

# Gx White Paper

## Understanding the Drivers of Mobile Payment Adoption: Comparing Kenya and Tanzania



# **Understanding the Drivers of Mobile Payment Adoption: Comparing Kenya and Tanzania**

## **Authors**

Professor Dan Horne, Chief Knowledge Officer, Gx

and

Dionne Nickerson, Providence College



## Executive Summary

Over the last three months, Gx has undertaken a number of research projects that have analysed the behaviour and attitudes of consumers and end-users with respect to the use of mobile phones as a payment device.

In Africa, we have undertaken studies in two countries that have produced different results regarding uptake of mobile payments. Unlike our European surveys, our African respondents comprised microenterprises rather than consumers. In Kenya, our research has shown that the success of M-Pesa has not been replicated in Tanzania for several reasons including macro characteristics, usage patterns and, importantly, perceptions about how and why to use the product.

For any payment instrument, be it a traditional prepaid card or a mobile device, it is important that it is useful, easy to use and solves a pressing problem that a consumer has and crucially that the consumer can trust the application. In the African research we have highlighted here, the disparity between respondents that use mobile payments and those that do not underlines that these are essential criteria for mobile payments to be successfully adopted by a critical mass of consumers.

## Introduction

Nowhere has the use of mobile phones for money transfer become more ubiquitous than in Kenya. Developed by Vodafone and launched in 2007 by its Kenyan affiliate Safaricom, in just six years, M-PESA is the country's most widely used mobile payment system. It has transformed how money flows throughout Kenya and similar systems are only slowly gaining traction elsewhere on the continent of Africa.

Our goals for this study were twofold. First, we wanted to assess the perceived impact on business development and wealth creation that pervasive mobile payments usage generates. Firmly establishing the links between usage and outcome variables such as increased revenue and additional hiring are essential for regulatory authorities and other key stakeholders to understand the importance of supporting, or at least not inhibiting, mobile payment development.

Second, we wanted to compare and contrast micro-entrepreneurs in Kenya with those in neighbouring Tanzania where mobile payments have been available for several years but where the technologies have not seen the widespread adoption found in Kenya. Our hope is to analyse the key differences and identify the dimensions where mobile operators, banks, governmental authorities or other interested parties can make changes that directly impact the development of mobile payments.

## Study

Over a two week period in March, Dionne Nickerson visited Kenya and Tanzania to lead a team of researchers who collected survey data and engaged in depth interviews with micro-entrepreneurs and market experts in Kenya and Tanzania. Interviews and questionnaires were completed using both English and Kiswahili. More than 370 individuals took part in the study.

Given the disparity in levels of usage, we tried to identify key factors that were accelerating adoption in Kenya and inhibiting usage in Tanzania. We had theorized that perceptions about ease of use and learning, safety, and costs would be important explanatory factors. On the other hand, we assumed that the business case for the product would not differ as the product has been in each market for several years and basic knowledge is widespread in most areas of both countries. The data both confirmed and challenged our previously held assumptions.

### Kenya

The M-PESA system allows users to deposit, send, and withdraw funds using the mobile handsets and existing mobile systems. Once a user registers at an authorized M-PESA retail outlet, an individual electronic money account linked to the user's phone number is assigned. The account is accessible through an application stored on the SIM card. In exchange for cash deposits, Safaricom issues "e-float", which is measured in the same units as money, to the user's account. While registration is free, fees are levied when e-float is sent or when cash is withdrawn according to a step function.

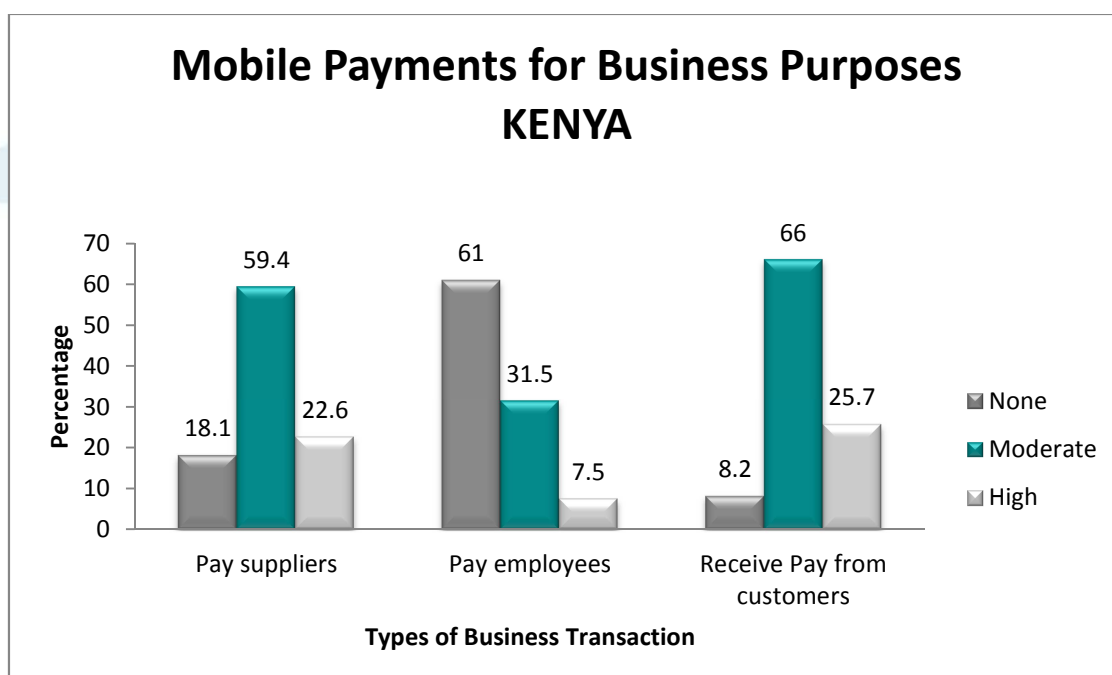
M-PESA's startling success in Kenya may be attributed to several factors. In 2007, only 18.9 percent of Kenyans were banked. Thus, the rapid uptake of M-PESA demonstrated a substantial need for financial services in the Kenyan marketplace. However, both anecdotal evidence and the current study find that many users do have formal banking relationships.

Kenya is also a country in which urban-rural remittances are common. In 2006, approximately 1 in 5 Kenyan households relied on remittances as the primary source of income. Prior to the launch of M-PESA, the most common means of transferring money involved Kenya Post, informal bus companies, or the sender physically bringing the funds to the receiver. These vehicles made money transfer costly, time-consuming, and risky. Furthermore, mobile phone penetration in Kenya has grown so rapidly that 77% of the population of 30.4 million has a mobile phone. This was certainly true of our sample of micro-entrepreneurs.

A final supporting condition was the dominate market position of Safaricom at the time of M-PESA's commercialization. Safaricom enjoyed a near 80 percent market share, had the most developed mobile network, as well as maintaining access to a large network of airtime resellers.

The aforementioned factors have resulted in the unprecedented growth of M-PESA. M-PESA's 20 million users transferred \$500 million per month in 2011. It is estimated that 40 percent of Kenya's adult population has access to M-PESA and that there are roughly five times as many M-PESA outlets in Kenya as there are post offices, bank branches, and automated teller machines combined. (For more in depth reading on the M-PESA, we suggest: *Money, Real Quick* by Tonny Omwansa and Nicholas Sullivan, 2013, Balloonview.)

M-PESA is not only used to transfer funds to other subscribers, but also to pay bills, to purchase mobile airtime credit, and increasingly to pay for consumer goods. In our study, we found that 95 percent of Kenyan microenterprises use M-PESA for business purposes including paying suppliers, paying employees and receiving payment from customers. Figure 1 shows the usage level (none, moderate, high) of these three types of business transactions by the microenterprises in our study.



**Fig.1**

The data shows that a majority of the microenterprises surveyed use mobile payments moderately for paying suppliers and receiving payments from customers. Moreover, one in five microenterprises indicated intensive usage of mobile payment for paying suppliers and one in four reported high usage for receiving payments from customers. These findings suggest that mobile payments are an integral part of Kenyan microenterprises' supply chain.

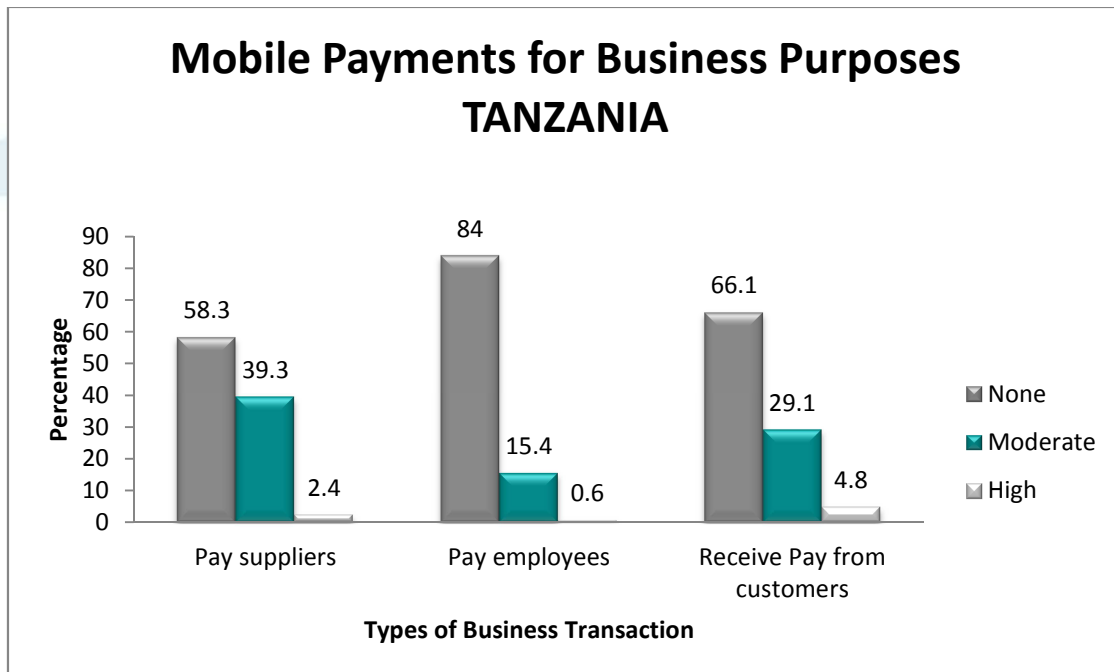
### Tanzania

One year after its introduction in Kenya, M-PESA was launched in Tanzania by Vodacom Tanzania. With traditional banking even less common in Tanzania than in Kenya, the country presented a significant market opportunity for mobile payments. According to the International Finance Corporation, while M-PESA enjoyed rapid uptake in Kenya (2.7 million users and 3,000 agents 14 months after its introduction), its diffusion in Tanzania was markedly slower (280,000 users and 930 agents 14 months after its introduction).

Along with the attitudinal and behavioural factors we studied, some distinctions in the market also help explain Tanzania's slower rate of mobile payment adoption. These include population densities, rates of literacy, and less concentration/dominance with the mobile networks and agent infrastructures. The near monopoly enjoyed after M-PESA was first-to-market in Kenya, was not seen in Tanzania where competing services such as Zantel's ZPesa and Zain's ZAP were introduced during the same time period.

Despite its slow start, M-PESA is the most common mobile payment system in Tanzania. Yet, in Kenya, most respondents to our survey began using mobile payments for business purposes over three years ago, while the majority of Tanzanian respondents began using mobile payments for business purposes only a little over 9 months ago. Figure 2 shows Tanzanian microenterprises' usage of mobile payments for business purposes (paying suppliers, paying employees and receiving payment from customers).





**Fig.2**

According to our findings, most microenterprises in our Tanzanian sample do not use mobile payments for the business purposes noted above. Tanzanian microenterprises in our sample use mobile payments at a higher rate for paying suppliers than for receiving payments from customers. The opposite was true for the microenterprises in Kenya. These results indicate that mobile payments may be less widely used by Tanzanian consumers, which may be attributed to levels of trust and education about the product.

## Technology Acceptance Model

Consistent with the Technology Acceptance Model (first proposed by Fred Davis after studying peoples' adoption of email in the eighties), we felt that the differences in usage between Kenya and Tanzania resulted in a large part by differences in perceptions about the ease of use. Figure 3 below clearly demonstrate the wide discrepancy in attitudes expressed in the two countries.

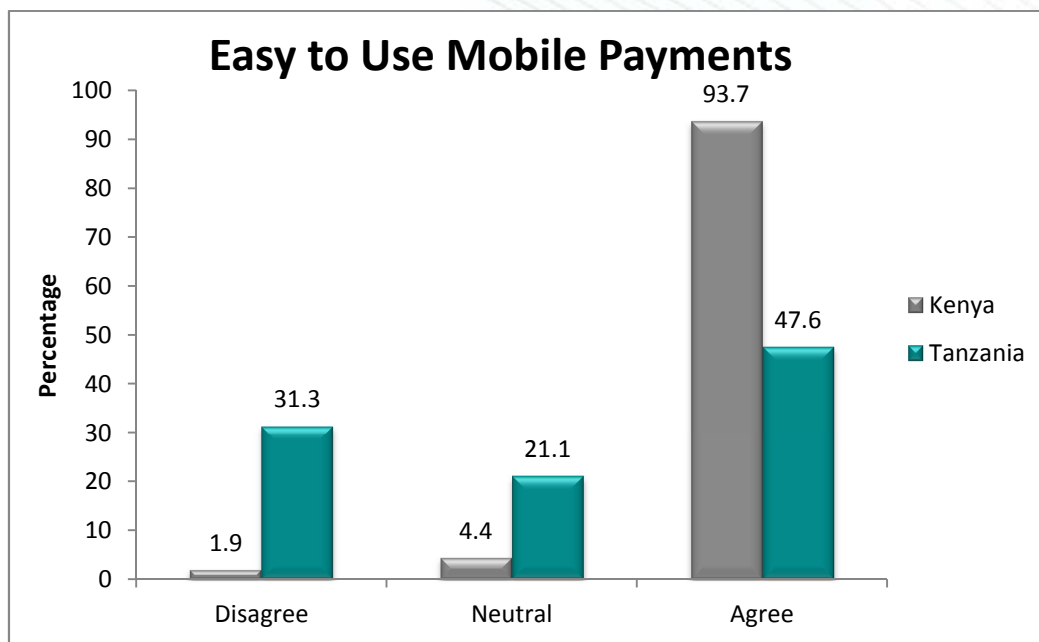


Fig.3

The results above are dramatic with nearly twice as many entrepreneurs in Kenya agreeing that use is easy. Importantly, less than 2% disagree. In Tanzania, agreement about the ease of use approaches half, but one would expect this to be much higher given the length of time mobile payments have been available to micro-entrepreneurs in Tanzania.

This is closely tied to respondents' feelings about how complicated paying with a mobile is, as shown in Figure 4 below.

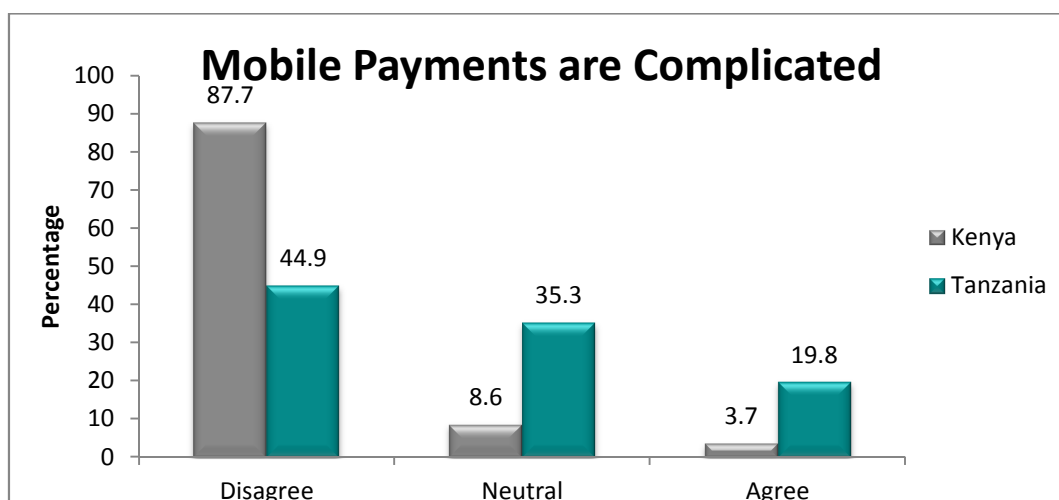


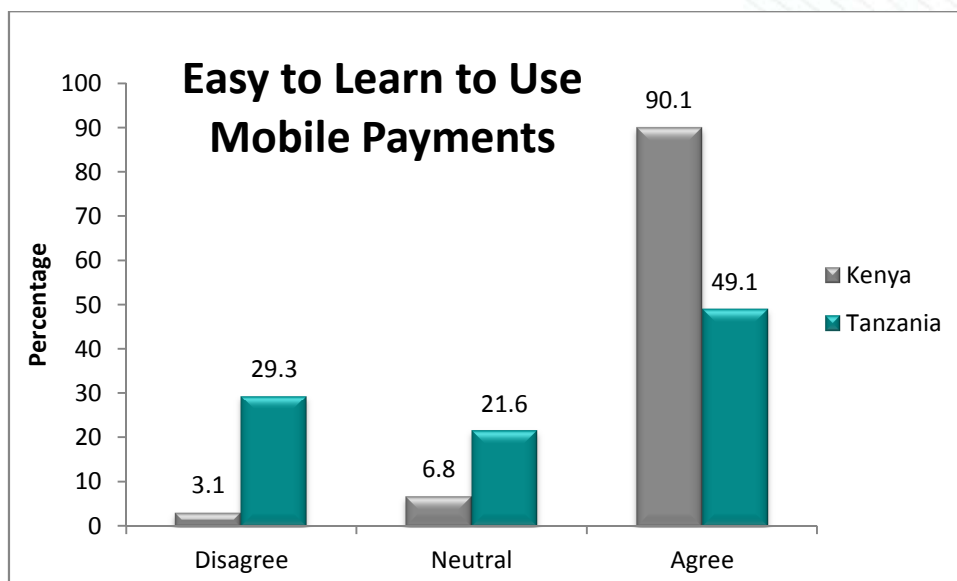
Fig.4



Here, the pattern of responses is very similar but there appears to be slightly more concern and greater uncertainty in both markets.

It is critical to understand that the Kenyan responses are likely to be the result of “strongly held” attitudes which have developed based on actual experience. In Tanzania, the attitudes are probably “weakly held” as they would more often be based upon second-hand information rather than personal experience. As such, we are, to a degree, comparing apples to oranges or rather experiences to perceptions.

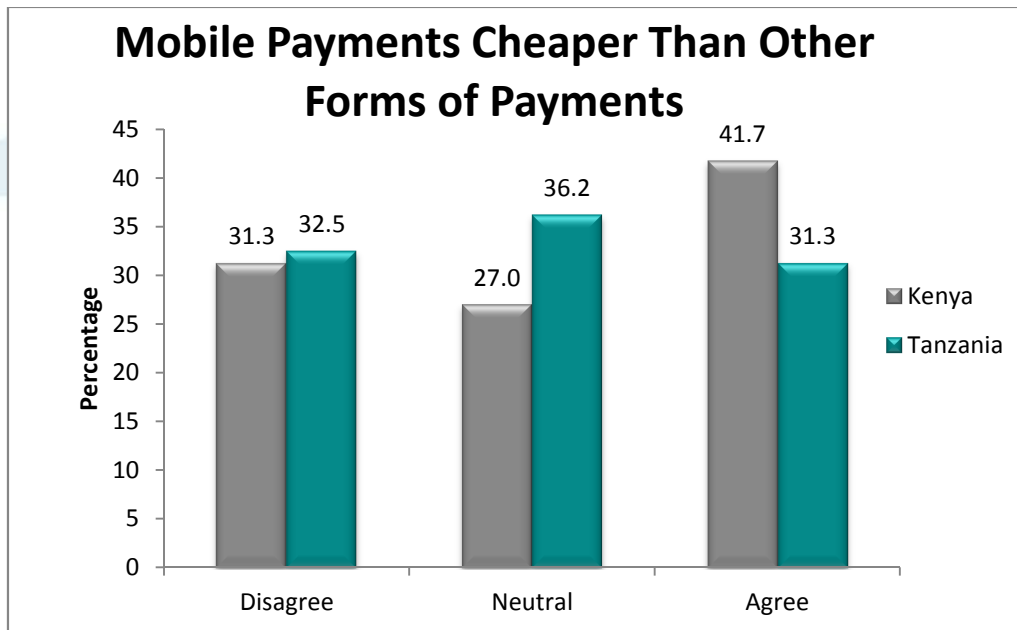
The feelings about whether or not it would be easy to learn how to use the new technology are also thought to be clear indicators of uptake. Again, in Tanzania we are more likely to be assessing perceptions, right or wrong, rather than factual knowledge. The pattern of responses is shown in Figure 5 below.



**Fig.5**

The contrast between the two markets is again evident and the “fear” that the technology will be hard to learn is a serious impediment to more widespread adoption. On the other hand, half of the entrepreneurs in Tanzania feel they can easily master the technology. If properly positioned/ incented, this half can serve as instructor/mentors for those who feel less confident about learning a new way to do business.

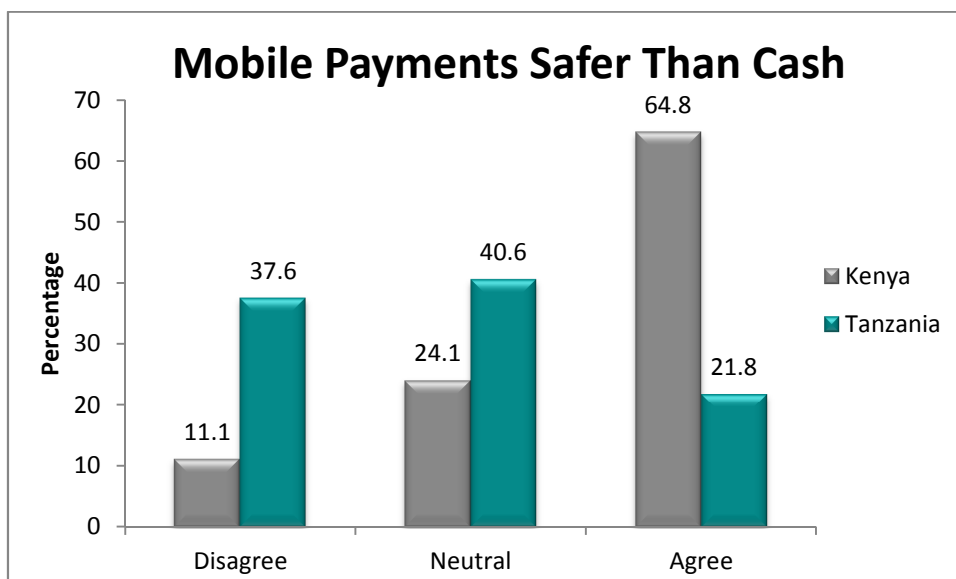
Perceived cost of using mobile payments did not feature as distinct responses between the two markets. Whether or not respondents have an accurate view of prices they pay, their answers were more consistent as seen in Figure 6.



**Fig.6**

Neutral answers are often considered indications of uncertainty; not enough background to form an informed positive or negative response. The current data may indicate, in both markets, some combination of lack of understanding and the difficulty at making comparisons across payment forms. For instance, cash may be preferable to deal with because of low transaction costs and the ability to transact under the government’s radar. However, if the cost of standing in line to access cash at banks or ATMs, or risk-based costs of carrying cash are taken into consideration, mobile payments may compare favourably.

This necessarily suggest that safety and security issues that arise when discussing mobile payments. We measured several facets of this dimension as in other markets (see adjoining report on European Mobile Payments), where we have conducted research this year, and found that safety concerns were preeminent. Whether mobile payments were seen as safer than cash is presented in Figure 7.



**Fig.7**

While Kenyan entrepreneurs do not show the same enthusiastic responses to this questions as they did to those about ease of use, almost two-thirds view the technology as safer compared to its more commonplace “competitor.” Less than a quarter of Tanzanians feel this way however, suggesting that both more experience and more education would be helpful.

Importantly, we measured several outcome variables to assess whether micro-entrepreneurs felt that the new technology was having its predicted impact. One factor we measured was if mobile payments were positively affecting business growth. Results are shown in Figure 8.

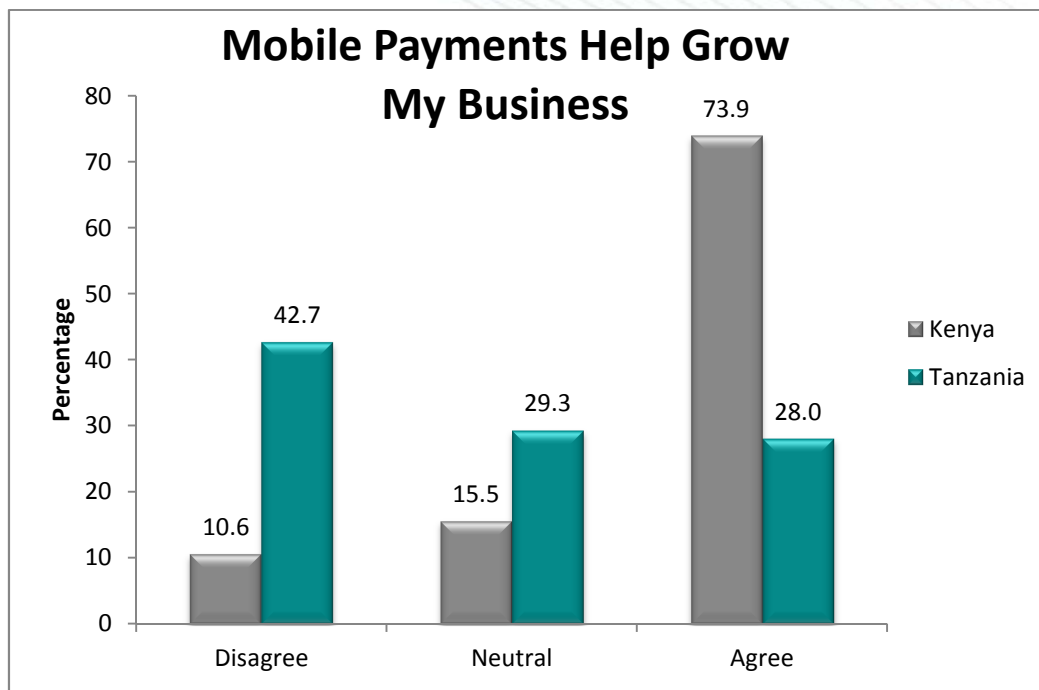


Fig.8

## Final Thoughts

Many looked at the success of M-PESA in Kenya and jumped to the conclusion that the success there could be mimicked easily in other markets. Our conclusions based on extensive study and consumer data suggest that more caution is appropriate. While we measured many more dimensions than are reported in this short paper, there is a consistent set of facts that suggests that attitudinal and behavioural differences are keys which must be effectively addressed before widespread adoption takes place. The current, “build it and they will come” strategy appears naive in the face of the actual data.

On the other hand, understanding the existence of pervasive perceptions, and even misperceptions, suggest that there are concrete steps that can be taken to move consumers and business people in other markets along the road to adoption. Our research suggests several communication and marketing strategies that should be initiated. It also highlights the important link between mobile payment usage and growth which should help bring interested parties to the same table.

For more information on this research project, please contact Dan Horne at [dan.horne@yourgx.com](mailto:dan.horne@yourgx.com).

## About Gx

Since 2004, Gx has operated as the global exchange for prepaid and emerging payments. We are a pioneering membership organisation that has acted as a catalyst for bringing companies together to achieve their collective and individual business objectives and enable them to maximise their growth potential. Our purpose is to empower businesses through informative and inspiring events, insightful data-driven intelligence and expert, consultative support.

If you would like to learn more about Gx and the Services that we offer then please contact Anthony Vidal at [anthony.vidal@yourgx.com](mailto:anthony.vidal@yourgx.com)

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