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Seedhouse, A., Johnson, R., & Newbury, R.

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Potholes and pitfalls: The impact of rural transport on female entrepreneurs in Nigeria

Andrew Seedhouse, Rebecca Johnson, Robert Newbery

Plymouth University, Drake Circus, Plymouth, Devon PL4 8AA, United Kingdom

Abstract

The role of transport in stimulating economic development in developing countries is well documented. However the specific impact of rural transport policy and provision on female entrepreneurs is less well known. Drawing upon the experiences of a group of growth-focused female entrepreneurs receiving support from a national programme, this research explores how they use transport for their business activities, transport barriers that they are subject to and ways in which these barriers are being surmounted. To this end it uses the findings from telephone surveys, supported by in-depth interviews to generate data about their business and transport behaviours. It identifies that many of the women feel that the current transport situation is having a negative impact on the success of their businesses, and has affected their ability to recruit employees, service customers and deliver goods. Whilst the women had a very poor understanding of transport policy, many of them felt that the main issue is the poor quality of the roads. In the short term initiatives to support the specific needs of women would be highly valuable in helping these entrepreneurs to successfully grow their businesses. In the long term a significant amount of investment is required to improve rural transport to meet the needs of female entrepreneurs.

1. Introduction

Poor rural transport systems have an impact upon a diverse range of people. However, in sub-Saharan Africa women are likely to feel the impact more keenly than men due to gender inequalities (see for example Bryceson and Howe, 1993, Porter, 2002a, Bryceson *et al.*, 2003, Njenga and Davis, 2003 and Howe, 2003). Women are often perceived to be transport constrained (Fadare and Morenikeji, 2001), which affects their ability to engage in entrepreneurial activities. The negative effects of poor access to transport are compounded by their gender-related roles, their gender-related financial and economic situation, and their gender-related poor access to transport technologies (Starkey, 2007).

Njenga and Davis (2003) point out that discontent with existing transport policies and patterns of investment has led to the evolution of a body of investigative work whose focal point is issues of social, economic and environmental sustainability and which is related to gender. However Porter (2014) notes that the “knowledge that has been gathered over more than two decades concerning rural women's transport problems in Africa has not, as yet, induced adequate remedial action” (p. 39). This is reinforced by Odufuwa *et al.* (2012) who posit that “women's issues in Nigerian public transport have received little or no attention from transport planners and policy makers, empirical evidence with respect to travel burdens facing women during spatial interactions is needed” (p. 24). Therefore, in many parts of sub-Saharan Africa, a transport system and transport services that are designed to take account of requirements which “vary according to gender relations, mobility needs, roles and access to resources and decision-making process” (Odufuwa *et al.*, 2012, p. 24) are somewhat lacking.

The availability of a high quality, reliable transport network is well documented as a contributory factor in the overall success of a nation and its economy. Whilst in developed countries a well maintained, functioning transport system is seen to be a facilitator of growth (Banister and Berechman, 2001 and Eddington, 2006), transport improvements in developing economies have been shown to facilitate increased economic activity (Crafts and Leunig, 2006 and Rosewell, 2012).

Much of the expenditure on transport in developing countries takes place in urban areas where the population that will benefit from it is greater. However, the role of transport investment in rural areas should not be underestimated as transport has strong links to increased agricultural productivity in developing countries, which leads to reduced household level poverty (Dorosh *et al.*, 2012 and Khandker *et al.*, 2006). As the World Bank states “inadequate transport has long been considered a particular impediment to agricultural growth and poverty reduction in sub-Saharan Africa” (World Bank, 2012, p. 5). Indeed sub-Saharan Africa is particularly disadvantaged in transport terms because many of the countries are small and landlocked. In addition, despite evidence of their effectiveness from other regions, many rural transport interventions remain un-used (World Bank, 2012).

Whilst improved transport infrastructure and services can clearly benefit the economy in developing countries, the particular barriers experienced by, and needs of, niche sub-groups such as rural female entrepreneurs appear to be relatively poorly understood. This paper contributes to knowledge in this area drawing on research undertaken with female entrepreneurs in rural Nigeria during 2013 and 2014. It explores the transport behaviours of, and transport needs and issues experienced by female entrepreneurs before drawing conclusions regarding future actions.

2. Existing knowledge

The Federal Republic of Nigeria is situated in West Africa, bordering Benin, Niger, Chad and Cameroon. It has a total area of 923,768km² and a population of 174,507,539 of whom 49.6% live in urban areas (CIA, 2013). It is the most populous country in Africa (CIA, 2013), but while average life expectancy in Nigeria has been rising it is currently only 52, below that of the rest of sub-Saharan Africa (World Development Indicators, 2011). Only 61.3% of the population over the age of 15 can read and write, although the male/female split is uneven since 72.1% of men are able to write, but only 50.4% of women (CIA, 2013). The average number of children per woman is 5.7, although families tend to have more children in rural areas than in urban ones (National Population Commission, 2009).

Around 50.4% of the Nigerian population live in rural areas¹ and agriculture provides the livelihood for around 90% of these people (IFAD, 2010). Two thirds of rural people are classified as “rural poor” and live on less than \$1 (US) per day. Farming remains the main occupation for households in rural areas, although it rarely provides sufficient household income. As a result, most rural households engage in a diverse range of activities and employment. In the villages migratory opportunities are often pursued by male household members, leaving women behind to manage farm and non-farm enterprises, where women make up 60–80% of the agricultural labour force (Odebode, 2012). This leads to feminisation of economic activities as women combine household tasks with income generation in order to maintain the food and welfare requirements of their household.

2.1. Rural transport

Improvements to the road network and to transport services play a key role in stimulating the economy and reducing poverty (Starkey, 2007). In rural areas, one of the most effective means to increase income and reduce poverty is to increase the productivity of local activities that households depend on for their livelihoods (Igwe, 2013). However much economic activity depends on access to roads and transport services, as good access can increase the price a trader can get for their goods and help traders to establish new markets (Porter, 2002b and Njenga and Davis, 2003).

¹ The Nigerian National Bureau of Statistics defines an urban area as an area with a population over 20,000 (United Nations, 2014)

The rural transport system in Nigeria consists of a network of roads and tracks of varying degrees of quality. In many rural areas people have poor access to the motorable roads they need to experience socio-economic benefits (Starkey *et al.*, 2013). Many rural roads are in poor condition and few are paved, impacting on the existence and reliability of public transport services. Furthermore, some areas are only accessible during the dry season as heavy rain makes them impassable and increases erosion during the wet season (Igwe *et al.*, 2013).

Whilst roads are an important component of the rural transport network, Starkey and Njenga (2010) suggest that “roads are not enough” (p. 1) and rural transport services are necessary to enable people to access services and livelihoods. They discuss the fact that for the “overall benefits of improved rural transport infrastructure to be realised there is need to encourage the development of a range of complementary and competing transport services, small and large, short distance and long distance, passengers and freight as appropriate for different rural contexts” (p. 1). This is reiterated by Porter (2007a) who notes that transport planning in sub-Saharan Africa has in the past concentrated on rather narrow engineering issues, and needs to further consider the wider economic, social and political environment in order to create real benefits. This is particularly pertinent since private ownership of motorised transport is relatively uncommon with only 31.3% of rural households owning a motorcycle and 5.7% owning a car (National Bureau of Statistics, 2013).

2.2. Gender issues in Nigeria

Nigeria is ranked 118 out of 134 in the Gender Equality index, with women at every educational level earning less than their male counterparts, and being subject to higher levels of tax. Women are also more likely to be illiterate and only 4% of girls complete secondary school in some parts of Nigeria (British Council, 2012).

This means that women tend to be disadvantaged and under-represented in business in comparison to males. Nevertheless, some positive progress has been made towards gender “mainstreaming” and ensuring that policies do not discriminate against women, granting more rights, in some states, to property and access to credit. However there is still some way to go to reach an adequate level of equality (UNECA, 2012). Progress is limited by: poor perception and trivialisation of gender issues by national policy makers and the general public; a lack of awareness of the content of the National Gender Policy; and a lack of funding combined with increasing numbers of disadvantaged women requiring assistance (UNECA, 2012).

Further evidence of inequality is evident in a variety of research reports. Ogunlela and Mukhtar (2009) found that women are grossly under-appreciated and have very little control within the agricultural sector considering the contribution they make to it. They suggested that “the survival and sustenance of agriculture and rural development in Nigeria, as well as in many sub-Saharan Africa countries, rest squarely on the rural women. They therefore deserve to be given due recognition as far as decision-making process in agriculture is concerned” (p. 28). This is reinforced by Odebode (2012) who suggested that, whilst women have been identified as playing a significant role in agriculture, their roles and contributions were largely unacknowledged, leading to a lack of power and ultimately to a decrease in agricultural productivity.

These imbalances have an impact on women's access to transport, a situation which is complicated by other factors, such as culture and religion (Gender and Transport Resource Guide, 2006). Porter discussed the issue of gender and roads extensively in a 2012 paper, which concluded: “Evidence from Ghana and Nigeria suggests that, throughout the last century, the rural poor – particularly poor women resident away from the gradually expanding paved road networks – have faced enormous transport/access hurdles. Access to markets, to services like health and education, to agricultural extension services, banking facilities and credit and, indeed, to centres of power, influence and information, have all been constrained by poor roads and poor transport services”. (p. 11).

Starkey and Njenga (2010) found that, whilst women may have some privileges while travelling, such as access to safer seats, they are disproportionately affected by issues such as unreliability of services. Due to additional responsibilities at home (Diaz Olvera *et al.*, 2013) they may choose not to travel rather than risk being stranded. In addition, women in Nigeria are more likely to experience psychological stress than men when using the transport system (Asinyanbola, 2010 and Odufuwa, 2008). Within northern Nigeria, most people are practising Muslims and here due to religion, culture or local laws women may be prohibited from taking public transport vehicles operated by men and being in the same public transport vehicle as men (although this varies by state) (Harnischfeger, 2008). They may also in some localities be prevented from using motorcycle taxis (US Department of State, 2006). As a result, many rural women take to walking and head-carrying. For those who wish to take public transport, they often wait for several hours for the few vehicles that are operated by women. They are also unlikely to cycle, either due to cultural inhibitions or because they have not learnt to ride a bicycle in their youth (Porter *et al.*, 2007). There is however evidence of an increase in women using motorcycle taxis (Okada) in cities (Oyesiku and Odufuwa, 2002).

Porter (2011) noted that even in regions where the majority of the people are not Muslim, there is often a strong male association of female mobility with promiscuity. The author maintains that patriarchal constraints impact on the mobility of females from an early age. This relates not only to male concerns around the vulnerability of girls to sexual and other attacks and to their potential promiscuity, but also to gender division of labour, which typically places great emphasis on female labour contributions to household reproduction and, in locations where the transport gap is substantial, assigns pedestrian transport of goods to females (*ibid*, p. 66). The author observed a widespread association of mobility with female sexual misdemeanour in many African villages where the majority population is Christian. Males attitudes to mobility and a discourse that specifically associates mobility both with promiscuity and being a 'bad uncaring wife' clearly brings tension within the household, which escalate into violence if women rebel (*ibid*, p. 68).

Peters (2001) emphasises that cultural traditions and male control of household resources mean that women have less access to non-motorised and motorised transport than men. For example, Odufuwa (2007) found that in Lagos, the decision to acquire an automobile was made by men in 57% of all cases. Therefore, multi-tasking, poor service access, and poor vehicle access severely limits the time available to women for other activities and the timeliness for carrying out activities. For women, the financial and time constraints – and, in some cases, the cultural constraints – on mobility and access can be particularly restrictive (Porter, 2002b and Porter, 2007b).

2.3. The development of female entrepreneurs

Developing countries are recognised as having high levels of entrepreneurs within comparative national surveys (Herrington and Kelley, 2012). Such high levels coupled with low levels of economic development have been explained by the number of 'necessity' entrepreneurs in these countries that have no alternative livelihood options (Hechavarria and Reynolds, 2009). It is the 'opportunity' entrepreneur that has a choice of options and chooses to exploit the best one that arguably leads to economic development (Reynolds *et al.*, 2001). Theories of institutional entrepreneurship regard the entrepreneur as an individual that, regardless of the quality of the opportunity, contributes social value only when the correct infrastructure and environment permit (Baumol, 1990). Without the correct informal and formal institutions, entrepreneurs may have a neutral or even negative impact on development.

Framing this explicitly within development terms, Sautet (2011) defines a productive entrepreneur as one that generates social value. This may occur on either a local or systemic scale. A local entrepreneur may, for instance, copy the idea of a neighbour, leading to displacement and limited new value creation (Douhan and Henrekson, 2010). A systemic

entrepreneur however exploits an idea that has the potential to scale beyond the local community, contributing to development.

Within this conceptualisation, Nigeria has one of the lowest female entrepreneur rates in sub-Saharan Africa (British Council, 2012) possibly because they “face additional impediments or road blocks due to deeply rooted discriminatory sociocultural values and traditions that are embedded in the policy and legal environment and in institutional support mechanisms” (Madichie, 2009, p. 58). Cultural values and social exclusion also hinder the equal participation of women in economic activities, alongside environmental factors (such as financing accessibility, family and community, business support services, and legal and regulatory factors) (Okafor and Mordi, 2010) and low education and skill levels (Woldie and Adersua, 2004).

Many of these issues are compounded by the “traditional” roles that are expected to be fulfilled by women in Nigeria. Woldie and Adersua (2004) assert that “in Nigerian culture, the traditional female role is still highly regarded, and such qualities as subservience, supportive, and submissiveness meet with approval. Career women therefore often face a conflict, since the qualities that make them “acceptable” in traditional terms can undermine their self-confidence and their ability to assert themselves, to assume responsibility and to succeed in a career.” (p. 80–81). In summary, one of the greatest barriers for female entrepreneurs is being taken seriously by their male counterparts and this, alongside other barriers, presents a major barrier to women who have entrepreneurial aspirations.

It has been argued that in order to allow more women to become entrepreneurs, institutional access to finance and support needs to be improved (Mordi *et al.*, 2010, Halkias *et al.*, 2011 and Singh *et al.*, 2011) alongside wider cultural change (Ehigie and Umoren, 2003). Support should come both from the government and other authorities, as well as family in order to reduce the “double burden of work” (Ehigie and Umoren, 2003, p. 92) that women suffer from and that decreases women's ability to commit to a business. Following calls to focus on the critical role of women in development (Leinbach, 2000) and a focus on the institutions needed to facilitate systemic entrepreneurship (Baumol, 1990 and Sautet, 2011); this paper explores how transport barriers impact women within rural Nigeria.

3. Approach

A transport system that, in many rural areas, is unfit for purpose may prevent access to lucrative opportunities and socio-economic growth through entrepreneurial activity. Whilst this impacts upon everyone, the situation is exacerbated for women who have myriad cultural and religious barriers to contend with. As a result there are a limited number of female entrepreneurs and growing a business is difficult. Therefore this research seeks to explore transport barriers in an attempt to ascertain if and how women led solutions can reduce these barriers.

The sample used in this study is drawn from the YouWiN! scheme, a national business plan competition established by the Nigerian Government that aims to improve access to funding for youth and female entrepreneurs. Barriers of finance and lack of support experienced by successful applicants have been directly addressed by the receipt of funding and ongoing mentoring. The population provides the unique opportunity to understand next-step barriers to business growth. In 2012/13 YouWiN! received 60,000 applications from female entrepreneurs, with 1200 winners supported with financial and mentoring awards. The findings discussed in this research are based on a dataset of 1200 female entrepreneurs from the 2012/13 competition.² Within this population over 68% held a university or higher qualification, with business ideas that were distributed between service (30%), product (35%) and service and product (35%) offerings. The sectors themselves were split over 19 different industries with 15% animal farming, 10% food and drinks, 11% education and 6.7% crop farming.

² With kind permission from the Nigerian Ministry of Finance.

There were 2 stages to the data collection in this research project: a telephone survey and in-depth telephone interviews. Since the geography of the women was dispersed it was neither feasible nor cost effective to use a face-to-face approach for data collection. Further, the postal service is very unreliable, so contacting the women by post would have been ineffective. The pace of adoption of mobile phones has been swift in rural parts of Africa where landlines are almost non-existent (Murphy and Priebe, 2011). Mobile phone based techniques have been found to yield results very similar to face to face techniques (Mahfoud *et al.*, 2014) and appear to be highly effective for collecting panel data (Hoogeveen *et al.*, 2014). They also represent a useful approach in a situation where levels of literacy may be too low for written surveys methods (Bradley *et al.*, 2012). Furthermore they have much lower costs than traditional face-to-face approaches (Croke *et al.*, 2012). Given the availability of mobile phone numbers for the population that were being studied, a mobile based approach was selected.

92 women were sampled across 16 states based on a purposive selection of the three lowest population density states in each of the six geopolitical zones (see Figure 1 and Table 1). The dataset of 1200 women was first filtered to leave just those that lived within the 16 selected states. Then a random sampling approach was applied using a number of pre-screening questions to ensure that only women who either lived or ran their businesses (or both) in rural areas were included. They were asked to state the type of location they lived in and ran their businesses in themselves. The selection of the lowest population states, combined with the pre-screening questions, ensured that the study focussed on women in rural areas. This approach was applied until the quota of 92 was reached.

Figure 1: Map of population density of Nigerian States.

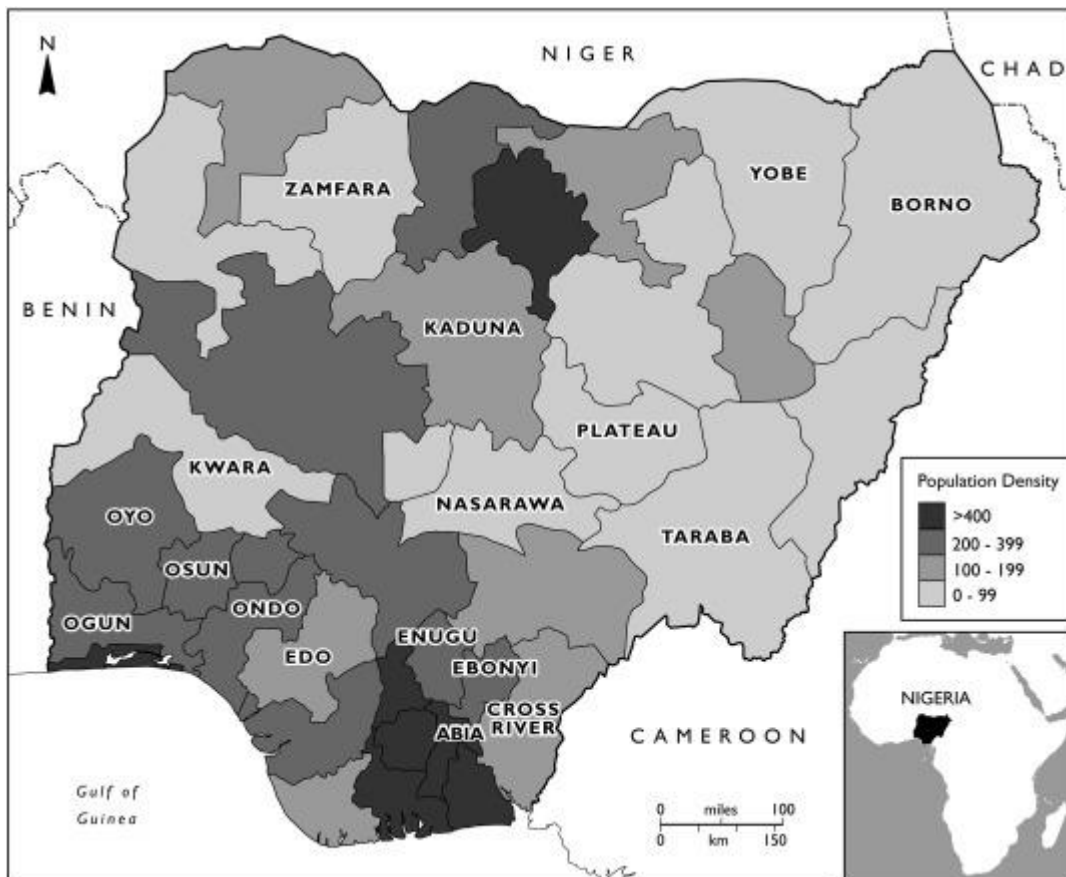


Table 1: Women from each state.

States	Frequency	Percent
Kwara	4	4.3%
Nasarawa	7	7.6%
Plateau	5	5.4%
Borno	1	1.1%
Taraba	9	9.8%
Yobe	2	2.2%
Kaduna	12	13.0%
Zamfara	1	1.1%
Abia	7	7.6%
Ebonyi	10	10.9%
Enugu	7	7.6%
Cross River	2	2.2%
Edo	5	5.4%
Ogun	10	10.9%
Ondo	1	1.1%
Oyo	9	9.8%
Total	92	100%

The survey was undertaken by a female interviewer, to remove potential gender bias, and gathered data on: the individual; their business activities; transport usage; business operations and transport interactions. The findings were recorded in a spreadsheet before being cleaned and analysed.

Following the telephone surveys, in-depth qualitative interviews were developed based on the results. These were undertaken with 20 women selected to represent a balanced sub-sample of the participants in the telephone survey, taking into account a range of socio-demographic and business characteristics, and their responses to the transport questions within stage 1. The interviews explored: the participants use of transport; costs and journey time issues associated with public transport use; transport issues and barriers specific to female entrepreneurs and potential solutions to transport problems. The interviews were transcribed and used to identify themes around barriers and solutions.

4. Results

92 women between the ages of 20–46 participated in the telephone survey (20–25: 11%, 26–30: 16%, 31–35: 24%, 36–40: 31%, 41–45: 16%, 46 +: 2%). The main language was English (32%) followed by Igbo (29%), Yoruba (22%) and Hausa (11%), with the remainder speaking “other” languages. 71% were married or cohabiting, 28% had never married and never lived together, and 1% were widowed. Unusually for Nigerian women, over a third did not have any children. The majority of the respondents (58.7%) were educated up to postgraduate level while 30.4% obtained college qualifications indicating that many of women had a higher than the national average level of education for women. Only a very low percentage of the sample had left education at secondary or primary level (8.7%).

The women had businesses that were spread across 19 business sectors with the majority engaged in four major enterprises — animal farming (20.7%), crop farming (14.1%), food and drinks (13.0%) and education (8.7%). The rest of the businesses spanned a range of industries: food and restaurants, manufacturing (other), and building and construction materials each represented 5.4% of the sample; chemicals, industrial materials; cleaning; media and entertainment and medical each represented 3.3%; and IT and telecommunication and retail each represented 2.2%. The remaining 5.4% were distributed across a range of other categories with just one business in each category. This reflects the domination of agriculture as a source of income generation in rural Nigeria.

The majority of the businesses had 5 or fewer full and part time employees excluding the business owner (17% had 0, 21% had 1–2, 34% had 3–5, 22% had 6–10 and 7% had 11 +). 56.5% of these women believed that the current transport system limited the growth of their business.

4.1. Transport use

The telephone survey set out to generate data regarding the availability and extent of use of both public transport and private vehicle(s) for business among the female entrepreneurs. 80% of the women stated that they used public transport for their business operations, while 17% did not. In terms of frequency, 51% of female entrepreneurs reported that they used public transport every day and only 1.4% said that they did not use it often (Table 2).

Table 2: Frequency of use of public transport and own vehicle.

Frequency of use	Public transport		Own vehicle	
	<i>Freq.</i>	<i>Percent</i>	<i>Freq.</i>	<i>Percent</i>
Every day	38	51.4%	15	36.6%
Few days weekly	20	27.0%	18	43.9%
Few days monthly	12	16.2%	5	12.2%
Not often	1	1.4%	2	4.9%
Missing values	3	4.1%	1	2.4%
Total	74	100%	41	100%

In terms of transport ownership, 23% of respondents owned a bicycle, 23% owned a motorcycle and 75% owned a car or other vehicle. Of this 75%, 33% owned more than one vehicle but only about 45% of vehicle owners use their vehicles for their business operations. In terms of frequency, about 37% of private vehicle owner/users used their vehicle every day

for their business (Table 2). This indicates that ownership of a vehicle did not necessarily lead to access to one for business purposes.

The survey investigated the types of public transport and private vehicles that the respondents use for their business activities. For those that used public transport, car taxi (25.7%) was the most commonly used mode, followed by van/truck/pickup (20.3%) and Keke (Tricycle, 18.9%) (Table 3). Of the 41 respondents who used their own vehicles, car was the most commonly used mode, (51.2%) followed by bus and van/truck/pickups (both 22%) (Table 3). 27% of the respondents used both private vehicles and public transport for their business activities. The main reasons that the private vehicle users did not use public transport were: cost, convenience and availability (either lack of availability of public transport, or having a private vehicle available).

Table 3: Types of public and own transport means.

Types of transport used	Public transport		Own transport	
	<i>Freq.</i>	<i>Percent</i>	<i>Freq.</i>	<i>Percent</i>
Buses	15	20.3%	9	22.0%
Car (taxi)	19	25.7%	21	51.2%
Danfo	2	2.7%	—	—
Keke (tricycle)	14	18.9%	1	2.4%
Motorcycle	8	10.8%	—	—
Van, trucks, pickups	15	20.3%	9	22.0%
Missing values	1	1.4%	1	2.4%
Total	74	100%	41	100%

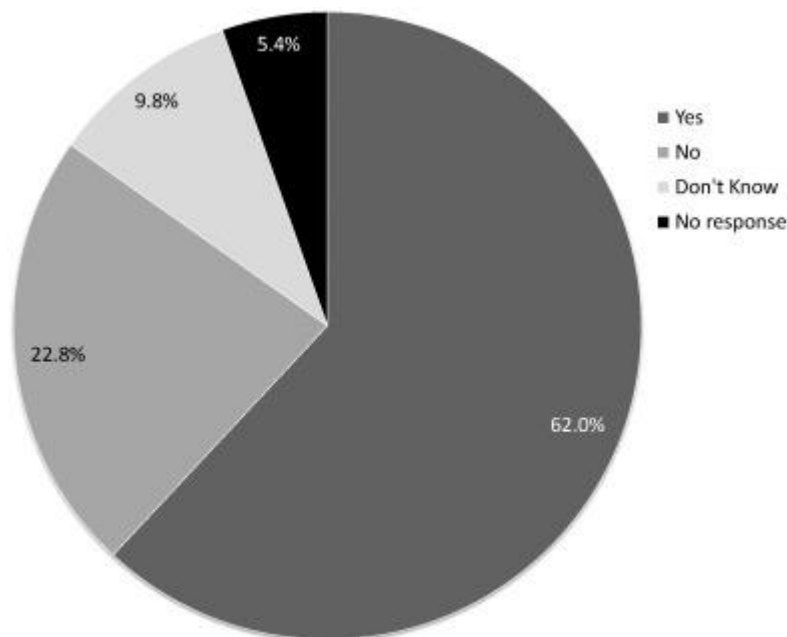
The purpose of trips made by public transport included a wide range of business activities, from collecting stock, to travelling to the business location, to travelling to market. About 24% of public transport users were travelling to market to sell; 35% travelling to market to buy, 35% to supply customers; 12% to receive deliveries; 37% to move goods; and 15% for business/employees travel. The comparable values for women travelling using their own vehicles were: 20% travelling to market to sell; 17% to travel to market to buy; 29% to travel to market to supply customers; 17% to receive deliveries; 24% to move items or goods and 32% for employees and business travels.

Looking more generally at the data, 80% of the public transport group and 60% of own transport group are likely to have been carrying goods at some point during their travels.

4.2. Transport barriers

One of the main objectives of this study was to investigate the impact of existing transport systems and policies on business growth. About 62% of the entrepreneurs reported that the existing transport system in the country limited their business growth (see Figure 2).

Figure 2: Do transport barriers limit growth?



The women entrepreneurs in the survey were asked what transport barriers they faced that were limiting their business growth. They listed: poor quality of roads having an impact on availability of services; more general lack of availability of services; limited capacity (for people and goods) on transport services; services not going to required destinations; services at inconvenient times; expensive services; and safety issues. The responses from the women varied, and not all of the women mentioned all of the barriers listed.

When these barriers were explored in more detail, poor road condition was the most frequently raised. The interviewees felt it caused, to some degree, many of the other barriers listed as illustrated by the quotes:

"The cost of transport is high ... time is wasted and ... all of this due to bad roads" (Yobe participant).

"There is no public transport that comes out, it is only Okada, no commercial vehicle comes out because the roads are not too good" (Ondo participant).

"Because of the way the roads are, people don't come down to buy the bread, except people at the neighbourhood" (Ondo participant).

The high cost of public transport was also cited as a barrier, often because high transport costs increase production costs which in turn increase the cost of the final product to the customer. In fact a number of respondents felt that it would be cheaper to have their own transport than it would be to use public transport. The women offered a number of reasons why transport was so expensive. These included increased maintenance costs due to poor quality roads and opportunistic fare costing due to the un-regulated nature of the public transport market.

"We use public transport so the cost is much higher than if I have my own vehicle and just maintain the vehicle and pay the driver" (Enugu participant).

Lack of availability of transport services in rural areas was perceived to be contributing to heightened demand, increased journey times and ultimately restricted mobility. This lack of availability was often thought to be caused by demand for local transport exceeding supply, and often led to people being left waiting at bus stops. This was exacerbated by the fact that many of the businesses were located away from the main transport routes.

“The farm is not on the major road, so getting to the farm is almost impossible. Staff who work there have to take a bus to a particular place and then walk a distance” (Nasarawa participant).

“The limitation of transport has increased my cost of production” (Ogun participant).

Journey length was another barrier that the women experienced, in particular in relation to public transport. Journeys were perceived to be too long, and unreliable. Some of the women also felt that journeys by public transport were much longer than those undertaken by private car due to poor road conditions, congestion, lack of available transport and a high number of breakdowns or accidents.

“Where I live, to the city centre is about 15 minutes, but I end up spending 2 hours because of the traffic ... it is annoying, it has an impact” (Nasarawa participant).

Finally a small number of the women cited unreliability and inconvenience as being barriers in terms of using public transport and as such suggested that they would rather use private transport.

A number of business impacts caused by transport barriers were stated. These included: expense with higher salaries having to be paid; provision of employee housing due to a lack of transport and long distances; lack of availability of employees with necessary expertise; lack of transport for employees to travel to work; missed opportunities for new business; increased time away from the business due to journey length; and increased stress due to unreliable transport services.

4.3. Transport solutions

One of the aims of this research was to give a voice to female entrepreneurs and record women led solutions to the transport problems identified. To this end the women were asked about how they were overcoming the transport problems that they had identified in the preceding discussions. It quickly became clear that the women were answering this question on an individual level rather than considering the wider solutions. In general, awareness of transport policies that were being implemented in the local area was very low among the women, with most being unaware of any policies, and those that were aware being unable to give much detail.

Ways in which the women were overcoming the barriers included making arrangements with familiar, reliable and trusted truck drivers to pick up and deliver materials and products, meaning less reliance on unreliable and expensive public transport services; travelling at different times of the day for safety reasons and also taking advantage of cheaper fares; changing the location of the business to provide a more convenient place for customers to travel to; and employing a supervisor or other responsible staff members to monitor and run the business due to absences caused by long journey times. The most common way to overcome many of the transport barriers highlighted however was to buy a car and learn to drive. This meant the women no longer had to rely on third parties to transport them or their goods, as illustrated by the following quotes:

“I have my personal car so I don't have to depend on public transport as they can disappoint” (Nasarawa participant).

“If they should have their own car they can go anywhere and nobody will assault them” (Ogun participant).

Since the women seemed to have limited ideas of what could be done to reduce transport barriers, some other options were suggested to them to gauge their opinion. Four areas were explored — improved infrastructure, availability of finance to purchase individual transport, women only transport and increased regulation of transport services. The greatest

amount of support was for improved infrastructure which was deemed to be crucial and it was suggested that other improvements would not be successful without first improving the roads.

“That is the most important aspect of any transport arrangement, if the roads are good then any transport provision will work better” (Ogun participant).

Support for the other ideas was more variable. The women generally felt that access to finance to purchase their own vehicles would be a good thing, but there were some concerns about the affordability of the loans in the longer term. Women only transport services (either operated by, or only carrying women) were also supported, but some women felt that services operated by women should be able to carry men to increase their viability. Finally increased regulation was generally supported, although the women were uncertain about the degree to which it should take place, and how it should apply to different transport modes.

5. Discussion

This research sought to explore how rural transport policy and planning in Nigeria could support growth-focused female entrepreneurs. The issue was approached from the perspective of the women, and, having removed financial and support barriers, identified what they perceived the transport barriers to be. It was clear from the research that transport is merely one of many barriers and 66% of the women who participated in the survey believed that there were wider issues preventing them from fully participating in business. These included social issues, cultural issues, economic issues and gender issues and broadly accorded with the barriers highlighted in the literature (e.g. Mordi *et al.*, 2010, Halkias *et al.*, 2011 and Singh *et al.*, 2011). For example, the women noted that: it can be difficult to undertake dual roles (looking after the family and running a business) successfully, especially without familial support; the men that women encountered during business activities do not always take them seriously or believe they are able to run a business; the women are sometimes subject to harassment or asked to pay bribes; pregnancy can be limiting for those in agriculture as it makes it more difficult to undertake many of the jobs required; and the stress of running a business can impact on family and work success. Whilst these fall outside the scope of this research, they provide valuable context to interpret the results.

Dealing firstly with the method, uniquely in a rural Nigerian context, the research used surveys and interviews administered by mobile phone to collect primary data. This is still a novel way to collect data in developing countries and has great merit due to much lower costs than traditional face-to-face approaches (Croke *et al.*, 2012). Whilst this research did not set out to trial the use of mobile phones for data collection, the uniqueness of this approach means it is worthwhile reflecting on its effectiveness. In this case it was found to be a highly effective approach to data collection for a small study among a highly dispersed population. A potential limitation of this research is the size of the sample, and the fact that women were only sampled from 16 of the states. This means that the results can only reflect the experiences of the women from these states.

The results show that the women participating in this study are not “average” Nigerian woman. They are less likely to be married, have fewer children and are (much) more educated than the average Nigerian woman (CIA, 2013 and National Population Commission, 2009). In addition, car and other vehicle ownership levels also appeared to be relatively high compared to the averages in rural areas. In general, 27.2% of rural households own a bicycle, 31.3% own a motorcycle and 5.7% own a car (National Bureau of Statistics, 2013) compared to 23%, 23% and 75% among the study sample. This reflects the purposive sampling from the winners of the YouWin! competition. These female entrepreneurs are not representative of Nigerian women; they are representative of growth-oriented female entrepreneurs.

The transport issues experienced appeared to be focussed around one main theme – the very poor condition of the roads. As the literature highlighted (Ume and Nwachukwu, 2011 and Igwe *et al.*, 2013), many of the roads in rural Nigeria are in very poor condition, and in some cases are impassable during the rainy season. The women felt that this was the main transport problem, and in turn was the main casual factor of a number of issues including availability, journey length, cost, reliability and convenience. These issues are not gendered issues and will have an impact on both women and men. However they are likely to have more of an impact on women as a result of additional pressures placed on them by cultural and societal norms (Madichie, 2009, Porter, 2007b and Woldie and Adersua, 2004), which make it harder for women to absorb the negative impact of poor transport provision into the running of their business with a successful outcome. For example, transport delays might make a woman late home and affect her ability to undertake family duties; and infrequent transport might make it more difficult for a woman to fit business activities around her other responsibilities.

This research sought to collect data from female entrepreneurs to fill a gap in knowledge relating to their transport needs and associated evidence based actions (Odufuwa *et al.*, 2012 and Porter, 2014). However it highlighted a lack of knowledge about wider policy based solutions perhaps reflecting that women's transport issues have been given little or no attention by transport planners and policymakers (Odufuwa *et al.*, 2012) and the lack of engagement of women in the policy process. As such, the women seemed mainly to be taking an individualistic approach to surmounting the transport barriers that they were facing by buying, or aiming to buy their own individual transport. This, it would appear, removes many of the transport barriers that they articulated but does not surmount the issue of very poor quality rural roads that remain the principal transport issue that affects business according to many of the respondents. In addition 75% of the women already owned a vehicle, but only 45% of these used it for business purposes. This raises the question of why women with a vehicle were not using it, given transport appears to be a barrier for them.

Nevertheless, private vehicles offer a range of advantages including a greater degree of availability, reliability, convenience and journey time along with reduced costs and improved privacy. To some degree this surmounts some of the cultural barriers associated with travelling using public transport. Buying a private vehicle may also have been the most popular solution because the women were simply unaware of other options or felt powerless in terms of actioning larger solutions. However existing female entrepreneurs overcoming transport barriers by buying their own vehicles does not reduce the likelihood of future female entrepreneurs encountering the same transport barriers because the barriers are not being removed, merely circumnavigated. Hence, during their nascent careers many female entrepreneurs will not have access to individual transport, and the lack of available transport may impact upon the scalability of their businesses.

Overall it is clear that at the moment the rural transport system in Nigeria does not support the growth ambitions of female entrepreneurs. As a result, for many it simply adds to innumerable barriers (Okafor and Mordi, 2010 and Mordi *et al.*, 2010) that they face in trying to become entrepreneurs and generate income. This applies both to existing female entrepreneurs, and those whose businesses have failed.

6. Conclusions

This paper has explored the transport barriers experienced by female entrepreneurs in rural Nigeria. In doing so it has identified that many of the barriers that the women face will impact upon both men and women. However it is clear that the impact will be worse for women due to myriad other barriers they face in terms of culture and religion. Fundamentally there is an issue with the quality of the roads that makes transport unreliable or simply unavailable and increases the costs. However work is being undertaken by a number of international organisations to improve this. Nevertheless the opinion of Starkey and Njenga (2010) that roads are not enough and improved transport services are also required must be taken

forward in order that maximum benefits are realised. It would appear that the benefits of improvements to the road network and public transport systems are fundamental to the continued development of rural areas. This could be complemented by improvements to other infrastructure, for example rail or waterborne transport, but these modes will always be limited in terms of their reach, and as such may not be as beneficial to dispersed rural businesses.

Whilst this study identified that the women had little idea of potential transport solutions it also demonstrated that they were willing to engage with the problem, and that with support and guidance from experts would be able to work towards developing solutions to support themselves and other female entrepreneurs. This therefore represents an opportunity for more research and pilot projects in rural areas to explore how women can work towards improving the transport system for the benefit of themselves and the entrepreneurs of the future.

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