ANALYSIS OF CONSUMER PREFERENCES FOR COWPEA VARIETIES IN OSUN STATE USING HEDONIC PRICING APPROACH

BY

OYEWALE, ABAYOMI YUSUF

B. Agric. (Agricultural Economics), Ife

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CERTIFICATION

This thesis, written by OYEWALEAbayomi Yusuf has been read, approved and adjudged to meet part of the requirements for the award of Master of Science (M.Sc.) Degree in Agricultural Economics of ObafemiAwolowo University, Ile-Ife, Osun State, Nigeria.

…….....

Dr. R. Kassali

(Supervisor)

Department of Agricultural Economics,

ObafemiAwolowo University,

Ile-Ife, Osun State.

……

Prof. A. A. Tijani

(Chief Examiner)

Department of Agricultural Economics,

ObafemiAwolowo University,

Ile-Ife, Osun State.

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DEDICATION

This thesis is dedicated to the Almighty God, the Morning Star and the Rock of Ages for his mercy endureth forever. Also, to my Grandparents: Late Mrs SifawuMojoyinolaOyewale and Late Mrs Abigail MoradekeFakorede.

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LIST OF ACRONYMS

ANOVA	Analysis of Variance
BLT	Bulletin of Tropical Agriculture
CIAT	International Centre for Tropical Agriculture
CRSP	Collaborative Research and Support Programme
CV	Contingent Variation
FAO	United Nations Food and Agriculture Organisation
FAOSTAT	Food andAgriculture OrganisationStatistics
FCFA	Monetary Unit in Cote d'ivore
FCT	Federal Capital Territory
ICRISAT	International Crops Research Institute for the Semi-Arid-Tropics
IITA	International Institute of Tropical Agriculture
ITF	International Task Force
K Cal	Kilocalorie
KG	Kilogram
LGAs	Local Government Areas
NBS	National Bureau of Statistics
OECD	Organization of Economic Community Development
TL II	Tropical Legumes II project
USAID	United States Agency for International Development

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ABSTRACT

The study described the socio-economic characteristics of consumers, identified cowpea varieties, their attributes and willingness to pay (WTP) for each variety and determined the factors that influence WTP for cowpea varieties in the Osun State Analysis of consumer preferences for cowpea varieties in Osun State with a view to identifying attributes that determine price variation among cowpea varieties in the study area.

Multi stage sampling technique was used to randomly select 210 respondents from the study area: 180 consumers and 30 retailers.In the first stage, six Local Government Areas (LGAs) were purposively selected due to their high population density. Second stage, three towns were randomly selected in each of the LGAs. At the third stage,a random selection of 10 households in each town was done. A total of 180 households were sampled. In addition, 5 cowpea retailers were randomly selected from each LGA making a total of 210 respondents. This sample size was used for the study because of the time and financial constraint. Primary data were collected on socio-economic characteristics, household income, awareness and perception of consumers about cowpea varieties and willingness to pay and attributes of cowpea varieties with the use of structured questionnaire. Data collected were analysed using both descriptive and regression analysis.

The results of the descriptive analysis showed that majority (97.8%) of household are male headed and fall between the ages of 31 and 50. The consumers had an average of five household members and household average monthly income of ₦86,642 (US$ 275 at $1 = ₦315). Most of the respondents (85%) acquired formal basic education. Thirteen varieties of cowpea were

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found. The varieties are *Gombe, Drum, Olo, Oloka, Sokoto, Milk, Wuwo, Oloyin, Jibia, Otili*, Ife brown, Ife bimpe and *Feregede* but only the first nine varieties were common in the market. The quality of each variety differs which explained variation in their price. Majority of consumers (85.6%) purchased 5kg of cowpea and below per week while many of them (63%) made dishes from cowpea three to four times per week. Majority (80%) are aware of more than five varieties of cowpea. The *Oloyin* variety was mostly preferred by 78% of the consumers. Weevil tolerance was the highest ranked among the cowpea attributes with the score of 2139. Oloyin had the highest WTP followed by Milk and Drum with ₦303.40, ₦237.70 and ₦213.74 per kg respectively. Hedonic pricing method which provides a statistical estimate of premiums and discounts for cowpea attributes. Results indicated that weevil resistance was the most important attribute. Cowpeas with weevil damage tolerance, brown colour, large grain size and short cooking time command price premium for almost all the varieties. The consumers discount prices for insect damage, small size, white colour, smooth skin and grain colour mixed together.

The study concluded that consumers preferred cowpea varieties with weevil damage resistance, brown colour, large grain size and short cooking time.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Cowpea (*Vignaunguiculata*) is an ancient crop known to man and which was domesticated near Southern Africa, before it was widely spread to East, West Africa and Asia. Today it is grown mostly in semi-arid tropical zones across Africa, Asia, Europe and the America (IITA, 2015). Farmers in Africa produced almost 95% of the global cowpea output on a surface area of more than 11 million hectares followed by Asia (3.2%), the America (1.3%) and Europe (0.5%) ((FAOSTAT, 2015).

Nigeria is the world's largest producerand consumer of cowpea, accounting for 61% of production in Africa and 58% worldwide (IITA,2015).Between 2000 and 2013 the country produced an average of 2.7 million metric tons of cowpea. In 2011, Nigeria's contribution to global cowpea production dropped to 37.8%, the lowest in the last 50 years (Food and Agricultural Organization (FAO), 2012).In 2012, production reached a record high of over five million metric tons (FAOSTAT, 2015). The crop is grown mostly in the semi-arid Central and North West, but also in North-Central and North-Eastern Nigeria, where it constitutes the most important grain legume crop (Enoch, 2015). Despite its leading position, Nigeria still suffers demand deficit averaging 469,000 tons per annum. It is estimated that Nigeria's average annual imports of 260,000 tons per annum from Niger accounts for about 73% of Niger's surplus production. Nigeria also imports from Cameroon, Chad and Benin (Langyintuo*et al*., 2003).

The demand for cowpea in Nigeria is driven by its large population of over 177 million people, with an average growth rate of 2.47 per annum (CIAT, 2014). Since the 1980s, the increased

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demand for cowpea has reportedly led to the cultivation of cowpea as a sole crop in many parts of the country (Wakili, 2013).

Cowpea is widely traded and consumed outside the mainproduction areas in the country. It isproduced in 32 of 36 states of Nigeria including the Federal Capital Territory (FCT). Zamfara is the largest producer, followed by Borno, Kano, Jigawa, Bauchi, Sokoto, Niger, Kaduna and Katsina states. These top 10 states account for about 82% of the country's total area planted to cowpea. Eighteen of the 32 states and FCT showed declines inthe area planted to cowpea over the 1994/95 to 2005/06period. Notable among thesewere Borno (-12.63%), Kano(-5.13%), and Bauchi (-5.08%); the national average Rate of Growth (ROG) was -3.95%. Four of the top 10 producing states showed substantial ROGs for yield; these were Sokoto (11.28%), Kano (7.41%), Borno (7.33%) and Niger (4.88%) (ICRISAT, 2011).

Cowpea is an important legume in Nigeria which serves as a source of farm income .According to Afolami (2002), cowpea has a high potential to increase farmers' and traders' incomes, thereby contributing to poverty reduction and food security. As a food crop, cowpea is aprimary source of cheap protein for the ever-growing population of both rural and urbandwellers. As a relatively inexpensive source of food, cowpea fits the needs of the rural and urban poor. Cowpea is highly nutritive. Its nutritive value lies in its high protein content of about 23%, which is double that of cereals with a protein content of about 13% (Bressami,1985). It therefore has a tremendous potential to contribute to the alleviation of malnutrition among poor families (Mcfarlene, 1983). Epidemiological studies in over 40 countries of the world show a direct link between consumption of dry beans and reduced incidences of chronic diseases including cancer, and it is also used to enhance child survival (USAID, 2003). Cowpea is a nutritious component

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in livestock feed. Its forage contributes significantly to animal feed mainly during the dry season when the demand for feed reaches its peak.

Cowpea are consumed regularly in virtually every household in Nigeria, although some cowpeas are purchased as green pods at harvest time and in some regions, the leaves are eaten as green while the majority of cowpeas are sold as grain in bulk form. Vendors display large bowls of cowpea that consumers can inspect before making their purchase. There are several characteristics of cowpeas that have been shown to be preferred by consumers but the main varieties available on the open markets in West Africa are white cowpeas seeds with black eye, but in some areas red or black speckled cowpeas are preferred (Lambot, 2000).

Cowpeas vary according to the size of the grain, colour, skin texture, eyecolour, and insect damage tolerance. The colour of the cowpeas (often referred to as skin colour or testa colour) varies and can be white, black, brown or red. Cowpea skin can be a uniform colour or speckled. The skin or outer coating of the cowpeas can be rough or smooth. The colour of the eye of the cowpeas can be black, grey or brown (Murdock *et al*., 2003). All these attributes are peculiar to different varieties which stimulate consumer preferences as well as Willingness to Pay (WTP) of the consumers. Dominant varieties of cowpea grown in Nigeria include: IT97K-499-35, IT89KD-288, IT90K-277-2, IT89KD-391, and IT98K-205-8.(ICRISAT, 2011). When these varieties reach markets, they become difficult to identify by their code varietal names. They have been categorized in line with physical features and their price premium (Afolami, 2002).Goods are valued by consumers because of their utility-deriving characteristics (Rosen, 1974). Thus, the quality or value of a whole good depends on its individual characteristics. The quality of a specific item as evidenced through consumers acceptance and purchase is not determined by a

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few visible characteristics (evident). It is more a complex composition of several traits where many of them are not visible (cryptic) (Von, 1978).

Characteristics of cowpea which influence the quality can be separated into two groups, evident and cryptic characteristics. Evident traits like colour or shape are visible to consumers whereas cryptic traits are not visible and can only be judged after consumption. Examples of cryptic traits are composite ingredients such as sucrose content (sweetness), cooking ability

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