

## Factors Influencing the Preference For Labour Saving Devices Among Rural Women In Kaduna State, Nigeria

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### Abstract

Rural women are often saddled with drudgery-laden tasks and require succor by way of labour saving devices (LSDs). This study was carried out to investigate the level of awareness of LSDs, actual use of LSDs, factors influencing the preference for, and constraints limiting the use of LSDs, Multi-stage sampling was used to select three Local Government Areas in Kaduna State, 228 respondents and four drudgery-laden tasks (DLTS). 2 on-farm and 2 off-farm-relating to maize production. Primary data were generated using a structured questionnaire and analyzed using descriptive statistics, 5-point Likert type scale and Chi square statistics. The results showed that the mean age of the respondents was 36.5 years while average household size was 7.8 persons. Majority (91.7%) of the respondents knew about LSDs while only 48.5% used devices on a regular basis. Chi-square analysis showed that age, education and household size significantly influenced preference for LSDs; marital status and occupation did not ( $P < 0.05$ ). Constraints identified include high cost and unavailability of devices. Interventions are suggested with a view to better harnessing of LSDs and improving the livelihoods of rural womenfolk.

**Key words:** Labour Saving Devices Rural Women

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### INTRODUCTION

The growing focus on women-centred policies and programmes in resource poor countries is premised on the assumption that empowering illiterate rural women is key to eradicating poverty and hunger. One focal aspect of this drive is the harnessing of labour-saving device (LSDs) for rural women. This is because rural women are often saddled with farm and domestic tasks and activities that are energy intensive and time consuming.

Evidence abound in literature to affirm that women bear the burden of most drudgery-laden tasks (DLTs) in rural settings. According to Ayanwale and Alimi (2004), these women are engaged not only in on-farm production activities but also post-harvest activities such as processing, transportation and marketing. In addition to all these aforementioned, these women still have to attend to household chores and caring for their children.

Characteristically, these tasks are mostly time and energy consuming. As posited by Gebremehin *et al.*, (2016), many of these smallholder women farmers use labour-intensive agricultural hand tools for onerous tasks such as weeding, planting, harvesting and food processing with minimal access to alternative energy sources.

The burden of drudgery-laden tasks on rural women has physical, economic and even health implications. Buttressing this view, Barret and Browne (1994) affirmed that these activities are mostly energy intensive and pose significant demands on their time and health. Also, Diamo and Paul-Bossuet (2013) emphasized that manually grinding grains is painful and time consuming for rural women with relentless daily workloads. According to Arora and Rada (2016), this dire scenario is worsened should any unexpected incident such as health crises occur; increasing the demand for labour by women thus making them more time poor.

### Problem Statement and Study Objectives

The lack of technologies and alternative energy sources creates a deficit trap, increasing poverty and adversely affecting livelihoods. Factors that engender this deficit trap are as follows:

- There is a sustained under-investment in LSDs that would save women's labour, time and also save fuel (Kelkar & Nathan 2005).

- The current demographic drift driven by male out migration to urban cities leave women with the burden of managing farm and household chores (Arora & Rada, 2016).
- A lot of attention has been given to ploughing and land preparation (men's domain), while very little has been done about weeding and processing (women's domain) (Sithole, 1992).

Undoubtedly, access to technologies that would save time and energy would have profound effect on livelihoods by enabling rural women to contribute more effectively (Barret & Browne, 1994; Gebremehin *et al.*, 2015).

Maize (*Zea mays*) is a major staple food crop in rural Nigeria, especially in the northern area where this study was carried out; women are greatly involved in the production and processing of maize, mostly manually. It is pertinent to ask whether these women are aware of LSDs and what factors influence their preference of these devices. The specific objectives of the study were to:

- i. Describe the socio-economic characteristics of the respondents.
- ii. Evaluate the level of awareness and perception of the respondents regarding LSDs.
- iii. Determine the relationship between, socio-economic variables and preference for LSDs.
- iv. Identify major constraints mitigating use of LSDs.

### **Methodology of the Study**

Kaduna State is situated within the Guinea Savanna ecological belt and north-west geopolitical zone of Nigeria. Fanning is the predominant occupation of the inhabitants of the state, especially grain production. Multistage sampling was used to purposively select three (3) rural based Local Government Areas (Igabi, Kaura and Soba LGA's) and randomly select eight (8) wards per LGA and 10 respondents per ward. A total of 240 rural women were interviewed using a pre-tested structured questionnaire. At the end of the exercise, 228 questionnaire (95%) were duly completed and generated the primary data which were analyzed using descriptive statistics, 5-point Likert type scale and chi-square statistics. Four (4), drudgery laden tasks (2 on-farm and 2-off-farm) relating to maize production and processing were evaluated. The on-farm tasks include weeding and harvesting while the off-farm tasks are shelling and milling.

### **Findings and Discussion**

The socio-economic characteristics of the respondents are shown in table 1:

The result in table 1 showed that the mean age of the respondents was 36.5 years; majority of the women (59%) were aged between 21 and 40 years. Educational attainment for the sample studied was generally poor and most of the respondents (87.5%) were married. The average household size was 7.8 persons; and regarding occupation, majority of the women were directly or indirectly engaged in fanning activities. These findings are similar to those of Ogunlela and Aisha (2009) and Bonjoru *et al.*, (2010) regarding the socio-economic characteristics of rural women in their respective studies.

### **Level of Awareness and Use of LSDs**

The study revealed that 93.2% of the respondents were aware of off-farm LSDs for shelling and milling, while only 12.7% were aware of on-farm LSDs for weeding and harvesting. This could be explained by the rural nature of the study area and the smallness of farm holdings they operated. On the actual use of LSDs, it was found that 28.3% of the respondents used LSDs for the shelling and milling of maize, while a dismal 5.3% used LSDs for weeding and harvesting; the latter confirming the earlier finding that most of the respondents did not know much about LSDs for weeding and harvesting.

**Table 1: Distribution of Respondents Based on Socio-economic Characteristics**

Socio Economic Characteristics	Frequency (N = 228)	Percentage (%)
<b>• Age</b>		
Below 20 years	14	6.3
2 1-30 years	50	21.8
31-40 years	85	37.2
41-50 years	44	19.0
Above 50 years	35	15.4
<b>Mean</b>	<b>36.5</b>	
<b>• Marital status</b>		
Single	6	2.6
Married	188	82.5
Divorced	13	5.7
Widowed	21	9.2
<b>• Educational Attainment</b>		
Primary education	42	18.4
Secondary education	17	7.5
Tertiary education	4	1.8
Islamic education	55	24.1
Adult literacy programme	27	11.8
No formal education	83	36.4
<b>• Family size</b>		
1-5 persons	61	26.8
6-10 persons	92	40.4
> 1 0 persons	75	32.8
<b>Average</b>	<b>7.8</b>	
<b>• Occupation</b>		
Full time farming	145	63.4
Farming/trading	49	21.5
Farming/civil service	6	2.6
Farming/other activities	28	12.3

*Source: Field survey (2016)*

**Table 2: Level of Awareness and use of LSDs**

Awareness and Use	On-Farm LSDs		Off-Farm LSDs	
	F	%	F	%
Aware and use always	3	1.3	24	10.5
Aware and use sometimes	9	3.9	41	18.0
Aware but seldom use	17	7.5	147	64.5
Not aware of LSDs	199	87.3	16	7.0
<b>Total</b>	<b>228</b>	<b>100</b>	<b>228</b>	<b>100</b>

*Source: Field study, (2016)*

### Perception of DLTs and LSDs by the Respondents

Having established the pros and cons of LSDs and DLTs respectively as espoused in literature, the study sought to evaluate the perception of the respondents regarding LSDs and DLTs. Based on a benchmark of 3, the respondents perception of DLTs are clearly expressed with mean values ranging from 3.36 to 4.31 - all above the benchmark of 3,

Similarly, the respondents perception of LSDs gave mean values ranging from 3.39 to 4.15; again all above the benchmark of 3. In contrast, however, the high mean values expressing the respondents' perception of LSDs do not translate to massive use of LSDs. These results further buttressed the objectives of this investigation; if the respondents perceive DLTs negatively and LSDs positively, what factors would explain the poor patronage of LSDs?

**Table 3: Respondents Perception of DLTs and LSDs**

S/N	Item	Agg. Score ( $\sum x$ )	Mean (x)
<b>Drudgery-laden Tasks (DLTs)</b>			
1.	Tasks are cumbersome and energy sapping	983	4.31
2.	Tasks are time consuming	883	3.87
3.	Drudgery-laden tasks have adverse health effects on the body	812	3.56
4.	The older one gets the more difficult to execute tasks	767	3.36
<b>Labour-saving Devices (LSDs)</b>			
1.	LSDs save time and allow for other chores to be handled	773	3.39
2.	Devices are not energy-sapping and enhance healthy living	884	3.87
3.	Larger volume of tasks can be accomplished with ease	817	3.58
4.	Both young and old can easily execute tasks using LSDs	786	3.44
5.	LSDs generally engender improved livelihoods	947	4.15

Source: Field study, (2016) Note: Benchmark (x) = 3

### Relationship between Socio-Economic Characteristics and Preference for LSDs

Using Chi-square statistics, the study sought to determine the influence of socio-economic characteristics of the respondents on the preference for LSDs. The results showed that there exists a significant relationship between age ( $\chi^2 = 110.21$ ), educational attainment ( $\chi^2 = 56.523$ ) and household size ( $\chi^2 = 101.42$ ) and preference for LSDs at  $P < 0.05$ . On the other hand, marital status and occupation did not show any significant relationship with the preference for LSDs ( $P < 0.05$ ).

**Table 4; Relationship between Socio-Economic Characteristics and Preference for LSDs**

Socio-economic variable	$\chi^2$ value	df	p-value	Decision
Age	110.21	3	0.000	S
Marital status	3.34	2	0.066	NS
Educational attainment	56.523	3	0.000	S
Family Size	101.422	2	0.000	S
Occupation	2.535	4	0.000	NS

Source: Field Study, (2016) Notes: S = Significant; NS = Not Significant ( $P < 0.05$ )

The results corroborates the findings of Akpoko (2007) in his study of factors influencing adoption of intermediate farm tools and equipment in Semi-Arid Nigeria.

### Constraints Mitigating The Use of LSDs

The identification of constraints limiting the use of LSDs in the study area was justified by the need to explain the low patronage by the respondents, in spite of the positive perception expressed of LSDs. Five major constraints were investigated as shown in table 5.

**Table 5: Constraints mitigating the use of LSDs**

Constraints	Frequency (n=228)	Percentage <(%>	Ranking
• Complex/technical nature of device	83	22.1	3 <sup>rd</sup>
• Devices expensive to purchase/use	109	29.0	1 <sup>st</sup>
• LSDs not easily found in the localities	92	24,5	
• Related to cost, most LSDs not easily owned by individuals/peasants	64	17.0	2 <sup>nd</sup> 4 <sup>th</sup>
• Preference for traditional/manual Methods	28	7.4	5 <sup>th</sup>
<b>Total</b>	<b>376*</b>	<b>100</b>	

*Source: Field study, (2016) Note: \* multiple responses were recorded*

The results in table 5 showed that cost of device was the most pronounced constraint identified by the respondents, followed by unavailability and complex/technical nature of devices (2<sup>nd</sup> and 3<sup>rd</sup> respectively). The 4<sup>th</sup> constraint in order of ranking had to do with the fact that some of the devices like milling machines cannot be owned by individuals in view of the size and cost of devices and, more importantly, the financial incapacitation of the respondents.

Interestingly, the results also showed that the preference for manual/traditional methods was not considered a major constraint-ranking last (7.4%). In other words, but for the constraints earlier highlighted, the respondents preference for LSDs for both on-farm an off-farm task is not contestable. The results are in agreement with the constraints identified by Akpoko (2007) and Diama and Paul-Bossnet in their respective studies.

### Conclusion and Recommendations

The respondents' awareness of LSDs as well as their preference for same is not in doubt. Conversely, the respondents' distaste for TLDs was amply expressed in their perception of TLDs. Invariably, embracing LSDs in executing on-farm and off-farm tasks would save time and energy, improve the healthy well-being of rural women and generally enhance livelihoods. The various constraints, identified by the respondents are real and mitigating and solicit the following recommendations.

- i. Encouraging rural women to form cooperatives/self-help groups to facilitate ownership and use of LSDs
- ii. Provision of LSDs within the reach of rural women and affordable rates charged for their usage/rental.
- iii. Intensifying research and design of pocket-friendly intermediate tools and equipment for individual ownership of devices.

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