

*Full Length Research Paper*

# Competitive action-response strategies of mobile network operators in sub-Saharan Africa

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**Mobile telecommunication firms have increasingly found Sub-Saharan Africa to be a favorable location for business and investment. We explore the competitive actions and responses of the multinational MNOs in three of the leading sub-regional markets: Kenya, Nigeria, and South Africa based on the conventional content analysis of online-sourced data from the time the first major competitive move was made in each market until 2015. Our findings suggest that smaller, later-entrant operators seeking enhanced subscriber bases and competitive positions often initiated competitive rivalries. Defensive responses from mainly the main market leaders only resulted in further attacks, with response speed and intensity depending on the pervasiveness of the initial attack and firm strategy. The ability to preempt rivals' potential moves offered a competitive advantage whereas price undercutting, new technologies and government protection served as the main competitive weapons. Neither the initial attackers nor market defenders emerged as the absolute winner in the aggressive competitive rivalries, which also negatively affected the subscribers.**

**Key words:** Competition, Competitive rivalries, Actions and responses, Mobile network operators (MNOs), Sub-Saharan Africa.

## INTRODUCTION

Global System for Mobile Association (GSMA, 2017) reports that Sub-Saharan Africa (SSA<sup>1</sup>) has consistently been the world's fastest-growth mobile telecom region over the past few years, in terms of both SIM (mobile) and unique subscriptions<sup>2</sup>, which is attributable to improving economic conditions and rising affordability of mobile services. Tagged the world's fastest-growth regional market (Robb and Paelo, 2020), the fast

penetration of mobile telecommunication (telecom) in SSA has been mainly attributed to the improving economic situations fostering a fast-growth middle-class economy, falling device prices, and rising affordability. The multi-purpose usage of mobile phones for calling, text messaging, social networking, and similar internet-related activities has also heightened the demand for mobile services in SSA. Accordingly, mobile network operators (MNOs<sup>3</sup>) have increasingly sought to invest and do business in SSA to exploit the availability of the

<sup>1</sup> SSA comprises a total of 49 African countries, including the 43 mainland countries lying below the Sahara Desert and six island countries in both the Atlantic and Indian Oceans

<sup>2</sup> Note that SIM (mobile) subscriptions refer to the number of SIM cards in use, while unique subscriptions denote the number of individually registered mobile phone users.

<sup>3</sup> An MNO is a telecom firm that owns and controls both radio spectrum licenses and the network infrastructure capable of delivering wireless voice and data communications to subscribed users.

large mobile-hungry market. Several of the firms entered and commenced operations in the region for international consolidation and sustainability. With its status as the world's most untapped regional mobile market, having the least mobile penetration (45%) and 5G adoption (3%) (GSMA, 2020), SSA has become a very attractive investment location for MNOs – with the perception that it offers a strong potential for enhancing their growth and broadening the future sustainability of the wider telecom industry.

With the underlying assumption that competitive advantages and enhanced performances accrue from taking competitive initiatives or exploiting first-mover advantages (Rehman and Al-Raqom, 2020; Lieberman and Asaba, 2006), some of the MNOs are incentivized to become the first to enter new markets, launch new products or innovations, or introduce competitive prices. Yet, as value is derived by countering the competitive moves capable of arrogating prolonged competitive advantages to others (Hsieh and Hyun, 2016), rival MNOs tend to have the obligation to respond to such actions. The two opposing standpoints often spur competing firms to engage in aggressive rivalries, as they seek dominance in their commonly-shared industry or market space.

As interfirm rivalry is central to firm strategy and performance (Zhang, 2017; Kilduff, 2019; Luoma et al., 2020), there has been an explosion of interest among academic scholars seeking a deeper understanding of industry competitive dynamics. However, such studies had traditionally focused on the more mature industries in the developed market regions, including airlines (Albers and Heuermann, 2013; Ciliberto and Williams, 2014); automobile manufacturing (Rose and Ito, 2008), banking (Stiroh and Strahan, 2003), hotels (Wang, Tsai and Fu, 2022; Li and Srinivasan, 2019), insurance (Schimmer, 2012), mobile telecommunication (Robb and Paelo, 2020), software (Iansiti and Lakhani, 2020). Due to this insignificant attention, comprehending the competitive behaviours of rival firms in the new or newly-emerging industries in the less-developed regional markets has often been difficult, creating an academic challenge that needs to be solved.

Against this backdrop, we adopt Sub-Saharan Africa (SSA), as a geographic context to investigate the competitive interactions of MNOs, considering how they initiate and respond to competitive actions. With the rapid growth and outstanding contributions of the mobile telecom industrial subsector in the economic growth of SSA over the past few decades (GSMA, 2017), we see a need to explore the action-response competitive interactions of the MNOs that are embedded in the

region.

Our research has implications for both academic theorization and managerial practice, as well as for policy implementation. By creating new insights relating to how rival MNOs initiate and respond to competitive attacks, we advance the competitive dynamics literature from the perspective of the mobile telecom industry. With SSA as the locational context, our effort has the potential to generate nuanced insights to complement the findings of the extant developed-market-focused research efforts. MNO managers and strategists are expected to convert the new theoretical insights into a practical resource that could be utilized when dealing with rivals. The findings of the paper also have potential value for policymakers and industry regulators, who could adopt them in enhancing the extant standards for industry and market competition in mobile.

We set the theoretical background of the study in the next section by reviewing the literature on competitive dynamics, with an emphasis on competitive actions and responses. This is followed by the materials and methods section where we explain our data collection process and the adopted technique for the data analysis. Finally, we review the findings and put them in the context of the overall research before concluding and offering suggestions for future research in the domain.

## THEORETICAL BACKGROUND

### Competitive dynamics framework

Firms in the same market or industry competitively interact, engaging in competitive actions (attacks) and responses (counterattacks) as a strategy for improving their performances or defending their competitive positions overtime against rivals (Li et al., 2010). This is summarized in Chen and Miller's (2012) submission that dynamism, interactivity, and action-response dyads are the three main building blocks defining the framework of competitive dynamics. An action is any observed move made by a firm to defend its current competitive position or to attain a new one, whereas a reaction is a corresponding response by a rival firm (Smith et al., 2001; Kilduff et al., 2016). Through engaging in competitive actions and responses, rival firms act creatively to develop competitive advantages (Smar et al., 2021). Entry into new foreign markets, new product introductions or advertisement campaigns, changes in pricing policy, deployment of new technologies, and relocation or redesign of facilities are among the key competitive weapons often adopted by rival firms in a

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market or an industry (Rehman and Al-Raqom, 2020).

Previous research has shown that a performance-enhancing action undertaken by a firm can trigger reactions from its rivals (Kilduff et al., 2016; Zhang, 2017). Such competitive responses should naturally be more expected if the initial attack is capable of altering the competitive *status quo* by way of jeopardizing the rivals' market shares or displacing them from their present competitive positions (Smar et al., 2021; Keil et al., 2013). Against this backdrop, firms in the same market or industry should be most aware of each other's competitive moves (Kilduff et al., 2016), so as to be ready to take retaliatory actions if attacked. Oligopolistic reaction, which refers to the tendency of firms to follow rivals' investment and competitive moves, could therefore be an established reason for inter-organizational mimetic behaviour (Gardberg et al., 2017; Dike and Rose, 2019).

The competitive dynamics framework is generally concerned with both the firm initiating the competitive rivalry and the responding rival firm. Smith et al. (2001) identify magnitude (size), scope (broad/narrow) and type (temporary/tactical or strategic) as three attributes of a competitive attack that must be considered before a rival could launch a response. An action requiring high financial or resource input to implement could be described as being of high magnitude while one that affects multiple rivals is considered to be more threatening than that that has an impact on just one rival (Hsieh and Hyun, 2016). A strategic attack, the one capable of creating a long-lasting impact, should be of more concern to rivals than a tactical attack aimed at realizing a temporary competitive advantage. The ultimate effectiveness of every competitive action is rather on the nature of the responses posed by the defenders. The likelihood of a rival to respond and the frequency and timing of such responses are among the attributes of competitive reaction considered important for the competitive dynamics model. An attack that requires a longer response time has the potential to yield a greater competitive advantage (first-mover advantage) to the initiator and is, thus, expected to attract more responses (Hsieh and Hyun, 2016).

Moreover, the nature of an attack influences the likelihood of rival responses (Hou and Yao, 2022; Kilduff et al., 2016). The potential impact of an attack on rivals' performances and the strategic importance of the attacked market are among the other issues considered by rivals before responding to a competitive action (Hsieh and Hyun, 2018; Li et al., 2010). Essentially, an attack that took less time and resources to plan and execute may trigger swift responses, especially if launching a response does not pose any major disruptions to the responder's competitive position (Hou and Yao, 2022). Such an attack may not create worry to rivals. On the contrary, a pervasive attack, the type that significantly threatens rivals' performances and competitive positions, tends to attract fierce responses (Kilduff et al., 2016; Keil

et al., 2013), especially if undertaken in a market that is of strategic importance to the rivals (Sengul and Dimitriadis, 2015). Given the huge number of resources and the longtime requirement for their planning and implementation, competitive attacks undertaken in key markets often attract fewer and slower responses (Hsieh and Hyun, 2018; Iriyama et al., 2016). Such attacks that attract long response lag tend to offer long-term sustainable competitive advantages to the firms that initially launched them (Assala et al., 2021). As such, an attack of such nature constitutes a major source of worry to rivals.

A competitive attack capable of sustaining competitive advantages and enhancing organizational performances minimizes rivals' incentives to respond and maximizes response lag (Hou and Yao, 2022). Such impactful and sustainable attacks should be stealthy, complex, and oblique (or indirect) (Kilduff et al., 2016). It is important to note that, as one rival responds to a competitive attack, others may be compelled to join the fray, creating a "snowball effect", thereby diminishing the supposed competitive advantage accruing to the initial attacker (Hsieh and Hyun, 2018). Some studies suggest that real incentives could also accrue from adopting the avoidance and nonresponse or "do nothing" strategy (Andrevski and Miller, 2022). In general terms, the ability to respond to a competitive attack depends on the awareness, motivation, and capability of the responder. A rival can only respond to a competitive attack only if it is aware of such an attack, motivated to react to it, and capable to do so (Qi et al., 2023; Gao et al., 2017).

While some rivals respond promptly to certain competitive attacks, strategically signalling their readiness to fight back in the case of further actions (Kilduff et al., 2016; Assala et al., 2021), others, especially the larger and more organizationally complex firms, prefer to tread cautiously and respond slowly to competitive attacks (Kilduff et al., 2016; Assala et al., 2021). Rivals hardly respond to competitive moves that were not targeted at them or do not seem to create any harm to their competitive positions (Kilduff et al., 2016; Hou and Yao, 2022).

Understanding the actions and responses of rival firms would have strong implications for firm strategy (Smar et al., 2021). Initiating competitive attacks enhances performance (Sengul and Dimitriadis, 2015); albeit some studies (Hou and Yao, 2022) caution that a competitive attack that triggers multiple intense responses may be detrimental to performance. In the same vein, (early) responders to competitive attacks have a higher likelihood of better performance, relative to non-responders (Hou and Yao, 2022; Andrevski and Miller, 2022; Zenaide and Castro, 2015). The expectation of retaliations from rivals should be an important element to be considered by the firm initiating a competitive rivalry (Assala et al., 2021).

## MATERIALS AND METHODS

### Research design

Being home to some of the world's fastest-growing economies and with some major regulatory improvements in the business environment in recent times, Sub-Saharan Africa (SSA) has become the toast of many investors, including those in the mobile telecom industry, and has been adopted as the geographic setting for this study.

The adoption of Sub-Saharan Africa as the geographic context for the study derives from the great value the region offers, given the rapid uptake of mobile services that has continued unabated over the past three decades that has offered incentives for MNOs to invest and do business (form articles). In addition to providing the most preferred form of telecommunication services to the people, mobile devices offer an easy replacement for computers in the region, where low income and abject poverty drastically minimize affordability (GSMA, 2017). The three countries – Kenya, Nigeria, and South Africa – employed as the empirical settings for this study are of very strategic importance to mobile telecom business in SSA, given their relatively large populations and market sizes, strong economic growth potentials, rising income bases and purchasing power, and openness to competition for the delivery mobile services that enhance the propensity of investment in the subsector. Without a doubt, the three countries are among the major flourishing grounds for mobile telecom business in the region and, thus offer a sound contextual basis for exploring competitive rivalries among mobile operators (MNOs).

With respect to Kenya, the three MNOs that actively delivered mobile telecom services at the time of this study are Airtel, Orange, and Safaricom. Safaricom, which has maintained leadership in the East African market (66% share in 2015) was officially launched in 2000 as a 60-40% shareholding arrangement between the government of Kenya and Vodacom (Vodafone). Airtel, the second largest operator (27% market share in 2015 with 8% from Yu-Mobile<sup>4</sup>), was launched in 2010 as part of the landmark entry of Bharti Airtel India into SSA (Note that Airtel on entry in 2010 acquired Zain, which previously acquired Econet Kenya). Orange (France Telecom), with a 12% market share in 2015, started operations in 2008 after acquiring 51% shares in Telkom Kenya. With the authorities allowing full competition, the Kenyan mobile market has been one of the most hotly contested in SSA, with Safaricom clearly ahead of the catch-up Airtel and Orange.

Considering Nigeria's dominant population in the SSA economic region, mobile operators from near and far have increasingly sought to get a share of its mobile-hungry market. The four MNOs with active operations in the country as of the time of this study include Airtel, Etisalat, GLO, and MTN. Airtel, having 20% of the market share in 2015, made entry into the country in 2010 as part of its spectacular mass-market entry into SSA through the acquisition of the operations of Zain Nigeria. Etisalat, with a 15% share of the market as of 2015, commenced operations in 2008, while GLO (the second market leader with a 21% share in 2015) was launched as an indigenous operator in 2003. The market leader, MTN, which had a 44% market share in 2015, made an entry into the Nigerian mobile market in 2001, whereas Smile, the latest entrant and smallest operator, launched operations in 2013.

The South African mobile telecom industry had historically had a highly-concentrated structure, with the domination of the duopoly of Vodacom (Vodafone has a 65% stake in Vodacom) and MTN – both launched in 1994, until the emergence of Cell C in 2001 and Telkom Mobile in 2010. (Note that 8ta: the mobile arm of Telkom and South Africa's smallest MNO with just 2% market share in 2011). The market leader (Vodacom) and the runner-up leader (MTN) have persistently accounted for a combined 90% share of

the market right from inception.

### Data collection

The data collected for our study pertain to the competitive interactions of the MNOs embedded in Kenya, Nigeria, and South Africa, spanning from the time the first rivalrous competitive move was made in each. As the companies vied vigorously for larger market shares to enhance their competitive positions, the intensity of competition peaked in 2015, hence; we limited our search to the year. Accordingly, our data spanned 2010-2015 for Kenya, 2003-2015 for Nigeria, and 2012 to 2015 for South Africa. We chose the different time spans depending on the year a major competitive attack was launched in the focal market.

With most SSA countries having been already saturated with MNOs at the time of this study, it can be argued that the mobile firms in the region no longer compete based on cross-border diversification. Besides, market entry is commonly perceived as a one-off process, with an MNO most likely to enter a country but once. The likelihood of re-entering a certain market is also very low. For instance, no MNO has ever re-entered any market in SSA. For the study, therefore, we ruled out the possibility of MNOs adopting cross-border entry as a weapon of competitive attack.

We sourced the data, relating to the competitive interactions – actions and responses – of the MNOs in the three selected countries, from online articles including newspapers, magazines, and industry journals, as well as from the websites of the various firms. A total of 74 such articles were found to be relevant, based on the suitability of their contents to the topic under investigation, and thus included in the study. Of this number of articles, 28 relate to the Kenyan mobile telecom market, 22 to Nigeria, and 24 to South Africa. It is important to note that there were multiple duplicated reports on the same issue in each country, owing to the availability of many media outlets. To avoid multiplication of evidence, therefore, we scrutinized the different versions of each report and selected the one that most elaborately and convincingly described the situation.

### Data analysis

We employed the conventional content analytic approach; whereby coding categories are derived directly from the textual data, consistent with Gaur and Kumar (2018). We gained immersion and got the whole picture by first perusing all the articles (data), highlighting the words in the text that appear to capture the key thoughts and concepts relating to the study (Drisko and Maschi, 2016). Then, we sorted the emerging codes into categories, paying attention to their relationships and linkages. In the first category, we grouped related excerpts from all the documents into mutually exclusive groups, consistent with Bowen (2008). Similarly, the second category comprises the emergent themes from grouping related excerpts formulated in the first category (Drisko and Maschi, 2016). Eventually, we produced four themes: initiators of competitive attacks and their motives, nature and intensity of competitive responses, adopted weapons of competition, and winners and losers of aggressive competitive rivalries. These themes are discussed in the next section.

## RESULTS

### Competitive dynamics in the Kenyan market

The first major competitive attack in the Kenyan mobile telecom market occurred in 2010, when Bharti Airtel, on

<sup>4</sup> Airtel acquired YuMobile in 2014

entry, launched its competitive “minute factory” package (Wahome, 2010). (Note that Airtel acquired Zain in October 2010.) Based on the parent company’s low-tariff, mass-market strategy for generating economies of scale, Airtel Kenya made a 75 per cent cut on all voice calls on both local and international networks. Per minute on- and off-net charges were slashed to KES3.00 (100 Kenyan Shilling exchange for 1USD) from the previous KES8.00 and KES12.00 rates while mobile termination rate (MTR, referring to the per minute fee MNOs charge for carrying calls onto each other’s networks) was halved to KES2.21 per minute.

With the view that Airtel’s and Yu’s competitive actions, if unchecked, would jeopardize their own performances, rival Safaricom and Telkom Kenya were compelled to retaliate (Kemibaró, 2010; Childress, 2011; McLeod, 2011). Safaricom promptly lowered its service charges, bringing the charge for on-net calls between customers to KES3.00 and that for off-net calls to KES4.00. The resulting sharp falls in mobile tariffs due to the price wars, which heightened the affordability of services but reduced the monthly average revenue per unit (ARPU<sup>5</sup>) to KES349 in 2011 from the previous KES389 in 2009, benefitted the end-users (Rice, 2010; 2010, Nyabiage, 2011a) but threatened the survival of the operators and industry (Nwambura-Mwaura, 2010; Miriri, 2011; Nyabiage, 2011b). Feeling challenged by Safaricom’s reaction, the undeterred Airtel launched more attacks that aggravated the already tense competitive atmosphere, leading to more aggressive competition.

Safaricom took the competitive rivalry beyond mobile voice calls and text messaging by slashing its Internet access charges (Wafula, 2010), a move Airtel responded to by cutting the prices of modems for its customers (Mutegei, 2012). As TeleGeography (2008) noted, Safaricom’s first launch of the 3G network in Kenya in 2008 did not immediately trigger a competitive rivalry, since it took Orange until 2011 (TeleGeography, 2011) and Airtel until 2012 (IT News Africa, 2012), respectively, to launch theirs. Safaricom further proved its technological supremacy with its roll-out of the first-ever 4G network in the market in 2014, with both Airtel and Telkom Kenya only launching theirs in January 2017 (CapitalFM, 2017; TechMoran, 2017). Table 1 summarizes the competitive dynamics in the Kenyan mobile market.

### Competitive dynamics in the Nigerian market

The first major shakeup to the status quo of competition in the Nigerian mobile market occurred in 2003 when GLO<sup>6</sup> launched its low-cost “Pay-per-Second” and “Text-

to-Email” packages (Nweke, 2003). The mobile operator also introduced a SIM pack offer that included ₦1,998 (₦319 exchange for 1USD) airtime credit and a ₦1.00 SIM card. International call rates were slashed by 50%, with free SMS messages to GLO network subscribers and a free GLO MMS (multimedia messaging service) and GLO Mobile Internet (ITU, 2004). The MMS offers allowed subscribers on the GLO network to send pictures, texts and sounds freely in a single message while also providing opportunities for browsing popular websites like Yahoo, Google, and BBC on phones using the GLO Mobile Internet.

In an apparent response to GLO’s move, MTN launched its own per-second billing and the “MTN Flexi”, offering a flat tariff of 80K per second for on-net calls and a ₦750 recharge card halving the prepaid monthly tariff (Ajakaye, 2003). Etisalat followed suit and unveiled its repackaged and reloaded “Easy Starter” and “Easy Cliq” offers (NCW, 2009; Terry, 2011), with Airtel (then a new entrant) also announcing its own offer that crashed call rates to ₦9 per minute in the bid to boost its subscriber base (Uzor, 2010). The competitive rivalries further escalated with MTN rolling out its “Magic Number” package in 2011, in conjunction with the “MTN Talk-On” and “MTN Family and Friends” offers (Nweke, 2011), whereas Airtel launched its flexible “2Good Time” data and voice offer package in 2012 as a further response to GLO’s initial attack (Oladipo, 2012).

GLO jolted the market further with the announcement of the new “GLO Infinito” package, allowing subscribers to pay only 25K per second for all calls made on all networks in the country (including those of its rivals), irrespective of the time of the day. As voice revenues declined, the competitive battlefield gradually shifted to data, as the MNOs strove to satisfy customer needs and maintain market share and competitive positions (Fakorede, 2016; Nwogbo, 2016). Following the rivalries, the price of SIM cards fell tremendously from the exorbitant ₦40 000 per SIM in 2001 to become a commodity obviously extended freely to customers. With the sharp falls in tariffs, ARPU also dropped significantly from as high as ₦1800 in 2000 to ₦1000 by the end of 2012.

Despite the strong countermoves from rivals, GLO went ahead with its aggressive competitive campaign to become the first MNO to launch the 3G network platform in Nigeria in December 2007 (Sun News Publishing, 2007), a move MTN promptly countered by launching its own 3G network in the same month (TeleGeography, 2007). Following these moves, Etisalat deployed its EasyBlaze 3G network in 2011 (Tekinuzu, 2011) while Airtel rolled out its 3.75G network technologies in 2012 (The Nigerian Voice, 2012). The near-simultaneous launch of the 4G LTE (Long Term Evolution) network in the Nigerian market is rather interesting: MTN rolled out the new network platform on 05 October 2016 (Okafor, 2016), with GLO launching its version of the same technology on 06 October 2016 (Business Journal,

<sup>5</sup> ARPU is derived by dividing the total revenue of the MNO by the number of subscribers. Its importance is that it provides a breakdown of what drives revenue and gives some indications of what drives margins.

<sup>6</sup> GLO Mobile, being an indigenous Nigerian firm exploits government’s protection and customer patronage at the expense of its non-indigenous rivals.

**Table 1.** The competitive situation in Kenya.

Rival MNOs	Initial attack	Rivals' responses	Further attacks and responses	Market share % (2010)	Market share % (2015)	Pre-attack market position	Market position (2015)	Remarks
Airtel	2010: All voice calls tariffs cut by 75%; 50% cut on MTR		2012: Price of 21 Megabyte per second (MBs) modem reduced to KES1999 from KES4500; that of 7.2 MBs modem halved to KES999 2012: Launched 3G network 2017: 4G rolled out	10	19	2 <sup>nd</sup>	2 <sup>nd</sup>	Gained market share, but the market position remained unchanged
Orange			2011: 3G rolled out 2017: 4G launched	4	12	4 <sup>th</sup>	3 <sup>rd</sup>	Gained both market share and position
Safaricom		2010: First to react— tariffs for on-net calls between customers lowered to KES3; off-net calls to KES4 2010: Internet tariff per MB cut from KES3.3 to KES1.42	2008: 3G launched 2014: Introduced 4G network	80	66	1 <sup>st</sup>	1 <sup>st</sup>	Still leads in the market but significant amount of market shares
Yu Mobile*			2013: Effort to bypass 3G to launch 4G	6	8	3 <sup>rd</sup>	-	Acquired by Airtel in 2014

\*YuMobile was acquired by Airtel in 2014.

Source: Authors.

2016). It is important to note that it took until April and May 2017 for Airtel and Etisalat to deploy their own 4G technologies (Daily Trust, 2017; News Agency of Nigeria, 2017). Table 2 shows the summary of the competitive dynamics in the Nigerian mobile telecom market.

### Competitive dynamics in the South African market

The South African mobile telecom industry had historically had a highly-concentrated structure, with the domination of the duopoly of Vodacom

(Vodafone has a 65% stake in Vodacom) and MTN – both launched in 1994, until the emergence of Cell C in 2001 and Telekom Mobile in 2010 (Mohamed et al., 2012). (Note that 8ta: the mobile arm of Telkom and South Africa's smallest MNO with just 2% market share in 2011).

**Table 2.** The competitive situation in Nigeria.

Rival MNOs	Initial attack	Rivals' responses	Further attacks and responses	Market share % (2003)	Market share % (2015)	Pre-attack market position	Market position (2015)	Remarks
Airtel*		2010: Slashed call rates to ₦9/min	2012: "2 Good" package launched; 20K/m whole day rate after a 60K/min call 2012: 3.75G Network launched 2017: 4G LTE launched	25	20	2 <sup>nd</sup>	3 <sup>rd</sup>	Dropped in both market share and position
Etisalat*		2009: "Easy Starter" and "Easy Cliq"; free 15 MB data to ₦200 or more per week recharge; 25K/s rate to other Easy Cliq subscribers at a daily access fee of ₦5.	2011: Launch of 3G network 2017: 4G/LTE launched 2008: 3G network rolled out	—	15	—	4 <sup>th</sup>	Last to enter market, given that Econet later became a part of Airtel, but competing hard
GLO	2003: "Pay per Second" and "Text to Email" packages launched; SIM card price slashed to as low as ₦1.00; free SMS messages to GLO network subscribers; free GLO MMS (multimedia messaging service); launch of GLO Mobile Internet		2011: "GLO Infinito" launched; 25K/sec for all calls on all network in Nigeria; 2K/sec rate on a chosen special number etc.; 10, 15 and 20% discounts on ₦500, ₦1,000, and ₦5,000 recharges respectively 2016: 4G/LTE launched 2015: Launch of 1GB for ₦500 cheap data package	25	21	3 <sup>rd</sup>	2 <sup>nd</sup>	Lost a reasonable amount of its market share but managed to rise in market position, having displaced Airtel to the 3 <sup>rd</sup> position
MTN		2004: Launch of "MTN Flexi"; a flat 80K/s tariff for subscribers, ₦750 half monthly recharge card	2011: "MTN Real Value"—MTN- Magic Number, -Talk On, -Family and Friends, -Happy Hour—launched 2008: 3G network rolled out 2016: 4G/LTE rolled out	52	44	1 <sup>st</sup>	1 <sup>st</sup>	Maintained position as the market leader, albeit losing a significant amount of market share

Source: Authors.

The market leader (Vodacom) and the runner-up leader (MTN) have persistently accounted for a combined 90% share of the market right from inception. Having found itself in an underdog position right from inception, Cell C started implementing stringent competitive policies for survival, making it the initial major market disruptor in South Africa (Mohamed et al., 2012).

This was not to be easy for the fledgling newcomer, as the two market leaders have already been well-established brands with stronger networks and much larger subscriber bases. Essentially, the two incumbent giant operators had over the years exploited first-mover advantages and “the network effect”, referring to the situation whereby a product becomes more valuable with increasing adoption, to strengthen their market competitive positions. The prevalent high MTRs further meant an artificial barrier to Cell C in terms of price competition with its obviously better-placed and bigger rivals. Thus, the company had to forge a comprehensive growth strategy that aimed at capturing the much-needed 25% market share to break even and become sustainable. Muller (2012) reports that as part of this strategy, Cell C first had to circumvent the challenge of poor network quality by entering a roaming agreement that would allow it to piggyback on the more efficient Vodacom network while making an effort to establish its own infrastructure.

With the aim of levelling the playing field to allow competition via low tariffs, Cell C jolted the market by launching an aggressive campaign on 16 May 2012, which comprised an offer package that slashed call tariffs to a flat rate of 90c per minute for mobile calls and 50c per minute for fixed calls and cut the price of prepaid mobile data package from R1.99/MB to 99c/MB (note that R13.50 exchange for 1USD) (Business Tech, 2012; McLeod, 2012). Cell C disrupted the market further by launching its “99 Cents for Real” prepaid promo package that substantially slashed prepaid international tariffs to five countries by 91% to 99c per second – a largesse the operator later extended to postpaid contracts (Fripp, 2012). These moves by Cell C distorted the status quo of competition, enthroning a price war that eventually changed the competitive landscape of the South African mobile telecom market (De Villiers, 2012; McLeod, 2012).

It is worth noting that Vodacom was actually the first to make an initial competitive move in South Africa with the launch of its 3G network in 2005 (Vodacom, 2005), which MTN promptly reacted to by launching its own 3G network (Shapshak, 2005). Cell C launched the 3G network in 2010 (TechCentral, 2010). Vodacom was also the first to roll out 4G LTE services in October 2012 (Vodacom Community, 2012), with MTN promptly responding in November (TechCentral, 2012), and Cell C much later in November 2015 (McLeod, 2015).

Consequent to the competitive deals offered by Cell C, prepaid off-net call rates dropped below what customers on rival networks paid for on-net calls. Network

customers also had the privilege to call whomever and whenever they wanted without having to worry about peak or off-peak times or the network of the caller and receiver, making them happy with the new developments (Rondganger, 2012). By exploiting the asymmetry in termination rates, Cell C was able to achieve the required scalability to compete even more fiercely against its much bigger market rivals; to whom it had to pay twice what it would pay it in return for on-net calls (Tubbs, 2014).

Vodacom moved very swiftly to launch its “Freedom 99” offer package later the same day (16 May 2012) that Cell C made the initial offers (Fin24, 2012; McLeod, 2012). MTN and 8ta adopted a seemingly “wait and see” approach, despite losing subscribers, probably expecting to see how destructive the disruptor’s actions would be on their performances before reacting. This strategic option by the two operators appears to be underpinned by their belief that competitive responses would be more effective after carefully weighing the (negative) impact of an attack.

To further prove its supremacy, Vodacom switched on its 3G network, the first in Africa, in January 2005. In reaction, MTN rolled out its own 3G network technologies six months later; it however took until 2010 for Cell C to launch its own 3G network technology. Furthermore, Vodacom was the first to launch 4G LTE services in October 2012, with MTN promptly responding in November, and Cell C much later in November 2015. Table 3 summarizes the competitive dynamics in South Africa.

## DISCUSSION

Based on the analysis of the textual data, which formed the empirical basis of the study, we identified four emergent themes initiators of competitive attacks and their motives, nature and intensity of competitive responses, adopted weapons of competition, and winners and losers of aggressive competitive rivalries presented as follows and summarized in Figure 1.

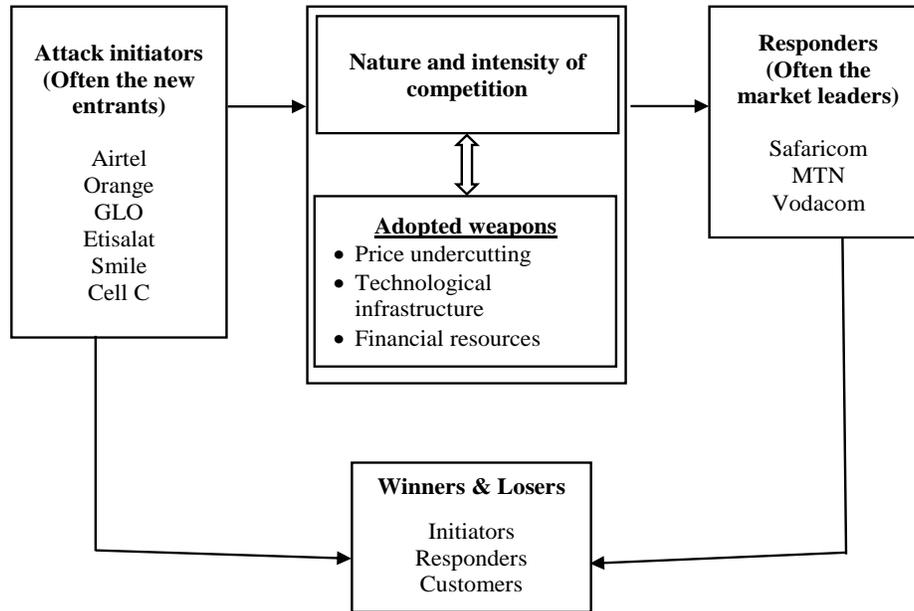
### Initiators of competitive actions and their motives

As evident from the three examined country markets, aggressive competitive rivalries were mainly initiated by Airtel in Kenya (2010), GLO in Nigeria (2003), and Cell C in South Africa (2012). Each of these firms was a late-entrant and relatively much smaller than the more established brands and dominant market leaders: Safaricom in Kenya, MTN in Nigeria, and Globacom in South Africa. The launch of the attack that sparked off aggressive competitive rivalries was aimed at the initiator’s subscriber base, as well as to strengthen its competitive position. This development is in conformity with Kilduff et al. (2016) finding that the smaller, late-

**Table 3.** The competitive situation in South Africa.

Rival MNOs	Initial Attack	Rivals' Responses	Further Attacks and Responses	Market Share (2012)	Market Share (2015)	Pre-attack Market position	Market Position (2015)	Remarks
Cell C	2012: April—a flat rate of 90c/min (mobile) and 50c/min (fixed) launched; prepaid mobile data package price cut down from R1.99/MB to 99c/MB; May/August—"99 Cents For Real" prepaid promo launched; international call tariffs slashed to 99c/sec; R0.15/MB data offer launched; September—3G roaming agreement with Vodacom; November—Internet access charge slashed to R9 from R30 "Cell C Direct", "Easy-to-Follow" also launched		2014: Launch of R999/month SIM-only Infiti Select plan; including smartphones available for R1,399/month  2015: August—3G roaming agreement with Vodacom extended  2015: September—4G/LTE Network launched  2016: Launch of 100GB and 200GB packages for R999 and R1 499	15	28	3 <sup>rd</sup>	3 <sup>rd</sup>	Growth in market share and position, but the market position remained unchanged
MTN		2012: 4G/LTE Network launched; 3G launched in 2005	2014: Pay-per second tariff slashed from R1.20/min to 79c/min  2016: Fiber Broadband Data prices slashed by 50%	35	36	2 <sup>nd</sup>	2 <sup>nd</sup>	Slight gain in market share, but the market position is unchanged
Telkom (8ta or Telcom Mobile)		2013: 4G/LTE Network launched 2013: "FreeMe" offer launched—99c/GB of data and 999c for unlimited deal; free phone calls	2016: Prices of all-networks bundles slashed between 34 and 47% - 25 min R25 bundle to R17; 100 min R90 to R67; 500-min R400 to R299	3	21	—	4 <sup>th</sup>	Massive grab of market share, but still the market underdog
Vodacom		2012: "Freedom 99" launched as a temporary prepaid package against Cell's permanent offers  2012: 4G/LTE Network launched; 3G launched in 2005	2014: 50c/sec bundle promotion launched  2015: "Just for You" Low-cost data package launched	47	38	1 <sup>st</sup>	1 <sup>st</sup>	Lost a significant amount of market share, but remains the dominant market leader

\*Vodacom's 3G launch did not spark off a major competitive race.



**Figure 1.** Response-action framework of mobile network operators.  
Source: Authors.

entrants seeking to expand their customer bases and enhance their competitive positions against the more established, early-mover, market leaders.

The initial launch of competitive attacks was found to be further underscored by varying context-specific factors relating to the firm or the country of operation. For instance, Airtel's unprecedented attacks in Kenya were notably driven by the Indian parent company's underlying growth strategy driven by the quest for generating economies of scale through the mass market or high-volume subscriptions. GLO took advantage of its position as an indigenous firm to enjoy government protection in Nigeria. There have been several reported cases of GLO Mobile lowering prices and other service charges at will at the expense of its predominantly non-indigenous competitors, which the Nigerian authorities simply failed to act upon. The actions of Cell C in South Africa appeared to be inevitable, considering that it would be very difficult for the new company to achieve reasonable growth under the dominance of the duopoly of Vodacom and MTN. Besides, the business models of the aggressor firms tended to give more priority to enlarging their market shares and subscriber bases through offering relatively lower prices than their mainly market-leader rivals that paid more emphasis on achieving customer satisfaction through high-value delivery.

### Nature and intensity of competitive responses

Apparently, market rivals, especially the incumbent market leaders, did not relent in their effort to defend their

competitive positions, responding firmly and often vigorously to the attacks. Being more established brands with more resources and in better competitive positions, in most cases, the defending MNOs often introduced their own competitive packages at prices much lower than those of the attack initiators. As the initial attackers seemed unperturbed by rivals' defensive responses and continued with their aggressive postures, some market defenders went beyond the adoption of competitive price packages to introduce the launch of new network technologies as the new competitive weapon. In doing this, the defending market leaders took advantage of their strong resource bases, knowing fully well that the initial attackers lacked the financial resource base needed to acquire the new technologies. As a result, the responders concluded that the long response would generate a long-term strong competitive advantage for them, at the expense of the weaker aggressors. In the case of South Africa, for instance, until 2010 (five years) for Cell C to respond to Vodacom's launch of a 3G network in 2005, owing to the former's relatively smaller resource base.

The intensity of competitive responses appeared to be influenced by the pervasiveness of the initial attack, with respect to how potentially damaging the initial attack would be to the mainly market-leader rivals. Essentially, it would be unwise for a firm to spend a massive amount of its hard-earned resources on responding to a rival's competitive move that is inconsequential to its market share or competitive position. Firms are more incentivized to counter a competitive attack that clearly constituted a competitive threat, such as by arrogating undue competitive advantages to the rival perpetrator(s).

The speed of response apparently varied from prompt through delayed to nonresponse, depending on the firms involved and their strategies. For instance, Safaricom did not hesitate to respond to Airtel's initial moves in Kenya, just as MTN did to GLO's attacks in Nigeria and Vodacom to Cell C's in South Africa. Nonetheless, MTN and Telkom's 8ta clearly applied the 'wait and see' strategy in South Africa, indicating that the companies needed not to respond if Cell C's move did not constitute a major competitive threat.

Through their prompt responses, market defenders clearly signalled their awareness of the aggressors' intentions and their readiness to hit back in the event of further attacks. Noteworthy is that a firm that is totally unaware of a competitive move cannot possibly deploy resources to mount a prompt and effective counterattack. For example, Safaricom would not have moved so fast against Airtel in Kenya nor would neither MTN against GLO in Nigeria nor Vodacom against Cell C in South Africa if they lacked knowledge of the imminence of the initial attacks. Thus, the ability to pre-empt rivals' potential moves can be considered a major factor determining a firm's capability to engage in competitive rivalries. Firms having adequate knowledge of their rivals are more likely to understand how the rivals operate and be more prepared to counter them.

### **Adopted weapons of competition**

In the case of the MNOs in SSA, both the attack initiators and market defenders, mainly adopted undercut pricing as their competitive strategy. Evidently, all the initial attacks in the three examined markets were based on this strategy, with Airtel in Kenya, GLO Mobile in Nigeria, and Cell C in South Africa all jolting their respective market bases with the introduction of their lowly-priced, new packages to woo new network subscribers. The launch of new network technologies, essentially the 3G and 4G platforms, was another major competitive weapon adopted by the rival telecom firms, especially the bigger and more resource-endowed ones that could dole out the huge financial capital to acquire such costly infrastructure. The deployment of 4G network capabilities by Safaricom and MTN in Kenya and Nigeria, respectively, as well as the switchover to 3G and later launch of 4G networks by Vodacom in South Africa provides clear evidence of this strategic option.

### **Winners and losers of aggressive competitive rivalries**

It is rather very difficult to ascertain if there is actually an overall winner or loser under the aggressive competitive rivalry created by the MNOs: putting the attack initiators, responders, and mobile network users or customers into consideration. Despite that the introduction of lowered

tariffs generated volume subscriptions that clearly boosted the market shares of the initial attackers (aggressors), the expanded subscriber bases also ushered in new challenges. The aggressors' revenues grew through the low-cost offers that enlarged their subscriber bases, but the firms' profit margins also narrowed, in some cases, seriously, owing to the resultant increased operational costs.

Competing on new network infrastructure also warranted the aggressors to bear the huge costs of acquiring the necessary hi-tech equipment for effective competition with the much bigger, more established, and more financially endowed market-leader rivals. With the likelihood that an aggressor would rush into launching an attack without adequate prior assessment of the potential impact of such action, including on its own performance and others, the MNO could set mobile service prices unrealistically low, in a way that would not break even. As a result of their improper pre-evaluation of the situation, it is not uncommon for initiators of competitive attacks to find themselves registering negative gross margins and lower shareholder dividends than the market defenders.

Evidently, in none of the three investigated country markets did the initial attacker succeed in displacing the pre-rivalry incumbent market leader; instead, the aggressors had to bear the additional operational costs for meeting the demands of their newly added subscribers and acquiring new network equipment. This implied lowered profitability and, in some cases, huge losses for the companies, which, in turn, resulted in their delivery of inefficient service qualities that compelled many subscribers to switch to other networks. Accordingly, the aggressors failed to realize their set goals for sparking off aggressive competitive rivalries, which was to change the status quo of competition and become the new market leaders. For example, Airtel failed to dislodge Safaricom in Kenya, the same way GLO and Cell C could not displace MTN and Vodacom as the market leaders in Nigeria and South Africa, respectively. The competitive dynamics of telecom companies in the selected market is shown in Table 1, 2, and 3.

As noticed from the three respective SSA countries that we investigated, each market leader lost a large chunk of its market share as a result of the aggressive rivalries: Safaricom's market share in Kenya fell from 80% in 2010 to 66% in 2015, MTN lost 8% of the Nigerian market between 2003 and 2015, and Vodacom's share of the South African market dropped by 9% in 2001-2015. These shortfalls notwithstanding, the three companies still maintained their positions as market leaders in their respective countries of operation, albeit it cannot be said that they benefited outrightly from the aggressive rivalries.

Customers (subscribers) would be expected to benefit most; given the slashed tariffs, longer talk times and data usage, and the numerous competitive deals and

innovative products they enjoyed as the MNOs tried to outdo each other in the cause of their aggressive rivalries. Essentially, mobile users enjoyed the various mobile money service platforms launched by the rival MNOs. For instance, Safaricom launched the M-Pesa service in Kenya in 2007, allowing instant money transfers to circumvent the challenges of inadequate availability of banks and other financial institutions, especially in remote and rural areas. Several other mobile operators have borrowed the M-Pesa model to launch more mobile money services that have continued to aid money transfers to and across the SSA region. Figure 1 presents the conceptualization of the action-response of MNO in SSA.

This study has important theoretical and managerial contributions. From a theoretical perspective, this study adds to the current understanding of the competitive interactions of firms in the same market or industry competitively interacts, with respect to how they initiate and respond to competitive moves. Kilduff et al. (2016) demonstrate that smaller, late-entrants often spark competitive rivalries, a view that appears to be bolstered by this study, considering that the actions of Bharti Airtel in Kenya, GLO in Nigeria, and Cell C in South Africa – all three being smaller late-entrants in their respective bases. Previous research has also shown that the essence of initiating a rivalrous campaign is to gain an enhanced competitive position in the market or industry. This study has however proved this assumption not to be absolutely true, as the MNOs that initiated competitive rivalries in each of the explored markets ended up not reaching this objective. This study specifically shows different results from that mostly portrayed by many studies conducted outside SSA, showing that context matters.

At the managerial level, the study contends that cross-border diversification, the offer of innovative products, competitive price undercutting, and investment in technological infrastructure constitute the major competitive weapons generally employed by rival firms. The study is also consistent with the argument of previous ones that firms sparking off aggressive rivalries often end up not reaching their original intention of gaining market or industry dominance. Essentially, none of Airtel, GLO, and Cell C to date has emerged as the market leader in the markets of Kenya, Nigeria, or South Africa, respectively, where they are based. The above results not only aid us in better understanding the outcome of the intensity of competition in terms of resources and market position but also provide essential managerial guidelines on the adoption of weapons of competition based on the company's resource base.

## CONCLUSION

With the extant studies focusing predominantly on the mature industries in developed markets, the current

knowledge about how firms in commonly shared markets and industries undertake competitive actions (moves) and responses (countermoves) appears to be skewed. This study explored the competitive interactions of mobile network operators (MNOs) in Sub-Saharan Africa (SSA). Our findings reveal that the small, late-entrant MNOs were the ones to change the competitive equilibrium by offering their services at undercut prices, with the underlying aim of boosting their subscriber bases and strengthening their competitive positions. Mainly larger market leaders were the ones to react first in their bid to maintain their dominance in their respective bases of operation. In doing so, these bigger firms introduced their own competitive packages at more lowered charges and launched new innovative network infrastructure, presuming that the smaller competitive aggressors could not easily afford to respond to the well-calculated moves due to their relatively smaller resource Bases. The pervasiveness of each attack, considering especially how much it constituted a threat to rivals and the adopted strategy of the focal firm determined the speed and magnitude of defenders' responses.

Nonetheless, this study is limited first by its reliance on only online-sourced secondary empirical evidence. Besides, despite providing deep insights into the studied phenomenon through direct interpretation of textual data, the conventional content analytic methodological approach is both time-consuming and prone to subjectivity. We specifically recommend future researchers employ multiple methods, such as the mixed-method approach, in future works. We strongly believe that by addressing these identified issues, subsequent studies would add more value by creating a deeper understanding of the competitive rivalries of market and industry firms, thereby advancing the competitive dynamics literature. Second, the articles were selected from year 2003, 2010, and 2012 based on the time the major competitive attack was launched in Nigeria, Kenya, and South Africa respectively. Future research should conduct another review study from 2015 to date and include more countries in Africa to accommodate changes in the market and contextual factors in other countries. Finally, this study context includes developing countries from SSA. Future research could conduct a comparative study to assess the nature of dynamic competitiveness between developed and developing countries.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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