical foundations for Paper III and Paper IV, on the other hand, relate to how multinational firms interact with rivals in their commonly-shared markets.

2.1 The Internationalization Perspective

Internationalization, generally conceptualized as the process by which firms expand their activity bases into foreign markets (e.g., Johanson & Vahlne, 1977; Johanson & Weidersheim-Paul, 1975; Luostarinen, 1979; Welch & Luostarinen, 1988), has been a key term in the International Business (IB) and Global Strategy literatures. Aulakh, Kotabe, and Teegen (2000) indicate that increasing market liberalization around the globe, especially in the formerly protected economies, led to the intensification of cross-border expansion among firms. Major arguments underlying internationalization are that cross-border aggregation increases market or customer base, especially with declining growth potentials in the domestic market (e.g., Andersson, 2000), and generates economies of scale by distributing costs across products in multiple markets (e.g., Ghemawat, 2007; Porter, 1986; Sapienza, Autio, George, & Zahra, 2006).

Cross-border expansion is also spurred by firms’ desire for expanded revenue bases, acquisition of more competitive resources and strategic assets, as well as enhanced operational efficiency (e.g., Andersson, 2000; Dunning, 2000; Luo & Tung, 2007). Additionally, firms enter foreign markets to consolidate competitive advantages across borders and enhance sustainable growth capabilities (e.g., Bloodgood, Sapienza, & Almeida, 1996; Tallman & Fladmoe-Lindquist, 2002; Zahra, Ireland, & Hitt, 2000). Further triggers of internationalization include the desire of firms to accumulate knowledge and experience from international networks (e.g., Andersson, Forsgren, & Holm, 2002;
Coviello & Munro, 1997; Johanson & Mattsson, 1987), and to respond to rivals’ competitive moves (e.g., Baum & Korn, 1996; Porter, 2008).

As operating in foreign markets is a risky venture (e.g., Brøthers, 1995; Hennart, 2009), the internationalizing firm is faced with numerous difficulties (Cuervo-Cazurra, Maloney, & Manarakhan, 2007). Such challenges associated with cross-border expansion, referred to collectively as the liability of foreignness (LOF), which worsens with lack of international experience (e.g., Eriksson, Johanson, Majkgard, & Sharma, 1997; Johanson & Vahlne, 1977), heightens the cost of doing business abroad (Zaheer, 1995; Zaheer & Mosakowski, 1997). Studies (e.g., Hitt et al., 1997; Hitt, Tihanyi, Miller, & Connelly, 2006; Tallman & Li, 1996) contend that operating in countries with different cultural values, levels of development, or institutions may heighten LOF and thus impact firm performance negatively. Internationalizing firms also suffer liabilities of expansion and newness (Cuervo-Cazurra et al., 2007): liability of expansion results from exposure to the complexity of having to contend with additional requirements accruing from transportation, communication, and coordination in foreign markets (e.g., Hitt et al., 1997; Tallman & Li, 1996), whereas liability of newness accrues from having to operate in an entirely new competitive environment (e.g., Hastings, 1999).

The Uppsala process model, among the earliest theoretical frameworks for explaining the internationalization process, highlights the tendency of some firms to launch their cross-border expansion bids in stages or steps, entering first into the psychically-close markets with perceived low risks (e.g., Johanson & Vahlne, 1977, 2009; Johanson & Wiedersheim-Paul, 1975), before venturing into the more distant ones. It is argued that the experiential knowledge gained from those culturally- and geographically-close initial markets of entry facilitates entries into the subsequent and relatively more risky markets (Barkema, Bell, & Pennings, 1996; Delios & Henisz, 2003). The Uppsala model may, thus, serve as a strategy alleviating the challenges of LOF for firms expanding operations abroad.

Andersen and Strandskov (1998) posit that enhancing the chances of success in the cross-border expansion bid requires the focal firm to be conscious of its FDI location choices. There is a high likelihood for firms to undertake FDI in countries with large market sizes and high potential for prompt ROI (Asiedu, 2002; Asiedu, 2006). Factors relating to the target market, including market size (or national population) and growth potentials (in terms of GDP), openness, purchasing power of the populace (relating to per capita GDP), level of economic development, nature of the market or institutional environment, level of infrastructural development, and availability of cheap labor are
among the major considerations for choice of investment locations (e.g., Kumar, Stam, & Joachimsthaler, 1994; Koch, 2001; Sakarya, Eckman, & Hyllegard, 2007).

Market entry, with respect to entry timing and strategy, is another important element that requires serious attention by firms seeking cross-border expansion. As pointed out by Arregle, Hébert, and Beamish (2006), for instance, the firm seeking to operate in foreign markets must choose between keeping and sharing control of its subsidiaries. With respect to entry timing, research (e.g., Lieberman & Montgomery, 1988; Lieberman & Asaba, 2006; Makadok, 1998; Ito & Rose, 2002) demonstrates that being the first to enter a market may generate first-mover advantages (FMAs). Despite that FMAs protract as more competitors join the fray (Clegg, Kamall, and Leung, 1996), they are still very crucial for a firm’s competitiveness against rivals.

The choice of entry strategy is very critical once the decision to undertake FDI in the focal country has been made. During the early phase of the internationalization process, the firm is posited to adopt lower resource-committing entry strategies, typified by exporting, due to inadequate knowledge of the focal foreign market, before adopting the more resource-intensive modes, such as FDI. There are different strategic options for entry at the disposal of the firm seeking foreign-market entries, including non-equity contractual ventures (e.g., licensing), equity-based collaborative modes (e.g., strategic alliance, JV), and FDI (e.g., WOS) (e.g., Hill, Wang, & Kim, 1990). The choice of which strategy to adopt depends, in part, on the extent of control sought by the firm, its level of tolerance to risk averseness, and willingness to commit resources; with WOS as the highest control-yielding, riskiest, and most resource-intensive entry strategy.

Due to the key characteristic differences between services and physical goods – notably intangibility, inseparability, perishability, and heterogeneity (e.g., Aharoni, 1996; Aung & Heeler, 2001; Ball, Lindsay, & Rose, 2008; Bodewyn, Halbrich, & Perry, 1986; Campbell & Verbeke, 1994; Capar & Kotabe, 2003; Grönroos, 1999; Javalgi, Griffith, & White, 2003; Javalgi & Martin, 2007), the internationalization patterns of the two firm categories may vary. For instance, it is argued that service firms adopt different market entry strategies, relative to their manufacturing counterparts (e.g., Brouthers & Brouthers, 2003; Ekeledo & Sivakumar, 1998, 2004; Erramilli, 1991, 1993). Similarly, owing to their numerous institutional and environmental challenges (e.g., Khanna & Palepu, 1997; Hoskisson et al., 2005; Cuervo-Cazurra & Genc, 2008) and high dynamism (e.g., Hoskisson et al., 2000; Wright et al., 2005), cross-border diversification in emerging-market regions may be more daunting than in the advanced-market regions.
Research (e.g., Hoskisson et al., 2000; Khanna & Palepu, 1997) claims, for instance, that institutional difficulties impact firms’ choices of FDI strategies for emerging markets, as weak institutions heighten transaction costs and risks (e.g., Demirbag, Tatoglu & Glaister, 2008; Meyer & Peng, 2005). It is also argued that weak legal and institutional environments may be associated with low economic development and high levels of corruption due to low corruption control (e.g., Feito-Ruiz & Menéndez-Requejo, 2010). Additionally, the protection of property rights is weak in emerging markets, with cumbersome regulations and/or unstable political systems (e.g., Luo & Bu, 2017). Contrary to developed markets, where formal rules determine entry strategies, there may be preference for one entry mode over another in the more informal emerging markets (Peng et al., 2008). Furthermore, the level of uncertainty is typically high in emerging markets (e.g., Beyer & Fening, 2012; Meyer, Estrin, Bhaumik & Peng, 2009).

Based on the foregoing, it can be inferred that international diversification has implications for firm strategy and performance (e.g., Brock & Yaffe, 2008; Geringer, Beamish, & DaCosta, 1989), albeit opinions about the multinationality-performance linkage varies among academic scholars. For instance, it is argued that multi-market operations positively influence performance by offering growth opportunities (e.g., Burher, 1987; Chan Kim, Hwang, & Burgers, 1989; Daniels & Bracker, 1989; Geringer et al., 1989; Gimeno & Woo, 1999; Kim & Singal, 1993; Rugman, 1979; Scott, 1982; Tallman & Li, 1996). On the contrary, studies (e.g., Al-Obaidan & Scully, 1995; Buhner, 1987; Gomes & Ramaswamy, 1999; Hitt et al., 1997; Katrishen & Scordis, 1998; Mishra & Gobeli, 1998) contend that cross-border diversity may lower firm performance. Some studies (e.g., Capar, Chinta, & Sussan, 2015) even claim that firm resources, rather than international diversity, offer competitive advantages, thereby further complicating the relationship between multinationality and firm performance (Hitt et al., 2006).

Understandable from the foregoing is that despite the mixed implications for performance, engaging in cross-border expansion is an important strategic option for the firm. While it is obvious that doing business abroad increases uncertainty about their performances, firms still have preference for diversifying operations across foreign markets, owing to the competitive-advantage yielding opportunities such initiative generates (Hitt et al., 2006). This may explain the motive behind the intensification of cross-border expansion of such firms as MNOs in SSA, despite the region’s challenging institutional and business environment as an emerging market region that potentially dampen the prospects of internationalization, as well as the specific nature of mobile telecoms not as a typical service industry that may also compel mobile operators not to exhibit the same international behavior as other service firms.
2.2 The Multimarket Competition/Competitive Dynamics Perspective

Given that economies of scale can be generated through cross-border consolidations (e.g., Ghemawat, 2007; Rugman & Verbeke, 2004; Stienstra et al., 2004), firms have incentives to expand internationally, extending value-added services into foreign markets. By so doing, some of the firms may end up meeting others from the same and/or similar industries, who incidentally become their rivals in those commonly-shared or overlapping markets; hence, following Porter (1986), internationalization leads to cross-border competition. In some cases, at least, some of the firms may also become engaged in multimarket competition, referring to the competitive situation whereby firms simultaneously encounter the same rivals in multiple markets (e.g., Bulow, Geanakoplos, & Klemperer, 1985; Gimeno & Woo, 1999; Jayachandran, Gimeno, & Varadarajan, 1999; Karnani & Wernerfelt, 1985; Spagnolo, 1999; van Witteloostuijn, 1993). Gimeno and Woo (1999) contend that firms engaged in multimarket competition may exhibit different competitive behaviors, relative to single-market competitors.

The multimarket competition perspective is directly linked with the competitive dynamics theoretical assumption (e.g., Baum & Korn, 1996; Chen & Hambrick, 1995; Chen & McMillan, 1992; Ferrier et al., 1999; Gnyawali & Madhavan, 2001; MacMillan et al., 1985; Smith et al., 1989; Smith et al., 2001), which postulates that a successful performance-enhancing or competitive-advantage generating action or move undertaken by a focal firm may provoke reactions or countermoves from its rivals. If a firm in an oligopolistic industry distorts the prevalent competitive situation by being the first to establish a subsidiary in a foreign market, rivals who perceive such as a strategic move that could threaten their industry and/or market positions may be compelled to react in disapproval of the action (Caves, 1996).

Such “follow-the-leader” investment behavior, otherwise known as “oligopolistic reaction” or “bandwagon effect” (e.g., Knickerbocker, 1973; Ito & Rose, 2002; Gimeno, Hoskisson, Beal, & Wan, 2005; Rose & Ito, 2008), or herding (e.g., Scharfstein and Stein, 1990), has often defined competition among firms operating within the same industries. Underlying the oligopolistic-reaction argument is the theoretical assumption that firms naturally respond to neutralize the effects of rivals’ competitive actions or moves (e.g., Chen & Miller, 1994). Research (e.g., Baum & Korn, 1996; Chen & Hambrick, 1995; Rose & Ito, 2009; Smith et al., 1989) demonstrates that oligopolistic firms are apt to respond to the potentially successful performance-enhancing or competitive-advantage-generating actions undertaken by their market and/or industry rivals.

It is also evident that competing firms anticipate each other’s potential reactions, not only in one market but also in their other overlapping or commonly-shared markets.
Given that such broad retaliations may be risky for organizational performance (e.g., Knickerbocker, 1973; Yu & Kannella Jr., 2013), there is great value for firms to bring the intensity of their rivalries under check. As a result, oligopolistic firms often engage in mutual forbearance (e.g., Karnani & Wernerfelt, 1985), which is a form of tacit collusion whereby they cooperate with or, at least, avoid aggressive competitive attacks against rivals met in multiple markets (e.g., Alexander, 1985; Bernheim & Whinston, 1990; Edwards, 1955; Phillips & Mason, 1992). Multimarket competition may, therefore, serve as a deterrent to rivalrous aggression (e.g., Feinberg, 1984; Gimeno, 1999; Jayachandran et al., 1999).

Kantarelis and Veendorp (1988) contend that the payoff from such collusive arrangement (mutual forbearance) outweighs the presumed profit of rivalrous attacks; hence, some studies (e.g., Feinberg, 1984; Parker & Röller, 1997; van Witteloostuijn & van Wegberg, 1992) contend that multimarket rivals potentially facilitate collusion, at least, from the economic point of view. Gimeno (1994) notes that firms competing simultaneously in multiple markets may be more concerned about maintaining the status quo of competition across all their commonly-shared markets than competing vigorously in a limited number of markets. Ito and Rose (2008) suggest, for instance, that two rivals would potentially benefit from each other if one becomes a subordinate in one market of overlap while the other reciprocates similarly in another.

Competitive actions and responses have important implications for business strategy (e.g., Van Witteloostuijn, 1993) and the performance of the MNEs (e.g., Hughes & Oughton, 1993; Gimeno & Woo, 1999; Greve, 2008; Prince & Simon, 2009). To this end, many scholars have embraced the concept of competitive actions and responses as the basis for investigating the nature of competition among multinational firms. Such studies have, expectedly, cut across various industrial sectors and subsectors; including airlines (e.g., Baum & Korn, 1996; Borenstein, 1992; Evans & Kessides, 1994; Gimeno, 1999; Prince & Simon, 2009; Singal, 1996), automobiles (e.g., Rose & Ito, 2008), banking (e.g., Barros, 1999; Pilloff, 1999), hotels (e.g., Fernandez & Marin, 1998), insurance (e.g., Greve, 2008), tires (e.g., Ito & Rose, 2002; Rose & Ito, 2009), and telecommunication (e.g., Busse, 2000; Gimeno et al., 2005; Parker & Röller, 1997).

Thus, conclusive from this section is that firms become multimarket competitors as they seek cross-border consolidations. While it is understandable that the multimarket competition and competitive dynamics literatures have expanded appreciably in recent times, owing to the growing interest of scholars in investigating how rival firms competitively interact with each other in markets they commonly share, it is also observable
that there are currently only very few studies in this domain relating to firms in the mobile telecoms industry, especially in the emerging-market region of Sub-Saharan Africa. This study, therefore, complements the extant literature by exploring the competitive interactions of the multinational MNOs embedded in SSA.

2.3 Conceptual Development of the Study

The main goal of this research is to provide additional understanding to what is already existent in the literature regarding the manner firms expand operations and competitively interact with each other in foreign markets. Internationalization and cross-border competition are therefore the two major theoretical concepts underlying the study. While internationalization relates to how firms expand beyond their domestic bases to embrace foreign markets (e.g., Johanson & Vahlne, 1977; Johanson & Weidersheim-Paul, 1975; Luostarinen, 1979; Welch & Luostarinen, 1988), cross-border competition refers to the manner firms contend with competitors in foreign markets. Being very interlinked and complementary to each other, which is a major requirement for developing a conceptual framework (e.g., Jabareen, 2009; Miles & Huberman, 1994), these two concepts are expected to help in providing a more comprehensive understanding of the international investment strategies of firms, especially from the perspective of the mobile telecoms industry. This is achieved by providing an answer to the main research question of the study: How do mobile network operators expand operations and competitively interact across the Sub-Saharan Africa market region?

The conceptual development of the study (see Figure 1) is such that the foundation was laid through the undertaking of a systematic review of the literature, which aimed at identifying potentially important gaps in the domain of internationalization of mobile telecoms that needed to be filled. Having realized that how MNOs expand and take on each other in emerging-market regions is presently underexplored, as evident from my search of the literature, despite the growing academic attention to the foreign-market investment behaviors of telecoms firms in general, the empirical part of the study sheds light on the combined phenomena of cross-border expansion and competitive interactions of the multinational MNOs embedded in the SSA market region.

Thus, the empirical part of the study comprises two themes relating to the investment activities of MNOs in SSA – cross-border expansion and competitive interactions. The first theme has only one study, the first empirical substudy, which investigates how the mobile telecoms firms expand across national borders within the market region, with emphasis on their choices of investment locations. Research has shown that cross-bor-
nder consolidations generate competitive advantages and enhance organizational performance (e.g., Ghemawat, 2007; Rugman & Verbeke, 2004; Porter, 1986; Stienstra et al., 2004); hence, MNOs undertake multiple-market entries as a strategy to exploit growth opportunities and enhance their competitive advantages and overall performance. It should be noted that as per studies (e.g., He et al., 2006; Gerpott and Jakopin, 2008), MNOs have preferred entry strategies, mainly M&As, for countries with established mobile telecoms infrastructure (including those in SSA); hence, the entry strategies of the firms are not highlighted in this research.

The second theme comprises two studies and explores the competitive interactions of the empirical firms. With the likelihood of some of the MNOs investing in the same markets as certain rivals, the first substudy investigates the nature of multimarket competition and oligopolistic reaction of the firms. Research shows the tendency of rival oligopolistic firms countering each other’s investment moves (e.g., Baum & Korn, 1996; Chen & Hambrick, 1995; Chen and Miller, 1994; Knickerbocker, 1973; Rose & Ito, 2009; Smith et al., 1989), thereby making interfirm mimicry an essential part of their competitive strategies. With the intensification of their cross-border incursions, it is likely for some of the MNOs to end up exhibiting the type of competitive interaction behavior that may replicate multimarket competition, whereby firms simultaneously encounter the same rivals in multiple markets, as conceptualized by studies (e.g., Gimeno & Woo, 1999; Jayachandran et al., 1999; Karnani & Wernerfelt, 1985). The multimarket competitive strategy has been a known phenomenon defining competition in oligopolistic industries. Finally, as the MNOs enter into and become operational in there overlapping markets, there is also the likelihood for them to adopt other competitive strategies than cross-border entries, since a market is most likely entered once. Thus, the other

Figure 1. Conceptual Framework of the Study
substudy in this theme explores the potential other competitive actions undertaken by the empirical firms and their rivals’ response strategies to such.

With the need for a clearer and more in-depth understanding of the investment behaviors of the investigated MNOs, in terms of their cross-border expansion and competitive-interactions-strategies in SSA, the study builds upon a combination of quantitative and qualitative empirical data, which were generated from both primary and secondary sources. Accordingly, a combination of statistical (numeric) and interpretive (thematic) techniques was employed in the data analysis, thereby locating the study within the frame of mixed-method research. Logistic regression and hypergeometric analysis were employed in analyzing the data for the quantitative substudies while the content analytic technique was adopted for the qualitative substudy (see the section on methodology section for more details).

The contribution(s) of the study aim at extending the present academic (theoretical) understanding of how firms expand operations into and compete across foreign markets, which also has useful practical (managerial) implications. As conjecturable from the literature review, which preceded the empirical investigations, the issues of cross-border expansion and competition of firms have gained very low attention in respect of mobile telecoms and emerging markets. Thus, the main merit of this study derives from its adoption of the mobile telecoms industry and SSA as empirical bases, thereby providing academic inclusion to these two hitherto understudied contexts. Besides, the study expands the knowledge base of managers of mobile operators (both incumbent and prospective), in terms of the investment and competitive strategies they could potentially adopt in SSA, and may be, similar other emerging-market regions, in their effort for better organizational performance and competitive positioning in the global market.
3. Methodology

3.1 Research Design

As the overarching research question for this thesis, relating to the cross-border expansion and competitive interactions of MNOs in SSA, may not be fully explored by a single method (quantitative or qualitative), this study adopts a mixed-methods research approach. Consistent with the orientation of mixed-methods research, a sequential-exploratory design was adopted, implying that the study first explored the phenomenon quantitatively (sequentially) before following up qualitatively (exploratorily). Thus, aside from the first paper that is a literature review, the three empirical substudies are organized such that the first two are based on the analysis of quantitative (numerical) data, whereas the third is based on the analysis of qualitative (narrative) data (see Figure 2 for the design of the study).

<table>
<thead>
<tr>
<th>Phenomenon</th>
<th>Paper</th>
<th>Focus Area</th>
<th>Theoretical Perspective</th>
<th>Unit/Level of Analysis</th>
<th>Methodological Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-border Expansion and Competitive Interactions of Mobile Network Operators in Sub-Saharan Africa</td>
<td>I</td>
<td>A Systematic Literature Review of the Internationalization of Mobile Telecoms</td>
<td>Internationalization</td>
<td>The MNO/SSA Regional Market</td>
<td>Systematic Literature Review</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>Cross-border Expansion of MNOs in SSA</td>
<td>Internationalization</td>
<td>The MNO/SSA Regional Market</td>
<td>Quantitative Logistic Regression</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>Multimarket Competitive Interactions of MNOs in SSA</td>
<td>Multimarket Competition, Competitive Dynamics</td>
<td>The MNO/SSA Regional Market</td>
<td>Quantitative Hypergeometric Analysis</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>Competitive Action-response Interactive Strategies of MNOs in SSA</td>
<td>Action-response, Competitive Dynamics</td>
<td>The MNO/SSA Regional Market</td>
<td>Qualitative Content Analysis</td>
</tr>
</tbody>
</table>

*Figure 2. The Design of the Study*

As shown in Figure 2, the first paper is a literature review. The systematic literature review approach, based on the “Antecedents-Phenomenon-Consequences” thematic logic was employed in thematically assessing and categorizing the extant works in the
academic literature on the internationalization of mobile telecoms. Through this literature review, it was realized that internationalization and cross-border (international) competition are yet underexplored in the context of mobile telecoms, particularly in SSA, which essentially motivated this study.

The first empirical paper employs the quantitative research methodological approach to find out how the multinational MNOs in SSA choose their investment locations. This is followed by the second empirical paper, also quantitative, which aims at investigating the extent to which the investment behaviors of the MNOs are defined by oligopolistic reaction. The third and last empirical paper, on the contrary, adopts the qualitative research approach, with the focus of exploring the action-reaction interactive strategies employed by the mobile operators in contending with rivals. The unit of analysis, referring to “what” or “who” that is being studied, for each of the various papers is the firm – in this case, the multinational MNO. The adopted level of analysis, also level of generalization or abstraction, is the SSA market region. Essentially, the study investigates how the multinational MNOs in SSA region undertake FDI and competitively interact.

3.2 Philosophical Orientation and Research Methods

As every scientific inquiry has a “worldview” or “shared understanding of reality” (e.g., Creswell, 1998; Rossman & Rallis, 2003), this study is embedded within the sphere of social sciences. The research mandate is to explore the cross-border investment and competitive behaviors of mobile telecoms firms – MNOs – in the context of SSA, which also links it to behavioral sciences. As the phenomenon under investigation may not be easily conceptualized using a single method, be it quantitative or qualitative, the study adopts the mixed-methods research approach. Thus, epistemologically and ontologically, referring to the creation of knowledge and the nature of the reality being explored (e.g., Carson, Gilmore, Perry, & Gronhaug, 2001), this study is positioned within the research stance of pragmatism.

Hailed as the foundation for mixed-methods research (e.g., Tashakkori & Teddlie, 1998; Teddlie & Tashakkori, 2003), pragmatism, posited as the philosophical underpinning for mixed-methods research (e.g., Greene, 2008; Johnson & Onwuegbuzie, 2004; Tashakkori & Teddlie, 1998), bridges the two extremes of the positivist (quantitative) and anti-positivist (qualitative) paradigms or methodological approaches. (It is important to note that, traditionally, empirical studies fall within these two research dimensions, each with its own epistemological and ontological assumptions, positions, or viewpoints.) As pointed out by Pansiri (2005), while standing in contrast to prevailing positivist and anti-positivist (including the interpretivist) views of scientific discoveries,
the mandate of the pragmatist or pragmatic researcher is not to find truth or reality, the existence of which has perpetually been in dispute, but rather to combine the two traditional paradigms (quantitative and qualitative) to facilitate human problem solving.

Quantitative research refers to the techniques associated with the gathering, analysis, interpretation and presentation of numeric information or quantitative data (Teddlie & Tashakkori, 2009). It is an objective, formal, and systematic process that adopts numerical data to quantify or measure phenomena in order to generate findings (Cormack, 1991). Carr (1994) indicates that quantitative research methods are mainly adopted in the physical sciences for testing theories deductively from the extant knowledge by means of hypothesized relationships and proposed outcomes. Based on the ontological assumptions of positivism, the positivist or quantitative researcher adopts the ‘realist’ stance that the discoverable reality is independent of the researcher and, thus, not mediated by human senses (e.g., Cohen, Manion, & Morrison, 2007). Crotty (1998) posits that the positivist epistemology is that of objectivity; whereby the researcher and the researched are independent entities, with meaning residing solely in the studied object(s) rather than in the conscience of the researcher. The researcher’s opinion may, therefore, not count under the quantitative research methological approach. Nonetheless, the positivist (quantitative) research methods, which are more suited for understanding the natural world, are not easily transferable to the social world (e.g., Amaratunga, Baldry, Sarshar, & Newton, 2002; Berliner, 2002).

Qualitative research, on the contrary, includes techniques associated with the gathering, analysis, interpretation, and presentation of narrative information or qualitative data (e.g., Bryman & Bell, 2015; Teddlie & Tashakkori, 2009), with the aim of describing or explaining certain aspects of a phenomenon for a deeper and clearer understanding (Cormack, 1991). Carr (1994) contends that qualitative research is mainly adopted for developing theories inductively and is mainly suited for the social sciences, such as business studies. The ontological postion of the interpretivist (qualitative researcher) is that of relativism, which implies the view that reality is subjective and thus differs between individuals (e.g., Guba & Lincoln, 1994).

Grix (2004) notes that the epistemology of interpretive research is subjectivism, underscored by the argument that the world does not exist independently of the human knowledge of it. The interpretive paradigm is directed at understanding a phenomenon from the perspective of the individual (Creswell, 2014). With the contention that the social world can only be understood from the standpoint of individuals participating in it (e.g., Cohen et al., 2007; Heron & Reason, 1997), the interpretivist paradigm is sensitive to individual meanings that are otherwise buried in the broader generalizations of
the positivist approach (e.g., Samdahl, 1999; Scotland, 2012). As reality is subjective and varies among individuals, trustworthiness (substitute for validity in quantitative research) is questionable in interpretive research (e.g., Scotland, 2012; Shenton, 2004).

The need to mitigate the limitations associated with the use of the single methods and their often-conflicting results led to the emergence of the mixed-methods approach. Feilzer (2010) argues that this third research approach, also known as integrative research method (Johnson & Onwuegbuzie, 2004), emerged in response to the prolonged paradigm ‘wars’ and debates over which of quantitative or qualitative method was more acceptable for research. By covering the large midway in the quantitative-qualitative continuum, the mixed-methods approach bridges the wide gap between the two mono-method extremes (Johnson, Onwuegbuzie, and Turner, 2007).

Johnson et al. (2007) assert that mixed-methods research fundamentally relies on an intellectual and practical synthesis of quantitative and qualitative evidence (data) to generate more informative, complete, balanced, and useful research results. Studies (e.g., Creswell, Clark, Gutmann, & Hanson, 2003; Tashakkori & Creswell, 2007) assert that the mixed-methods approach enables the researcher to combine both quantitative and qualitative methods to collect and analyze data, integrate the findings, and draw inferences in a single study or program of inquiry. Thus, the data analysis of a mixed-methods study involves an integration of both statistic and thematic data analytic methods (e.g., Teddlie & Tashakkori, 2009), making it suitable for studies in which answers to the research questions could be presented both numerically and narratively.

The mixed-methods approach gains strength from triangulation, which helps in minimizing the limitations of the mono-methods by seeking convergence and corroboration of results from the different methods applied in studying the same phenomenon. The mixed-methods research approach derives impetus by combining the complementary strengths of quantitative and qualitative research, while cancelling out their individual weaknesses (Onwuegbuzie & Johnson, 2006). It is argued that some of the inherent biases of quantitative and qualitative researches are canceled out when the two methodological approaches are combined in a single study or scientific inquiry (e.g., Johnson & Onwuegbuzie, 2004; Johnson et al., 2007; Morgan, 2007; Tashakkori & Creswell, 2007). The methodological pluralism or eclecticism of mixed-methods research aims at integrating the divergent insights of the mono-methods into a workable solution (e.g., Darke, Shanks, & Broadbent, 1998; Feilzer, 2010; Pansiri, 2005).

It is posited that the philosophical orientation of mixed-methods research is most often associated with pragmatism (e.g., Bryman, 2006; Howe, 1988; Johnson & Onwuegbuzie, 2004), a tradition that allows the researcher not to be particularly stuck with one
research method or technique (e.g., Robson, 1993). Pragmatism grants the researcher freedom from the mental and practical constraints emanating from the forced-choice dichotomy between constructivism/interpretivism (qualitative approach) and positivism/postpositivism (quantitative approach) (Creswell & Plano Clark, 2007). The spate of adoption of mixed-methods research in IB and strategy research in recent times (e.g., Cameron & Molina-Azorin, 2011; Hurmerinta-Peltomäki & Nummela, 2006; Welch, Piekkari, Plakoyiannaki, & Paavilainen-Mäntymäki, 2011) and calls for furthering the inculcation of methodological pluralism in these research domains (e.g., Piekkari, Welch, & Paavilainen, 2009) are clear reflections of the growing relevance of the pragmatist philosophical ideology to business and management studies. Obviously, this study builds upon such views and calls to extend our present understanding of the cross-border expansion and competitive behaviors of firms, from the perspective of the presently underexplored mobile telecoms industry in the SSA emerging-market region.

3.3 Data Collection and Analysis

As internationalization and cross-border competition are best explained at level of the firm (e.g., Clifton et al., 2011), this study is built upon empirical data relating to the cross-border investment and competitive moves of the 16 multinational MNOs that actively operated in the SSA market region as of 2014. The data, both primary and secondary, for developing each of the three empirical papers in this dissertation, which combine to answer the adopted overarching research question, were collected from a variety of sources. Employing differently-sourced empirical data enhances the validity of a research (e.g., Lincoln & Guba, 1985).

The primary (narrative) data were generated through interviews with industry informants, particularly managers of consultancy firms, who have adequate knowledge of the MNOs and their investment and competitive activities in SSA. The secondary (numeric) data were, on the other hand, collected from a variety of online sources, including the websites of both the national telecoms commissions of the various SSA countries, as well as the websites of the empirical firms. The data relating to the firms were mainly derived from the annual and media reports in their archives. The other sources of secondary data include the databases of GSMA, ITU, The Global Economy and World Bank, as well as the print media (mainly newspapers and online journals). The combined collection of primary and secondary evidence is typical in the data collection process of mixed-methods research (e.g., Johnson & Turner, 2003; Teddlie & Tashakkori, 2003).

Overall, the data for the three empirical papers were longitudinal: containing retrospective observations of the strategic cross-border (investment and competitive) moves of
the MNOs. The data collection was also longitudinal, given that it stretched over a three-year timeframe (2014-2016). The secondary data (quantitative/numeric) were collected directly in 2014-2015 from the previously identified secondary sources. The primary data (qualitative/narrative) were collected via interviews with the industry informants in 2015-2016. Consistent with Teddlie and Tashakkori (2009), the analysis of the empirical data involved an integration of thematic and statistical analytic techniques. Statistical techniques, namely logistic regression and hypergeometric analyses, were adopted in analyzing the data for the two quantitative papers – Paper II and Paper III. Finally, the analysis of the data for Paper IV was based on the direct content analytic (thematic) technique (see Table 7).

Table 7. Details of the Empirical Data

<table>
<thead>
<tr>
<th>Empirical Paper</th>
<th>Type of Data</th>
<th>Data Collection Method</th>
<th>Data Sources</th>
<th>Data Analytic Technique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper II</td>
<td>Secondary (Numeric)</td>
<td>Online Observation</td>
<td>Databases of GSMA, ITU, The Global Economy, and World Bank; Websites of MNOs and Telecoms Commissions of SSA Countries; Newspaper and journal articles</td>
<td>Logistic Regression</td>
</tr>
<tr>
<td>Paper III</td>
<td>Secondary (Numeric)</td>
<td>Online Observation</td>
<td>Databases of GSMA, ITU, The Global Economy, and World Bank; Websites of MNOs and Telecoms Commissions of SSA Countries; Newspaper and Journal articles</td>
<td>Hypergeometric Analysis</td>
</tr>
<tr>
<td>Paper IV</td>
<td>Primary (Narrative)</td>
<td>Online Observation; Interviews</td>
<td>Print media; Industry informants</td>
<td>Content Analysis</td>
</tr>
</tbody>
</table>

3.4 Research Quality

Given that every piece of research deserves sound quality, there is need for quality assessment criteria for mixed methods research, as also for quantitative and qualitative research (e.g., Cresswell & Plano Clark, 2007; Dellinger & Leech, 2007; Onwuegbuzie & Johnson, 2006; O’Cathain, 2010). Challenging, however, is that opinions vary among scholars with respect to the appropriate quality assessment to be adopted for mixed-methods research, given the combination of quantitative and qualitative orientations. Pluye, Grad, Dunikowski, and Stephenson (2005), for instance, contend that mixed methods studies should be decoupled into their quantitative and qualitative components, each with its own appropriate quality assessment criteria. Contrarily, Bryman (2006) advocates the creation of special criteria for assessing mixed methods research, as is the case for quantitative and qualitative methods.
The quality of this study, specifically, was enhanced by employing the criteria in Caracelli and Riggin’s (1994) quality domains, including planning quality, design quality, data quality, interpretive rigor, inference quality and transferability, and reporting quality. Consistent with Dellinger and Leech (2007) and Shenton (2004), planning quality was gained through preceding the empirical studies by a comprehensive and systematic review of the literature. The review enabled the identification of the gaps not covered by the extant studies, which needed to be filled. As a result, the review also enabled the proper positioning of the study, as well as in appropriately shaping both the research question(s) and study design.

The strategic choice of the mixed-methods approach for the study is consequent to having a deeper understanding of the phenomena being explored, as suggested by research (e.g., Bryman, 2007; O’Cathain, Murphy, & Nicholl, 2008). Following some studies (e.g., Caracelli & Riggin, 1994; Creswell & Plano Clark, 2007; Teddlie & Tashakkori, 2009), the obvious limitations of either quantitative or qualitative method to holistically address the underlying main research question also motivated the choice. The feasibility of undertaking the study was considered at the initial phase, consistent with O’Cathain (2010). Design quality was realized through ensuring the appropriateness of the design in addressing the subquestions within the overarching research question. Following Onwuegbuzie and Johnson (2006), the study was also designed such that the weaknesses of one mono-method would be compensated by the strengths of the other.

Data quality was addressed by ensuring that the data (evidence) bore on the investigated issues and were collected from the right sources. An appropriate data analytic technique was also adopted for each substudy, with the data analysis undertaken properly in each case (see Creswell & Plano Clark, 2007; Teddlie & Tashakkori, 2009). Consistent with O’Cathain et al. (2008), the overall study gained interpretive rigor by ensuring that the conclusions of each substudy emanated from the findings. Effort was also made to clarify the methodological approach from which each finding was made, as well as to ensure that the inferences were consistent with the findings on which they were based.

Teddlie and Tashakkori (2003) assert that the most important step in any mixed-methods study is when the results from the two single strands are combined to provide a coherent answer to the overarching research question, with inference quality and inference transferability as the two elements of the inference process. Inference quality, which incorporates internal validity (quantitative) and trustworthiness (qualitative), refers to the standard for evaluating the quality or validity of the conclusions made based on the findings of the mono-method components of the study (e.g., Lincoln & Guba, 1985). Inference transferability, on the contrary, is an umbrella term for external validity.
or generalizability (quantitative) or transferability (qualitative) and refers to the degree
to which the conclusions of the study could be applied to other contexts or settings (e.g.,
O’Cathain, 2010; Teddlie & Tashakkori, 2003).

To achieve these two elements in this study, following Teddlie and Tashakkori (2003),
the research purpose and overarching question were in the foreground of the analyses
and interpretations. The research question for each paper was also clearly stated sepa-
rately, with the results tentatively interpreted and the findings and inferences combined
to provide a holistic resolution of (or answers for) the overarching research question
underpinning the overall study. As pointed out by Teddlie and Tashakkori (2009), the
inference quality of mixed-methods research depends on the strengths of the inferences
of the quantitative and qualitative strands of that study.
4. Summaries of the Papers

This dissertation comprises four distinct, but interconnected papers, each based on a substudy that contributes in answering the overarching research question. The first paper emerged out of the literature review on the internationalization of mobile telecommunication services, whereas the three others are the outcomes of empirical studies. While the papers differ in terms of focus area, theoretical underpinning, and methodological and analytical approach, they are still conceptually connected, each highlighting an aspect of the phenomenon being investigated. The papers are summarized below:

4.1 Summary of Paper I


Presented at:


As the title suggests, this is a literature review aimed at identifying and categorizing the extant studies on the internationalization of mobile telecoms, as well as offering suggestions for the future. Adopting the systematic literature review methodological approach, we scanned the extant literature for studies focusing on the internationalization of mobile telecoms services. After searching several full-text electronic databases, including EBSCOhost Business Source Complete, JSTOR Business Collection, Elsevier SD Freedom Collection, ProQuest ABI/INFORM Complete New Platform, Emerald Insight, Palgrave, and Google Scholar, using the keywords “internationalization of mobile telecommunications” and “international expansion of mobile network operators”, we identified a total of 265 pieces of work relating to the subject. We restricted our search...
to publications made in 1994-2016, the period when the internationalization of mobile telecoms gained traction among academic scholars. The review was guided by the research question: How has the extant literature captured the internationalization of mobile telecommunications, and what implications does this have for future research?

Based on our preselected criteria of relevance of findings and underlying arguments, we identified a total of 50 research publications for inclusion in the review. We then categorized the findings and arguments of the pieces into themes and sub-themes, consistent with our adopted “Antecedents-Phenomenon-Consequences” underlying theoretical framework for systematic literature review. We collated the articles that discussed the drivers of internationalization of mobile telecoms in the “Antecedent” theme. Studies highlighting the phenomenon or process of internationalization of mobile telecoms were arranged in the “Phenomenon” theme, while studies focusing on the outcome of internationalization of mobile telecoms were included in the “Consequences” theme.

We found that, albeit the cross-border expansion of mobile telecoms has continued to gain attention in academia, much is yet to be studied in the domain. For instance, our review reveals that there is a clear lack of consensus among authors regarding whether multinationality positively influenced the (financial) performance of MNOs. We also found that, although MNOs expand across borders to seek enhanced performance, how the firms contend with rivals in their various markets of operation is yet underexplored. Finally, we found that much of the reviewed pieces were studies undertaken in developed markets; only very few studies focused on emerging markets. We, therefore, recommended that future research should fill the identified gaps for a clearer and more holistic conceptualization of internationalization in the mobile telecoms industry.

The outcome of this literature review is of great importance to the overall research and this dissertation, as it laid the foundation for the empirical substudies. The identification of the major gaps in the extant literature, for instance, guided the decision on what to study next. The fact that cross-border expansion and competitive interactions of MNOs have to-date not gained appreciable research attention in the context of the SSA regional mobile telecoms industry served as the trigger for the three empirical studies.

4.2 Summary of Paper II


Presented at:
This is the first empirical paper in the dissertation, following the finding of the literature review that the internationalization of mobile telecoms in the SSA market region is yet underinvestigated, in academic terms. Our expectation was that new empirical insights into the cross-border investment behaviors of MNOs would emerge out of the diversity of SSA and its inherent nature as an emerging-market region, as well as the dynamism of both the region and its mobile telecoms industry. Anchored in the internationalization theoretical framework, we investigated the cross-border investment behaviors of the 16 MNOs that had significant multinational presence across the SSA regional market as of 2014. The study was underpinned by the research question: How do mobile network operators expand across national borders in Sub-Saharan Africa?

We identified the drivers of cross-border expansion and then explored the FDI location choice determinants of the telecom firms. Attention was paid to the underlying facts that the mobile telecoms industry is both strictly-regulated and with high entry barriers, which explains the often very high concentration (low number) of MNOs in most countries. We also recognized the business and institutional challenges of SSA as an emerging-market region and presumed that the telecoms firms may exhibit different investment behaviors from those of their counterparts in the developed-market regions.

The mainstream literature on market selection appears to suggest that country- and firm-specific factors, as well as institutional variables influence the investment location choices of firms. Countries having large populations or market sizes, strong economies, high standards of living, political stability, and low investment risks are generally perceived as having potentials for generating competitive advantages and high ROI, and thus constitute attractive investment locations. Open economies with well-regulated market institutions are also considered to be favorable for investment. Institution-related variables, especially with respect to cultural proximity – common languages and colonial ties between the home and host markets – and level of corruption are also given serious considerations in the choice of investment locations among multinational firms.

In the case of the mobile telecoms industry, the literature appears to have a consensus that MNOs have the tendency of establishing wholly-owned subsidiaries (WOS), including greenfield investments, in those countries where there is no pre-existing infrastructure for mobile telecoms. On the other contrary, collaborative entry strategies, such as strategic alliances, mergers and acquisition (M&A), or joint ventures (JVs) appear to be preferred in country markets with established mobile telecoms capabilities. Given that all the countries of SSA already had infrastructure for mobile communications in
place during the period of the study, it is understandable for the empirical firms to embrace collaborative entry strategies in their cross-border expansion moves in the region.

We, therefore, propounded our hypotheses on the cross-border investment location choices of the firms, building upon the foregoing underlying premises. We tested our hypotheses using logistic regression and found that institution-related factors, including colonial ties and corruption levels, were the major determinants for choice of investment locations among MNOs in SSA. In addition, it was found that international experiential knowledge played important roles in the MNO’s choice of FDI locations, with the telecoms firms being more likely to invest in countries with greater proportions of their populations living in the urban areas.

4.3 Summary of Paper III


Presented at:

*Academy of International Business Sub-Saharan Africa (AIB-SSA) Conference, Johannesburg, South Africa (26-28 August 2015).*

Given that firms expanding across national borders often encounter market and industry rivals found in their various investment locations, this paper explored the way the multinational MNOs in SSA contend with their overlapping-market rivals. We premised that, with mobile telecoms as an oligopolistic industry, there was the likelihood of observable oligopolistic reaction among the firms, with some countering others’ competitive actions and investment moves. Thus, we positioned the study within the multimarket competition and competitive dynamics theoretical frameworks, with the aim of empirically investigating how the MNOs competitively interact.

With the foregoing in mind, we sought data on the investment moves of our empirical firms, the sample of the 16 multinational MNOs in SSA as of 2014, over the years since the inception of the regional mobile telecoms industry and found a total of 120 such moves. We developed our hypotheses based on the underlying premise that the SSA mobile telecoms industry is oligopolistic and that the MNOs would easily notice the investment moves of rivals and counter them accordingly. We undertook hypergeometric analysis of the pairwise interactions between rival firms. Our study was underpinned
by the research question: How do mobile network operators engage in multimarket competition in Sub-Saharan Africa?

The findings of the study are very interesting, as they reveal some nuances over the findings of the previous studies that were apparently conducted in developed markets and not focused on mobile telecoms. We found evidence of oligopolistic reaction or bandwagon effect between pairs of competing MNOs, considering the full sample of the 41 SSA-countries that allowed some form of competition (either full or partial/restricted) in their mobile telecoms markets, as well as when the sample was segmented in terms of language of business transaction (English, French, and Portuguese) and sub-regions (Eastern, Central, Southern, and Western). Nonetheless, considering MNOs indigenous and non-indigenous to SSA, we found evidence of both oligopolistic reaction and mutual avoidance. This finding of the combined evidence of bandwagon-effect and avoidance strategies among the telecoms firms is quite spectacular, as previous studies rather found MNOs embracing just either strategy, but not both. Our results further revealed that the mobile operators had quite firm-specific strategies in terms of their multimarket competition in SSA.

This paper’s relevance to the overall study is also very high, as it revealed the nature of the competitive interactions among pairs of rival MNOs. While some of the firms tended to follow rivals to market, as a strategy to counter their investment and competitive moves, others avoided engaging in direct (head-to-head) confrontations. The paper also opened another important issue worthy of investigation about the telecoms firms – how they competitively react to rivals’ moves – which goes beyond just FDI location choices and market entry strategies, knowing that most of the SSA country markets are already saturated, considering the average 3.5 MNOs per market as of 2014.

4.4 Summary of Paper IV

Dike, M. C., Competitive Interactions of Mobile Network Operators in Sub-Saharan Africa: An Action-Response Strategy Perspective

Presented at:

Accepted for presentation at the AIB Conference in Dubai, UAE (2-5 July 2017).

The study leading to this last paper in the dissertation aimed at exploring the competitive action-response strategies of MNOs in SSA. It was underpinned by the theoretical assumption that oligopolistic firms feeling threatened by their rivals’ competitive actions
or investment moves, especially if such potentially boosted the initiators’ market or industry position, are apt to take some counter or retaliatory measures. Research shows that embarking on competitive actions and responses is a known strategic option for oligopolistic firms, as they contend for dominance in their respective markets and industries. Nonetheless, evidence shows that, if unchecked, such competitive action-response moves may lead the firms into a series of aggressive rivalries that could be counterproductive to the performances of both the initiators and defenders. Anchored in the competitive action-response perspective of the competitive dynamics theoretical framework, the study was underpinned by the research question: How do mobile network operators shape their competitive actions and responses in Sub-Saharan Africa?

A major realization from the literature review for this substudy was that MNOs often competed based on cross-border expansion or entry into new markets, new technology (network infrastructure) deployment, and promotional price undercutting. Thus, it was premised that these factors constituted the basis for the competitive action-response interactions of the MNOs operating in Kenya, Nigeria, and South Africa: three of SSA’s most dominant country markets. The three countries were selected for the study based on their relatively large populations and economic sizes, high growth potentials, and their permission of full competition in mobile telecoms, which make them strategic and highly-contested telecoms firms. (Note that Ethiopia, the largest economy in East Africa, operates a monopoly mobile telecoms market; hence, the choice of Kenya.)

To advance the study, a search was made for the competitive actions and responses undertaken by the MNOs in the three markets. The search was retrospective, commencing from the time the first noticeable actions and retaliatory responses were made in each market. Interviews with industry experts (managers of telecoms consultancy firms) who are well-informed about the mobile telecoms industry in SSA and the activities of the MNOs were used to corroborate the online-sourced media data. The direct content analysis method was employed in analyzing the empirical data, generating a thematic categorization into: nature and initiators of competitive actions, nature and degree of competitive responses, and winners and losers of aggressive rivalrous competition.

The study revealed that promotional price undercutting was the most pervasive competitive weapon employed by the MNOs in their rivalries. Aggressive rivalries were found to be initiated by the smaller, late-entrant MNOs seeking to boost subscriber volumes to strengthen their competitive positions against the larger and more established market leaders. Apparently, countermoves by the defenders (mainly the market leaders) to prevent further escalation of rivalries and restore the previous status quo of competition or
competitive equilibrium were rebuffed by the initiators who rather became more aggressive. As the defenders would not stand idly and watch their market shares erode or lose their market and industry competitive positions to the attackers, they also launched further retaliatory attacks. This led to the series of competitive actions and responses that have protracted till-date in each of the three investigated country markets, with no end or a clear winner in sight.
With the growing demands for mobile telecoms services, as well as the creation of business-friendly environments and a more favorable investment climate, orchestrated through the institution of sound market regulatory reforms, firms, including mobile network operators (MNOs), have increasingly sought cross-border expansion of their activities. Through such cross-border consolidations, these MNOs, like other MNEs, have often gained competitive advantages that enhanced their market and industry competitive positions and organizational performances. Corrocher and Lasio (2013) posit that, as is tenable in other industries and industrial sectors, international diversity enables MNOs to exploit opportunities for economies of scale and to acquire the critical mass of subscribers needed for sustainable growth. Entering new markets, however, implies additional challenges for the focal firm as it encounters new rivals for the limited available mobile subscribers. Like an airline that aims to fly full capacity in each trip, each MNO is concerned with how to maximally utilize the spectrum capacity allocated to it in each market of operation, informing the scramble for potential subscribers.

Nonetheless, the mobile telecoms industry is currently underexplored in the contexts of cross-border expansion and competitive interactions. As the industry has become a leading global player (e.g., GSMA Intelligence, 2016; ITU, 2015; OECD, 1991), it suffices to gain a deeper and clearer understanding of the investment and competitive behaviors of its players. Also, with their rising importance in the contemporary global business, as the new hotspots for sustainable investment (e.g., Hoskisson et al., 2000), it is very reasonable to integrate emerging-market regions into such scientific explorations. It should be noted, as seen from the literature review, that most of the extant studies relating to cross-border expansion and competition in mobile telecoms were conducted in developed markets, thereby leaving noticeable gaps in the literature. For instance, the investment and competitive behaviors of MNOs in emerging-market regions can only be conjectured from the inferences and findings of the developed-market-oriented studies. Given the obvious institutional and environmental discrepancies between developed and emerging markets, it is both erroneous and misleading to expect the firms operating in the two contexts to exhibit the same investment and competitive behaviors.
Against this backdrop, this study specifically employed Sub-Saharan Africa (SSA) as an empirical setting to investigate the cross-border investment and competitive behaviors of MNOs. The study derives value from SSA’s position as both the world’s fastest growing mobile telecoms region (GSMA, 2017a) and second fastest-growth economic region (e.g., World Bank, 2014; IMF, 2015; EY, 2015). Thus, the adoption of mobile telecoms as the business context and SSA as the locational setting for the study is aimed at throwing additional light into the ongoing debate on the internationalization and competitive interactions of firms, especially given that the two contextual backgrounds have so far been underutilized in empirical academic investigation. Research (e.g., Ferner, Quintanilla, & Varul, 2001; Geppert, Williams, & Matten, 2003; Poulis, Poulis, & Plakoyiannaki, 2013) emphasizes the role of context in extending management research.

The study was underpinned by the overarching research question: How do mobile network operators expand operations and competitively interact across the Sub-Saharan Africa market region? Given the broadness of the topic, four substudies – a literature review and three empirical investigations, each with its own guiding research question – were undertaken for an indepth and a holistic resolution of the main research question. The literature review (Paper I) identified and thematically categorized the extant pieces of work on the internationalization of mobile telecoms, adopting the systematic literature review approach. While paper II (the first empirical paper) anchored in the internationalization framework to investigate how MNOs choose investment locations in SSA, Papers III and IV employed the multimarket competition and competitive dynamics perspectives, respectively, to explore how the firms competitively interact.

The relevance of this study derives immensely from its potential for generating new insights for extending the academic literature, from the perspectives of IB and Strategy. While understandably, there has been growing academic investigations into the activities of firms in foreign markets, evidently, firms in the mobile telecoms industry of Sub-Saharan Africa, such as mobile network operators, have been underutilized in research. Both the region and its mobile telecoms industry have some inherent characteristics that could serve for theoretical extension.

Sub-Saharan Africa is a diverse emerging-market region of 49 distinct countries: the countries have varying market sizes and growth potentials, legal and regulatory systems, ways of doing business, and a wide institutional diversity in terms of culture. Similarly, like the broader global mobile telecoms industry, mobile telecoms in SSA is strictly regulated, with high entry barriers, which explain the high concentration of the industry in most countries. It should be noted that the government in each SSA country, through its telecoms regulatory authorities, places restrictions on the number of MNOs to enter.
the market and how the firms operate. Thus, the mobile operator has no prerogative of its own regarding which country to invest in and how to contend with rivals met therein.

All these, inevitably, impact on the way telecoms firms, in this regard, MNOs, invest and compete. For instance, while the mainstream literature identifies such factors as largeness of market, favorable economic growth potential in terms of national GDP and per capita income, high level of infrastructural development, and openness to business among the major considerations for choice of investment locations, the observed nature of both mobile telecoms and emerging markets are expected to have huge influence on how MNOs invest and compete in SSA. With the huge institutional and structural differences between developed and emerging markets, my position in this study is that it would be very misleading to expect MNOs embedded in the SSA market region to behave the same way as their counterparts in such developed-market regions as Europe and North America, which offers room for a more comprehensive understanding of the internationalization and multimarket competition/competitive dynamics theoretical frameworks that form the basis for exploring the foreign-market behaviors of firms.

The study commenced with a review of existing studies on the internationalization of mobile telecoms, based on which Paper I was developed. This review was very important, given that it enabled the identification of potential gaps that needed to be filled. Thus, the three empirical substudies (Papers II, III, and IV) were undertaken to fill in the identified gaps, thereby complementing the literature on the combined domains of cross-border expansion and competitive interactions of firms in the context of mobile telecoms in SSA. Each of the papers focused on an aspect of the main issue(s) under investigation: while Paper II investigated the investment location choices of the empirical firms, Papers III and IV explored how they competitively interact.

The key findings of each of the three empirical substudies, which combine to answer the main research question of the study, are discussed in the next two subsections. Essentially, the findings of Paper II are highlighted in subsection 5.1, while those of Papers III and IV are addressed in section 5.2. Based on the findings, it is conjecturable that the underlying premise of the overall study that the cross-border investment behaviors of MNOs in SSA may differ from the conjectures of the literature received justification. Obviously, the cross-border expansion and competitive behaviors of the mobile operators in SSA both bolster and contradict the postulations and claims of previous works in the academic literature highlighting the two phenomena.
5.1 Findings on the Cross-border Expansion of MNOs

The findings of Paper II, which are based on the empirical evidence of the observed cross-border expansion behaviours of the multinational MNOs in SSA, provide rich theoretical perspectives for extending the literature in the domain. It is important to note, consistent with the conjectures of the literature (e.g., Clifton et al., 2011; Kim et al., 2009), that the institution of business-friendly and favourable investment climate, through the market regulatory reforms (market liberalization and deregulation, as well as privatization of previously state-owned monopolies) that took place in the various country markets, prompted the cross-border expansion of mobile telecoms in SSA.

The key finding of the paper is that institution-related factors influenced the investment location choices of MNOs in SSA, as they are attracted to country markets having colonial ties with their home countries, as well as those with higher controls over corruption. This finding clearly bolsters the position of the mainstream literature relating to the strong influence of the institutional environment on the investment location choices of internationalizing firms. Experience in international operations was also found to play a very important role in the FDI location choices of the MNOs. Commonly-shared language between the home market of the MNO and its target market(s) in SSA only played a marginal role in the firm’s investment location choices. There is an observed tendency of the telecoms firms to be more attracted to countries in the eastern and western subregions of SSA, relative to those countries in the central and southern subregions. Countries having a higher proportion of their population living in urban environments were seen to be favourite targets for MNO investments.

Obviously, these findings have important implications when related to the views in the literature on the internationalization of mobile telecoms. For instance, contrary to the argument that host country attractiveness, with respect to market or population size and economic power, motivate the telecoms firm to invest (e.g., Chanakira, 2012; Pogrebnyakov, 2007), the observed behaviors of the MNOs in SSA appear to suggest that investment decisions are more influenced by institution-related than demographic and economic factors. Thus, rather than seeking to invest in the more populous countries with stronger economic power, the telecoms firms appear to prefer those countries that share colonial ties with their home countries and having low levels of corruption.

While the possession of previous international experience as a major driver of international diversification among the MNOs in SSA conforms to Pogrebnyakov’s (2007) position, the factor does not play a major role on FDI at the global level. Another important dimension identified by the paper is that MNOs have incentives to locate their investments in certain subregions, considered attractive. This observation clearly bolsters the
position that MNOs, like other firms are region-centric (see Rugman & Verbeke, 2004) in their location of investments (e.g., Clegg & Kamall, 1998; Curwen & Whalley, 2006; Pogrebnyakov, 2008; Whalley & Curwen, 2005). Thus, like the Uppsala internationalization model, whereby firms tend to invest in nearby markets with similar institutional conditions as their home countries, it is expected that MNOs first invest in certain sub-regions considered to be institutionally-close before expanding afar.

5.2 Findings on the Cross-border Competitive Interactions of MNOs

The findings of Papers III and IV also have important implications for the literature on competition in the mobile telecoms industry, particularly from the multimarket competition and competitive dynamics theoretical perspectives. It should be noted that by entering foreign markets, firms are obliged to encounter competitors in their various markets of operation. Thus, cross-border competition be the direct consequence of internationalization. In such a concentrated oligopolistic industry as mobile, the competitive actions undertaken by a focal firm may be easily detected by rivals who may be compelled to launch their own retaliatory responses. It is, therefore, not unusual for MNOs to mimic or replicate the competitive moves of one another, as they enter the same markets as their rivals to become multimarket competitors.

The findings of Paper III clearly reflect this multimarket competitive situation, where firms encounter the same rivals simultaneously on multiple fronts. The findings of the paper reveal that MNOs adopt both oligopolistic-reaction (bandwagon-effect) and mutual-avoidance investment strategies in SSA. Oligopolistic reaction was found to be prominent when considering how the telecoms firms invested at the entire SSA regional level, as well as with respect to the language in which business is conducted. Both bandwagon-effect and mutual-avoidance investment strategies were observed, putting into consideration the origins of competing pairs of MNOs as either indigenous or not to SSA, such as is the case between Airtel and Portugal Telecom (PT) that do not actually meet each other in any country market.

The realization that, at least, some of mobile operators followed each other to market motivated further investigation into the nature of their competitive interactions. Accordingly, Paper IV aimed at exploring the competitive action-response strategies of the firms, with respect to how they respond to the competitive actions of their rivals. The paper found that among several alternatives, that MNOs predominantly employed undercut promotional offer prices and tariffs, and deployment of new technological (network) infrastructure as their main competitive weapons. Another striking finding of this substudy is that the smaller, late-entrant MNOs seeking to boost their subscriber bases
and market shares by encroaching those of rivals (mainly the larger and more established market leaders) happened to be the initiators of aggressive rivalries.

As they would not watch idly while their market shares and subscriber bases are eroded away to the initiators of competitive rivalries seeking to upstage them, the market defenders appear poised to respond to the competitive moves of these perceived aggressors. With Grimm and Smith (1997) contending that competitive responses are predicted by the characteristic nature and payoff of the initial competitive actions that necessitated them, the market defenders applied stiffer responses to the more pervasive attacks with high payoff potentials for the initiators. Such retaliatory countermoves were found to have rather prompted the initiators to unleash further attacks, even more aggressive than the initial, which, as expected, were also rebuffed by the defenders. The ensuing series of attacks and counterattacks eventually led to the protracted multidimensional price wars that are to-date prevalent in the three empirical markets.

The findings of this paper are strongly rooted in the multimarket competition and competitive dynamics literatures. The “follow-the-leader” investment strategy, also known as oligopolistic reaction or bandwagon effect, has been well adopted by firms in various industries (e.g., Knickerbocker, 1973; Ito & Rose, 2002; Gimeno, Hoskisson, Beal, & Wan, 2005; Rose & Ito, 2008). Evidently, oligopolistic reaction has been observed in such industries as airlines (e.g., Baum & Korn, 1996; Borenstein, 1992; Evans & Kessides, 1994; Gimeno, 1999), automobile manufacturing (Rose & Ito, 2008), banking (e.g., Barros, 1999; Pilloff, 1999), hotels (e.g., Fernandez & Marin, 1998), insurance (e.g., Greve, 2008), tire manufacturing (e.g., Ito & Rose, 2002; Rose & Ito, 2009), and telecoms (e.g., Busse, 2000; Gimeno et al., 2005; Parker & Röller, 1997).

The argument that firms counter the successful competitive actions of rivals is also well established in the literature (e.g., Baum & Korn, 1996; Caves, 1996; Chen & MacMillan, 1992; Ferrier et al., 1999; Gimeno & Woo, 1999; Gnyawali & Madhavan, 2001). It is therefore inferable that the observed oligopolistic reaction among the MNOs in SSA is a clear reflection of previously held views among academic scholars. The literature recognizes that firms employ competitive (promotional) pricing, new product innovations, advertising, and international expansion in their rivalries (e.g., Audia, Locke, & Greve, 2006; Caves, 1996; Debruyne, Moenaert, Griffin, Hart, Hultink, & Robben, 2002; Ozcan & Eisenhardt, 2009; Porter, 1980; Smith et al., 2001). Thus, the adoption of new-tech infrastructure, such as the 3G and 4G network platforms, by MNOs in SSA as a competitive tool, beyond what is already known in the literature, offers additional theoretical insights for extending the literature.
It is very interesting to observe that aggressive rivalrous competition in the SSA mobile telecoms industry were triggered by the smaller new-entrant MNO, as it bolsters Chen and Hambrick’s (1995) finding that the smaller airlines in the U.S. were the ones that initiated competitive attacks. The observation that the desire for larger subscriber volumes was the major motivation for the initiation of attacks clearly reflects the literature’s (e.g., Chen & MacMillan, 1992; Ferrier et al., 1999) stance that initiators of competitive aggressions are often motivated by their quest for enhanced competitive positions in the market or industry. Consistent with Chen and MacMillan (1992), being the main targets of the attacks, market leaders were the major defenders. It should be noted that the gains of aggressive attacks are short-lived and thus not sustainable, given, as is the case with the study that some initiators later backed off and tried to return to the pre-attack market competitive situation after having lost in their bids.
6. Conclusion

This study aimed at investigating how MNOs expand and competitively interact across the 49-country SSA market region. With the premise that international diversification enhances the growth performance of firms (e.g., Buhner, 1987; Chan Kim et al., 1989; Daniels & Bracker, 1989; Geringer et al., 1989; Gimeno & Woo, 1999; Kim & Singal, 1993; Tallman & Li, 1996), it was posited that MNOs, like their counterparts in the other industries and regions, have incentives for cross-border consolidations in SSA. The intensification of the telecoms firms’ investments across the regional market was argued to be driven by the difficulty of generating the required critical mass of subscribers for sustainable growth in just one country market, irrespective of how large and profitable. Thus, consistent with the literature (e.g., Johansson & Vahlne, 1977; Luostarinen, 1979; Welch & Luostarinen, 1988), internationalization or cross-border expansion constitutes both a major strategic alternative and an important growth-enhancing strategy for the mobile telecoms firms.

By undertaking FDI in different countries across SSA, there was a strong likelihood for the MNOs to also engage in competition with rivals met in their various bases of operation. Consistent with Porter (1986), such strategic maneuvers are perceived as being the major precursors to cross-border competition among the firms in the regional market. With the underlying assumption that oligopolistic firms enter the same markets as their known rivals (e.g., Knickerbocker, 1973), it was also argued that the fairly-concentrated nature of the mobile telecoms industry would facilitate mimicry of FDI moves among rival MNOs, entering the same markets as their competitors. Thus, consistent with previous research (Gimeno & Woo, 1999; Jayachandran et al., 1999; Karnani & Wernerfelt, 1985; Ito & Rose, 2002; Rose & Ito, 2008; van Witteloostuijn & van Wegberg, 1991), it was further premised that, at least, some of the firms may have engaged each other in multimarket competition, encountering the same rivals simultaneously in multiple markets.

The choice of mobile telecoms and SSA as the empirical bases (business and locational) of the study derived mainly from the low-level attention accorded them, till date, in the academic literature, which makes it difficult to have a full knowledge of the foreign-
market behaviors of firms. Given the specific nature of both the mobile telecoms and the emerging-market region of SSA, it was hypothesized that MNOs may adopt different investment and competitive strategies, relative to those adopted by firms from other industries operating in the mainly developed-market regions, thereby contradicting to the postulations of the mainstream literature. (Note that the services offered by MNOs are very tech-oriented and the mobile telecoms industry itself is very dynamic and highly-regulated.)

Sub-Saharan Africa, on its part, is a very diverse and fast-emerging market region, which is also both extremely dynamic and challenging (institutionally and environmentally). The region’s huge population and rapid economic progress in recent times clearly make it a great location for testing cross-border expansion and competition in mobile telecoms. (It is particularly interesting to note that despite the fast evolution of mobile in SSA, the industry is relatively young and immature, making it possible to track what has happened through its history, such as the cross-border investment and competitive activities of MNOs.) With these observations, there was a strong expectation for the study to generate new interesting perspectives for advancing the literature on the cross-border expansion and competitive interactions of firms.

The objective of the study was to empirically investigate the investment and competitive behaviors of the 16 multinational MNOs in the SSA market region as of 2014, anchored in the internationalization and multimarket competition (by extension, the competitive dynamics) theoretical frameworks. It was premised that the cross-border expansion (internationalization) and competitive interaction patterns of SSA-embedded MNOs may be different from the postulations of the mainstream literature about those of the MNEs in the mainly developed-market regions, due to the inherent nature of mobile telecoms and SSA. The motivation for the study followed the growing socio-economic importance of both the mobile telecoms industry and the SSA to the global economy.

At the global level, mobile telecoms generated more than 4.4% (equivalent to over US $3.3 trillion of economic value) of the global GDP in 2016, projected to 4.9% or an equivalent of US $4.2 trillion by 2020, with an additionally US $450 billion in public funding, while supporting a total of 28.5 million direct and indirect jobs (GSMA, 2017a). Particularly for SSA, mobile contributed 7.7% (US $110 billion) of the regional GDP in 2016, projected to 8.4% (an equivalent of US $142 billion) in 2020, while providing more than 3.5 million jobs (GSMA, 2017b), which is a huge increase over the paltry 0.02% (US $100,000) contribution to the GDP of SSA in 1995 (IFC, 2016). GSMA (2017b) reports that the mobile telecoms industry further generated over US $13 billion in tax revenue to the economy of SSA in 2016.
Beyond voice and text messages, mobile enables other forms of social and financial inclusion to both individuals and firms for enhanced business transactions. Besides, mobile telecoms have provided numerous value-added social services, including MFSs (e.g., m-Pesa in Kenya) and other platforms. In a region where banks and other financial institutions are in inadequate supply in many localities and much of the populace remains unbanked, especially in the remote areas, MFSs have increasingly helped in alleviating the challenges of money transfers, payment of bills, and remittances. Mobile banking has clearly become a common household phrase in most parts of SSA, as it provides social inclusion to the populace. Mobile has further played active roles in such areas as health service delivery (m-Health), education (m-Education), and agriculture (m-Agriculture), thereby making life much more bearable for Sub-Saharan Africans.

Being home to some of the fastest growing economies on the globe (Bloomberg, 2015a), with the rank of the world’s second fastest-growth economic region, after the Asia-Pacific region (World Bank, 2014; IMF, 2015; EY, 2015), and having a strong growth outlook for the future (IMF, 2017; World Bank, 2017), SSA now counts among the hotspots for global investment and thus an engine driving global economic advancement. Especially, with its huge nearly-a-billion population, a fast-growing middle-class economy, improving standards of living, advancements in infrastructural development, as well as the rising demand for mobile telecoms services, mobile operators have more recently increasingly perceived SSA countries as very attractive investment locations.

As already highlighted in the preceding sections, both the mobile telecoms industry and the SSA region are currently underexplored in academic terms, making it difficult to conceptualize how MNOs in the regional mobile telecoms industry expand and compete across national boundaries. It is worth pointing out that SSA currently lags the other economic regions of the world with respect to its low adoption as an empirical basis for academic investigations in management-related research, which, possibly, explains the current low level of understanding about the behavioral patterns of firms embedded in this fast-emerging market region of Africa. This leaves a clear gap in the academic literature, given that gaining a comprehensive knowledge about cross-border expansion and competitive interactions of firms cannot be realized without also adopting the mobile telecoms industry and SSA as empirical contexts. The main objective of this study has, thus, been to contribute in closing this gap, bringing both mobile telecoms and SSA into the ongoing discourse of cross-border expansion and competition.

The key contribution of this study relies on its adoption of the mobile telecoms industry and Sub-Saharan Africa, two currently underinvestigated contexts, to extend the academic literature on the cross-border expansion and competitive interactions of firms.
Basically, by divulging how the major multinational players in such an industry as mobile telecoms, considered to be of strategic importance to the economic advancement of nations and having several idiosyncratic attributes, undertake FDI and competently interact for optimal performance in an economic region that is both very diverse and dynamic and having an institutionally- and environmentally-challenging business environment, this study has made a major departure from what has already been studied about the foreign-market behaviors of firms from the perspective of mobile telecoms in and emerging-economic region.

6.1 Theoretical Contributions

The main theoretical contributions of this study rely on its extension of the academic literature on the cross-border expansion (internationalization) and competition based on mobile telecoms industry. Essentially, while these two topical domains have gained increasing academic attention over the years, as IB and Strategy scholars investigate how firms expand and compete across national borders, focus has predominantly been on those MNEs operating in industries other than mobile telecoms. Equally, much of the the extant studies were undertaken in developed countries, without adequately considering emerging markets. With this, current postulations about the foreign-market behaviors of the firms have been based mainly on the results and findings of the developed-market-oriented studies, leaving us with limited knowledge about how firms embedded in emerging markets undertake their own cross-border activities. By exploring how MNOs invest and competitively interact in the SSA regional market, this study contributes in narrowing this knowledge gap, thereby enriching the literature.

As already pointed out, there has been a growth of interest among scholars regarding the foreign-market behaviors of MNOs. Challenging, however, is that much of those studies have been very focused on the location and entry strategy choices of the firms (e.g., Clegg & Kamal, 1998; Clifton, Comin, & Diaz-Fuentes, 2011; Curwen & Whalley, 2006; Gerpott & Jakopin, 2005; Jakopin & Klein, 2012; Luiz & Stephan, 2012; Pogrebnyakov, 2007, 2008; Pogrebnyakov & Maitland, 2011; Sarkar, Cavusgil, & Aulakh, 1999; Whalley & Curwen, 2005, 2006), with only very few others (e.g., Fernandez & Marin, 1998; Fernandez & Usero, 2009) investigating how the firms compete. As knowledge about how MNOs behave in foreign markets would be incomplete without adequate knowledge about their competitive interactions, this study extends the literature beyond its current limited scope by combining both the dimensions of how the mobile telecoms firms undertake FDI and compete across country markets.
The study has also sought to further expand the emerging-market literature (e.g., Govindarajan and Ramamurti, 2011; Hoskisson et al., 2000; Hoskisson et al., 2005; Khanna and Palepu, 1997; Khanna and Palepu, 1997; London and Hart, 2004; Luo and Tung, 2007; Meyer et al., 2009; Nakata and Sivakumar, 1997; Peng et al., 2008; Ramamurti, 2012; Teagarden, 2012; Wright et al., 2005). Such extension of the literature is a very welcome development, given the present inadequate availability of academic inquiries relating to the MNEs operating in emerging-market regions, which has ultimately resulted in the low-level understanding about the patterns of investment and competition of the firms in such challenging milieux. Thus, much value accrues from using SSA as an empirical setting for investigating how firms in the to-date underserved mobile telecoms industry undertake FDI and compete across the SSA regional market.

The main contribution of Paper I (the literature review paper) derives mainly from its categorization of the previous studies on the internationalization of mobile telecommunications into the “Antecedents-Phenomenon-Consequences” themes, following a systematic literature review. Unarguably, while research on the internationalization of mobile telecoms has assumed an increasing dimension over the years (e.g., Ahmad, 2014; Clifton et al., 2011; Curwen and Whalley, 2006; Fernandez and Usero, 2009; Jakopin and Klein, 2012; Nicolaides, 1994; Pogrebnyakov, 2007; Wymbes, 2002), the literature has so far been fragmented, thereby making it difficult to know what has already been studied and what remains to be explored. With the thematic categorization of the extant studies, considering the “Antecedents” (drivers), “Phenomenon” (explanation of the process), and “Consequents” (outcomes) of internationalization of mobile telecoms, one can now better appreciate those previous studies. Thus, this first study provides a guide for future research, as it makes it much easier for prospective researchers to know where to focus their studies and in what areas to make contributions.

Each of the three empirical studies (Paper II, Paper III, and Paper IV), focusing broadly on exploring either the investment or competitive activities of the MNOs embedded in the SSA market region, also offers its own contributions to theory. Paper II advances the internationalization literature, whereas Papers III and IV extend the multimarket competition and competitive dynamics theoretical perspectives respectively. Specifically, Paper II contributes to the internationalization theoretical framework by investigating the investment location choices of the empirical firms. The key finding that institution-related and historical factors – level of corruption and colonial ties – respectively, mainly influence the choices of FDI locations among MNOs in SSA is very interesting, given that it counters the mainstream literature’s postulation regarding country economic factors, including mainly GDP growth and per capita income, as the major determinants of the investment location choices of internationalizing firms.
Paper III investigates how the multinational MNOs in SSA competitively interact with rivals, paying attention to their multimarket-competition and oligopolistic-reaction strategies. The observation that the telecom firms adopt both oligopolistic-reaction and mutual-avoidance strategies in their competitive rivalries is particularly important, as previous studies in this domain have found little evidence of mutual avoidance among competing pairs of firms, thereby making a very useful theoretical contribution. Finally, Paper IV studies how the MNOs competitively interact with each other, bearing on their adopted competitive actions and responses. The major findings that the firms mainly adopt competitive promotional pricing and the introduction new technological (network) infrastructure as the predominant strategies or weapons and that the late-entrant smaller operators are the initiators of aggressive rivalrous competition make additional important theoretical contributions.

Evident from the foregoing is that the three empirical substudies have mixed views vis-à-vis the conjectures of the mainstream literature on internationalization and cross-border competition. While the major findings of Papers II and III clearly differ from those of previous studies in their respective domains, Paper IV rather lends support to the findings of the extant works on the competitive action-response strategies of firms. The observed nuances between the findings of the substudies and those of the extant literature should be expected, given particularly the wide institutional and environmental discrepancies that exist between developed markets and their emerging or developing counterparts (e.g., Ghemawat, 2007; Guillén & Garcia-Canal, 2009; Hitt et al., 2000; Hoskisson et al., 2000; Khanna & Palepu, 1997; Meyer, 2004). Noteworthy is that whereas the institutional environments of developed-market regions, upon which much of the arguments of the extant IB and Strategy literatures were built, are strong and well established, vis-à-vis those of emerging market-regions, typified by SSA (the locational basis of this study) are very weak and poorly founded. Thus, firms embedded in any emerging region would be expected to adopt varying context-specific strategies, contingent upon the nature of the focal country market in which their businesses are located.

It is important to recall that this research was fundamentally motivated by the premise that much of the current knowledge about the investment and competitive behaviors of MNEs were derived from research conducted solely in developed markets, and that consistent with some authors (e.g., Chittoor, 2009; Guillén & Garcia-Canal, 2009; Madhok & Keyhani, 2012), the findings of such developed-market-oriented investigations only offer biased views about how firms located in emerging markets actually behave. Since the theories for grounding such works were also based on the observed behavioral patterns of the developed-market-embedded firms, a major concern for management schol-
ars should then concern the efficacy and effectiveness of the extant management theo-
ries and theoretical frameworks in conceptualizing the cross-border investment and
competitive behaviors of firms operating in emerging market-regions.

This issue has been a matter of long-standing academic debate, with clearly several differ-
fing schools of thought, of which, one group (e.g., Narula, 2006), for instance, simply
claim that current theories and frameworks are adequate for all categories of firms and
markets. Some scholars (e.g., Gammeltoft, Barnard & Madhok, 2010; Gaur & Kumar,
2010; Girod & Bellin, 2011; Mathews, 2002; Ramamurti, 2012), on the contrary, argue
that the prevalent theories are simply inadequate and thus should be modified or over-
hauled for a better understanding of the behaviors of different categories of firms in
different locational contexts. Finally, there is a third school of thought (e.g., Aharoni,
2014; Chittoor, 2009; Luo & Tung, 2007), which adopts a more radical stand, contend-
ing that as theories get old with their applicability waning, entirely new ones that are
both contingent upon and specific to the context being explored must be developed.

With the observed specific nature of the mobile telecoms industry, relative to other indus-
tries and sectors, the institutional and environmental differences between developed-
and emerging-market regions, as well as the inadequacies of the extant theories in fully
explaining the behavioral patterns of different firm categories in different contexts, it
would suffice to device a suitable theoretical approach to advance academic knowledge.
Following the argument that theories may become obsolete in a changing world (e.g.,
Aharoni (2014), I strongly advocate the adoption of existing management theories
where and when appropriate and, possibly, modifying them when necessary to provide
a better and more comprehensive understanding of phenomena. Thus, the develop-
ment of new theories would only be necessary in the event of the failure of the extant ones
and their possible extensions. Put more succinctly, the extant management theories need
not be thrown away in their entirety, but should rather be modified to accommodate new
groundbreaking research scenarios.

Overall, this study gained impetus through its adoption of two currently underseved
areas of importance to IB and Strategy – the mobile telecoms industry and Sub-Saharan
Africa – as the business and locational contexts. The literature (e.g., Chittoor & Aulakh,
2015; Luo & Tung, 2007; Meyer, 2007) has demonstrated that the adoption of new em-
pirical contexts for exploring business phenomena provides room for broadening man-
agement research. Particularly, studies (e.g., Burgess & Steenkamp, 2006; Hoskisson,
et al., 2000; Griffith et al., 2008; Hitt et al., 2000; Kostova et al., 2008; London & Hart,
2004; Peng et al., 2008; Ramamurti, 2004; Wright et al., 2005) have posited that the IB
and Strategy literature(s) could be extended with empirical evidence from emerging
markets. Unarguably, there is value in investigating the investment and competitive behaviors of firms (in this case, MNOs) in such a relatively new industry as mobile telecom in such an institutionally-challenging setting as SSA. This is justifiable through the useful theoretical extensions made possible by this study, considering essentially its several nuanced findings, relative to the postulations of the extant literature.

### 6.2 Managerial Implications

Beyond making academic or theoretical contributions, research should be expected to also have useful managerial or practical implications to be more impactful. This study investigated the combined phenomena of cross-border expansion and competitive interactions of MNOs in SSA. While the findings of the various substudies offer important perspectives for theoretical extensions, as discussed above, they also provide useful knowledge for MNO managers and strategists – both those whose firms are already active in the country markets of SSA and those that are yet to commence operations in the region. The findings of the study should also be useful to the management of MNOs embedded in other emerging-market regions.

Paper I opened the way into the academic inquiry by investigating the factors that typically drive the investment location choices of the telecoms firms (MNOs) into foreign markets, the entry strategies mostly adopted by the firms under different institutional and environmental situations, and the impact of internationality on their performance. Such, rather, holistic information, which emanated from the analysis and thematic categorization of the extant scholarly works in the domain of internationalization of mobile telecoms, have been availed to MNO managers courtesy of this study. For instance, the managers would more easily make decisions on their firms’ FDI locations, as well as the most appropriate entry timing and strategies to adopt.

Paper II provided an understanding about how MNOs have internationalized across SSA over the past three decades since the take-off of the region’s mobile telecoms industry. Through the study, MNO managers are expected to gain insights about what the incumbent multinational operators have done in the cause of their cross-border expansion. As a result, decisions around such issues as which markets to choose for investment and the appropriate entry strategies to adopt would be much easier to make than in previous times. For instance, based on the findings of the paper, it has become evident that MNOs place more emphasis on institutional considerations (including colonial ties and higher control over corruption), relative to economic factors (such as market size or spending power) in their choices of FDI locations. The substudy further suggests that MNOs have preference for collaborative market entry strategies in SSA over WOS investments.
Similarly, Papers III and IV offered knowledge about the manner of competitive interactions among the mobile firms. Paper III, particularly, suggests evidence that the investment decisions of some of the telecoms firms in SSA are driven by oligopolistic reaction or bandwagon effect, albeit some of them prefer the mutual-avoidance strategy. Finally, through Paper IV, it is evident that the successful (performance-enhancing or competitive-advantage-generating) competitive actions or moves undertaken by a focal MNO is likely to be rebuffed by rivals, who see such as threatening and thus launch their own competitive responses or countermoves. Of value, also, is to watch out for the late-entrant small MNOs, who happen to be the major market disrupters and initiators of competitive attacks, as well as to recognize that price undercutting in the form of promotional tariffs is the most prevalent competitive weapon employed by rival firms.

6.3 Research Limitations and Future Roadmap

As much as this study has offered useful insights for a clearer, better, and more comprehensive understanding of the investment and competitive activities of firms in the mobile telecoms industry, based on the empirical evidence about the behaviors of MNOs in SSA, it is still limited both in time and scope. As seen from the previous subsections, the study has made a good number of findings, reflecting the manner the telecoms firms have, over the decades, chosen their investment locations in the region. The nature of competition and competitive rivalries among MNOs was also explored in the cause of the study. Challenging, however, is that while these findings clearly contribute to the academic literature on the combined domains of internationalization and cross-border competition, the study is limited by timeframe and extent of coverage.

It is important to point out that several new investment and disinvestment moves have been made in the region beyond 2014, which was the time limit of the substudy on cross-border expansion of MNOs in SSA. For instance, the Vietnamese mobile operator, Viettel, now has active operations in Cameroon, Uganda, and Tanzania. Also, following its dismal performances, the Indian operator, Airtel, has, as of 2016, sold off its operations in Burkina Faso and Sierra Leone to Orange, while plans are underway to possibly withdraw from as many as 15 countries in the region, including its largest SSA regional market base, Nigeria. Furthermore, Etisalat parted ways with its Nigerian partner, Emerging Markets Telecommunications Services (EMTS) Limited, rebranding into 9Mobile Nigeria. All these are clear pointers to the high dynamism of the mobile telecoms industry in the emerging-market region of SSA.
Another major limitation of the study, with respect to scope, relates to its focus only on the SSA regional market. Even though emerging-market regions have some shared similarities, they still have numerous dissimilarities, with respect to their varying business and institutional environments. To this end, firms are expected to behave differently depending on the locational context in which they are embedded. MNOs operating in either the Latin America or Asia-Pacific region, for instance, are expected to exhibit some context-specific behaviours that are different from those located within SSA. Thus, as some of the findings of this study may only be specific to the SSA region, it would be erroneous and misleading to just draw conclusions about the behaviours of MNOs in other emerging-market regions based on this study alone. It would rather be more valuable to conduct a similar study in each of the other emerging-market regions to gain more insights that would lead to broader generalizable conclusions.

Furthermore, while the study highlights how MNOs expand and compete across SSA, it fell short of addressing the impact of engaging in such multinational activities on the performances of the firms. It should be noted, for instance, that while some scholars have posited that international diversity or multinationality enhances the financial performance of firms (including MNOs), many others contend that operating in multiple country markets comes with numerous risks and heightened competition, which could be detrimental to growth. Thus, as the multinationality-performance linkage, relating to degree to which expanding operations into and competing in multiple countries affects the growth performance of the firm, remains a vital issue among IB and strategy scholars, this study would have gained more value by delving into such an area that is so far underexplored in the context of mobile telecoms and emerging markets.

As a way forward, therefore, future research should aim to address the foregoing important issues, which currently constitute major gaps in the literature that need filling. Such studies should be more inclusive by going beyond SSA to embrace the mobile telecoms industry in other emerging-market regions. By so doing, some new context-specific insights are expected to emerge, based on which the present understanding of the investment and competitive behaviours of mobile telecoms firms could be extended. Such would further lead to the extension of the internationalization and multimarket competition/competitive dynamics theoretical frameworks from the perspectives of the mobile telecoms industry and emerging-market regions – two contexts that are currently underserved in empirical academic research.
7. References


Bose, I., Celley, N. (2011). *The Indian Tiger Prowls in Africa: Bharti Airtel's Acquisition of Zain Africa*. Asia Case Research Centre, University of Hong Kong.


