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Evaluation of consumers' choice of wooden dining furniture in Southwestern Nigeria: A market strategy for furniture manufacturers and marketers

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This study evaluated consumers' choice of wooden dining furniture in Southwestern Nigeria to provide information that could guide business decisions by manufacturers and marketers of wooden dining furniture. Data were collected using semi-structured questionnaires administered on 345 randomly selected respondents between July and December, 2008. These were analyzed using descriptive statistics, ANOVA and Chi-square on SPSS 15.0 software. The result showed that 84.38, 94.44 and 82.14% of the respondents in Lagos, Ibadan and Osogbo, respectively, would change their dining set when damaged. The chi-square analysis showed a significant relationship between respondents with high income and showroom, and respondents with high income and roadside purchases (p<0.05). The relationship between respondents with low income and special arrangement with furniture makers in workshops was also significant (p<0.05). The determinants of consumers' choice for wooden dining furniture were: durability, 89.26%; design/finishing, 80.43%; colour/grain, 63.64%; wood species, 52.31%; and wood grade, 48.12%. Only 19, 25 and 18% of the respondents in Lagos, Ibadan and Osogbo, respectively, had knowledge of wood species used for furniture making. The preferred wood species were: *Mansonia altissima,* 89.00%; *Khaya ivorensis,* 80.00%; *Cordia millenii,* 54.00%; *Milicia excelsa,* 28.00%; *Terminalia ivorensis,* 18.00% and *Gaurea cedrata,* 5.00%, respectively. There was a significant difference (p<0.05) in consumers preference for these wood species both within and between the cities. The study recommended increase use of durable Lesser Used Species (LUS) of trees for producing dining furniture and location of showrooms to target high income earners.

Key words: Wooden dining furniture, consumers' choice, manufacturers and marketers.

INTRODUCTION

Over the last two decades of Nigeria economic recession, the Nigeria furniture industry though operating at abysmal performance has been increasing in number. The 1991 and 2001 reports of Raw Materials Research and Development Council, Lagos on techno-economic survey placed the number of major wooden furniture industry in Nigeria at above 1007 and 1200 in 1991 and 2001, respectively. Olorunnisola (2000) also noted that the Nigeria economic recession beginning from early 1980s did not have a significant negative effect on the proliferation of small scale furniture industry in the country. As the furniture industry increases in number, its market has also become highly competitive, and consumers are becoming more conscious about the furniture they purchase. Thus, the furniture manufacturers need to understand what determine consumers' choice of their products; wooden furniture.

Many studies have shown that consumers purchase forest products based on products' attributes (Sinclair, 1992; Fell, 2003). Sinclair (1992) stated these attributes

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Abbreviations: SSFI, Small scale furniture industry; **LSFI,** large scale furniture industry; **MSFI,** medium Small scale furniture industry; **LUS,** lesser used species; **CUS,** commonly used species.

to include both tangible and non-tangible products' attributes such as service and reputation of sales assistance. In evaluating consumers' preference for some Canadian lesser known wood species, colour and grain were the most important appearance attributes, while consumers' preference were found to be influenced by several demographic factors including gender and location - urban versus sub-urban residents (Fell, 2003). Betancourt and Gautschi (1990) identified one important non-tangible attribute to be ambience, whereby consumers seek out for products that evoke certain feelings and these have important marketing implications for forest products. Fell (2003) noted that ambiences vary with wood species. The scientist reported that red oak has classic ambience, sugar maple a modern ambience and birch a warm ambience. However, Bumgardner and Bowe (2002) discovered that most consumers could hardly identify wood species visually and therefore rely on species names when purchasing wood products. Inability to identify wood species visually has led to differences between respondent's name-based and appearance-based evaluation of the same species (Roos et al, 2005). Considering the fact that most consumers could hardly identify wood species used when purchasing wood products, the need arises for an in depth evaluation of the determinants of consumers' choice of wood products. These determinants if known could provide a useful management and decision making framework for wood product manufacturers and marketers. This study therefore evaluates consumers' perception with particular reference to their choice of wooden dining furniture. Dining furniture was selected for this study because preliminary survey on techno-economic analysis of wood species utilized in furniture industry in selected cities in Nigeria showed that most people in Nigeria are familiar with this product (Arowosoge et al, 2008a) than cabinet which has been studied extensively in developed countries. This study therefore examined the socio-economic characteristics of consumers of wooden dining furniture, analyzed the determining factors affecting con-sumers' choice of wooden dining furniture and assessed consumers' preferences and knowledge of wood species used for wooden dining furniture.

METHODOLOGY

The study was carried out in Lagos, Ibadan and Osogbo metropolitan areas of the South-Western zone of Nigeria. Lagos is located between latitude 6°20` and 6°40` North of the equator and longitude 2°40` and 4°25` East of Greenwich Meridian. Lagos was the capital of Nigeria until 1992 when it was moved to Abuja. As a leading business empire with over 80% of the total wood-based industries in Nigeria, Lagos has a land mass area of 3,671 km^2 and a population of 9,013,534 people of varying cultures and backgrounds (Geohive, 2007; FDF, 1997). Ibadan lies between latitude 7° and 9° North of the equator and longitude 3° and 5° East of Greenwich Meridian, a distance of about 145 km North East of Lagos, It is the capital of Oyo state and the largest city in West Africa with a total land mass

of 26,500 km^2 and a population of 5,591,589 (Geohive, 2007). Osogbo the capital of Osun state is located between latitude 7°50` North of the equator and longitude 4°35` East of Greenwich Meridian (Duce and Ojo, 1992). Osun state has a total land area of 9,026 km^2 and a population of 3,423,535 (Geohive, 2007).

Lagos, Ibadan and Osogbo metropolitan areas with 16, five and two local government areas (LGAs) respectively were selected for this study because they represent areas with relatively more abundant furniture industry in South-Western Nigeria (Raw Materials Research and Development Council, 2001). They are also the areas with high population of people belonging to the middle and high income groups. The study targeted working class respondents in (reputable private organizations) banks, firms, manufacturing and construction companies that earn higher income than the government workers. This was based on the assumption that people with high income are likely to change their dining sets more frequently than the low income earners and this would have market implications. Fifteen respondents were randomly selected from the private organizations in each of the selected Local Government Areas (LGAs) and interviewed between July and December, 2008 using semi-structured questionnaires to generate data. Thus a total of 240, 75 and 30 questionnaires were administered in Lagos, Ibadan and Osogbo metropolitan areas respectively. However, only 224, 72 and 28 of the retrieved questionnaires were found useful. Data were collected on age, income, place of purchase, factors determining consumers' choice of wooden dining furniture and the preferred wood species for producing wooden dining furniture.

The collected data were subjected to statistical analyses using descriptive statistics, chi-square and ANOVA on SPSS 15 software version. Chi- square analysis was used to determine the relationship between income and place of purchase. ANOVA using randomized complete block design was adapted to test for: (i) significance differences in the rated values attached to the determinants of consumers' choice of wooden dining furniture across the cities, and (ii) the significant differences in consumers' preference for wood species used for wooden dining furniture in the cities. Respondents' determinants of wooden dining furniture were obtained using ordinal ranking. The respondents were to score between 1 and 5 for each determinant in increasing order of importance and zero for non applicable options. The analysis of the ranking involved the summation of the product of the number of respondent for a particular determinant by the weight given and this was expressed as a percentage of the maximum score point. The maximum score point is the product of the number of respondent and the maximum point any determinant can have. The determinant with highest percentage score was considered to be the most preferred than those with lower percentage score. This relationship used by Tee and Verinumbe (2007) as adapted from Popoola and Galaudu (2000) is as follows:

$$\text{Determinant ranking} = \sum_{i=1}^{n} FS_i / nSM \times 100/1 \quad \text{...Equation 1}$$

Where F = Frequency of respondents with the same score for determinant; S_i = respondents score for determinant and it ranges from 1 to 5 in this study; nSM = product of the number of respondent interviewed and the maximum score point of a determinant; and n = number of respondents interviewed.

In evaluating the preference rating of wood species, respondents were asked to list five wood species in order of preference. The wood species listed were prioritized to determine the order of preference and importance using the format of International Centre for Research in Agroforestry (ICRAF) adapted from Popoola et al (1996). The formula is as follows:

Table 1. The socio-economic characteristics of the consumers' of wooden dining furniture in the study area.

Variable	Categories	Lagos		Ibadan		Osogbo	
		Freq.	%	Freq.	%	Freq.	%
Age (years)	< 30	21	9.38	8	11.11	4	14.29
	31 – 40	70	31.25	17	23.61	7	25.00
	41 – 50	97	43.30	30	41.67	12	42.86
	51 – 60	32	14.29	15	20.83	4	14.29
	>61	4	1.79	2	2.78	1	3.57
	Total	224	100	72	100	28	100
	Mean Age	45.20		42.24		40.59	
Educational Status	Primary education	0	0	0	0	1	3.57
	Secondary education	26	11.61	14	19.44	5	17.86
	Tertiary education	198	88.39	58	80.56	22	78.57
	Total	224	100	72	100	28	100
Monthly Income	≤50,000	57	25.45	39	54.17	12	42.86
	51,000 –100,000	118	52.68	22	30.56	8	28.57
	101,000 – 150,000	24	10.71	8	11.11	4	14.29
	151,000 – 200,000	15	6.70	2	2.78	2	7.14
	>200,000	10	4.46	1	1.39	2	7.14
	Total	224	100	72	100	28	100
	Mean income	₦85,797.00		₦53,292.00		₦46,571.00	
Reasons for changing dining set	Damage	179	79.91	68	94.44	23	82.14
	Design invoke	45	20.09	4	5.56	5	17.86
	Total	224	100	72	100	28	100
	Showroom	31	13.84	4	5.56	1	3.57
Place of purchase	Roadside	90	40.18	6	8.33	5	17.86
	Special arrangement at workshop	103	45.98	62	86.11	22	78.57
	Total	224	100	72	100	28	100

Freq. = Frequency.

$$\% \text{ mention of wood species} = \frac{\text{Number of times wood species was mentioned}}{\text{Number of interview conducted}} \times 100 \dots \text{Equation 2}$$

RESULTS AND DISCUSSION

Socio-economic characteristics of consumers of wooden dinning furniture in south-western Nigeria

The data on socio-economic characteristics of respondents (Table I) showed that their mean age were: Lagos (45.20), Ibadan (42.24) and Osogbo (40.59) years, respectively. This means the consumers of wooden dinning furniture in the region were mostly middle aged. Furthermore, they were educated with the majority in Lagos (88.39%), Ibadan (80.56%) and Osogbo (78.57%) attaining tertiary education. In terms of income; Lagos had the highest mean monthly income of ₦85, 797.00, Ibadan ₦53, 292.00 and Osogbo, the least monthly income of ₦46, 571.00 only. This income trend is expected since Lagos is known to be a commercial city of

the country with more than 80% of the total industries in Nigeria (FDF, 1997). Also 79.91, 94.44 and 82.14% of the respondents in Lagos, Ibadan and Osogbo, respectively, will change their dining furniture when damaged while 20.09, 5.56 and 17.86% respectively will change it base on design which is in invogue. The data on place of purchase showed that most respondents preferred buying wooden dinning furniture on special arrangement with the producers in their workshops distributed as; Lagos (45.98%), Ibadan (86.11%) and Osogbo (78.57%). This was followed by buying from roadside with 40.18, 8.33 and 17.86% respondents in Lagos, Ibadan and Osogbo respectively. Fewer respondents, distributed as 13.84, 5.56 and 3.57% in Lagos, Ibadan and Osogbo, respectively, purchased wooden dinning furniture in showrooms. The foregoing trend could be explained by the fact that most respondents desired getting their furniture sets at cheaper price. Thus, they preferred making special arrangement with furniture producers in order to access the opportunity of bargaining to a reduced cost, and also secure quality, and the durability they desire to have. It is generally believed that furniture displayed at the roadside though attractive; may not be as durable as they are produced mainly for passersby who may not be able to locate the

Table 2. Chi-square analysis of the relationship between income and place of purchase across the study area.

Income	Place of purchase			Total	Df	X^2 calculated	P-level
	SR	RS	WS				
≤50,000		10	106	116			
51,000 - 100,000		54	56	110			
101,000 – 150,000		15	17	32	8	351.173*	0.000
151,000 – 200,000	22	12	5	39			
>200,000	14	10	3	27			
Total	36	101	187	324			

Note: * = Significant at 5% probability level; SR = showroom;RS = roadside; WS = workshop.

Table 3. Determinants of consumers' choice of wooden dining furniture.

Determinants	Lagos			Ibadan			Osogbo			Row total		
	PS	NSM	PR (%)	PS	NSM	PR (%)	PS	NSM	PR (%)	PS	NSM	PR (%)
Durability	985	1120 (224)	87.95	334	360 (72)	92.78	127	140 (28)	90.71	1446	1620 (324)	89.26
Design/Finishing	904	1120 (224)	80.71	282	360 (72)	78.33	117	140 (28)	83.57	1303	1620 (324)	80.43
Colour/wood grain	712	1120 (224)	63.57	224	360 (72)	62.22	95	140 (28)	67.86	1031	1620 (324)	63.64
Wood species	112	210 (42)	53,33	44	90 (18)	48.89	14	25 (5)	56	170	325 (65)	52.31
Wood grade	180	370 (74)	48.65	50	110 (22)	45.45	13	25 (5)	52	243	505 (101)	48.12

Values in brackets are the number of respondents interviewed in each case. PS = Products total score; NSM = Maximum score-able point; PR = Product rating in %.

furniture makers. With respect to showrooms, it is believed that furniture's displayed in showrooms are expensive since most of them are owned by medium and large scale furniture industry. Adeyoju (1975) in a comparative study of the prices of furniture items produced by the Small Scale Furniture Industry (SSFI) and the Large Scale Furniture Industry (LSFI) showed that the prices of LSFI for furniture items produced were quite higher than the prices of the SSFI, even when the products from the two industries were essentially of the same quality. The difference in price was attributed to the promotion and innovation charges paid by the LSFI.

Relationship between income and place of purchase

The chi-square analysis showed that the relationship between respondents' level of income and places of purchase (Table 2) were significant (p<0.05). This shows that respondents had varying income levels and the choice of point of purchasing furniture sets were guided by these income levels. Thus, most consumers with incomes above ₦150, 000.00 purchased dining furniture in showrooms. Some of the high income earning consumers also patronized the displayed dinning furniture at the roadside. The low income class (≤ ₦50, 000.00) prefer buying their wooden dinning furniture in workshop based on special arrangement (Table 2). From

the foregoing, the high income people tend to purchase wooden dining furniture from both showroom and the roadside while, low income people purchase wooden dining furniture mainly by making special arrangement with furniture makers in workshop. These findings corroborate that of Arowosoge et al. (2008b) that the consumers of furniture items displayed in showrooms are individuals, government and private organizations with high purchasing power who always want furniture that would create impressions about their taste and lifestyle and they are always ready to pay the price. They noted that with respect to taste furniture displayed in showrooms are better off as they are produced by MSFI and LSFI who always come out with new designs and good finishing that could satisfy the demand of their consumers. On the other hand, the low income people would prefer to bargain with furniture manufacturer in their workshop as earlier reported so as to reduce the prices of the furniture. With the above facts, this study therefore submits that income has relationship with place of purchase.

Factors determining consumers' choice of wooden dining furniture

The data in Table 3 show factors affecting consumers' choice of wooden dining furniture in South-western Nigeria. The aggregate rating of the determinants (Table

Table 4. ANOVA of the determinants of consumers' choice of wooden dining furniture in the study area.

Source of variation	DF	MS	Fcal	P-level
Blocks (Cities)	2	18.83847	4.259683NS	0.055003
Treatments (Determinants)	4	910.6262	205.9073*	4.25E-08
Error	8	4.422505		
Total	14			

*Significant at 5% probability level; NS = not Significant at 5% probability level; Df = degree of freedom; MS = mean sum of squares; Fcal. = calculated frequency; P = probability.

Table 5. Consumers' preference rating for wood species in Lagos, Ibadan and Osogbo.

Wood species	Lagos			Ibadan			Osogbo			Row total		
	NTM	%M	Rank	NTM	%M	Rank	NTM	%M	Rank	NTM	%M	Rank
Mansonia	39 (42)	93	1st	15 (18)	83%	1st	4 (5)	80%	1st	58 (65)	89%	1st
Mahogany	34 (42)	81	2nd	13 (18)	72%	2nd	5 (5)	100%	2nd	52 (65)	80%	2nd
Cordia	21 (42)	50	3rd	11 (18)	61%	3rd	3 (5)	60%	3rd	35 (65)	54%	3rd
Milicia	12 (42)	29	4th	4 (18)	22%	5th	2 (5)	40%	4th	18 (65)	28%	4th
Black afara	5 (42)	12	5th	6 (18)	33%	4th	1 (5)	20%	5th	12 (65)	18%	5th
Gaurea	3 (42)	7	6th	0 (18)	0%	6th	0 (5)	0%	6th	3 (65)	5%	6th

Figures in brackets are the numbers of valid interview for wood species.NTM = Number of times wood species was mentioned; %M = % mention of wood species

3; column 13) by respondents show that wood durability (89.26%), design/finishing (80.43%), colour/wood grain (63.64%), wood species (52.31%), and wood grade (48.12%) were the principal determinants in that order. The earlier findings that 79.91, 94.44 and 82.14% of respondents in Lagos, Ibadan and Osogbo respectively would only change their dining sets when damaged (Table 1) further justify durability as the principal determinant of consumers' choice of the wooden dinning furniture. The ANOVA results (Table 4) revealed that there were significant differences in the determinants of consumers' choice of wooden dining furniture while the between cities differences were not significant. Thus, the determinants of consumers' choice of wooden dining furniture were the same in all the cities studied.

Result on respondents' knowledge of preferences for wood species in South-western Nigeria.

Only 42, 18 and 5 respondents constituting 19, 25 and 18% of the respondents in Lagos, Ibadan and Osogbo claimed to have knowledge of wood species used for furniture making. This small size of respondents shows that most consumers of wooden dining furniture did not have knowledge of wood species. The wood species listed were: *Mansonia altissima* (Mansonia), *Cordia millenii* (Cordia), *Khaya ivorensis* (Mahogany), *Gaurea cedrata* (Gaurea)*, Milicia excelsa* (Milicia)*, and Terminalia ivorensis*

(Black afara). Five of the six wood species listed except Black afara have been rated as wood of high grade species that are used for high class furniture (Beak Consultants, 1999). These respondents were therefore asked to rate these wood species. The result (Table 5) shows that the aggregated consumers' preference for wood species across the study area is in the order of 89, 80, 54, 28, 18 and 5% for Mansonia, Mahogany, Cordia, Milicia, Black afara and Gaurea respectively. Mansonia was most preferred in the three cities with rating of 93, 83 and 80% in Lagos, Ibadan and Osogbo respectively, while Gaurea was not mentioned in Ibadan and Osogbo. Arowosoge et al. (2009) are of the opinion that the high preference for Mansonia among end users is the high value attached to its beautiful grains which are of varied colours. It has also been found to be the only wood with grey colour and purplish cast (General Woods and Veneer Consultants Ltd, 1994). The ANOVA results revealed that there were significant differences in consumers' preference for the wood species listed both within and across the cities studied (Table 6). This result follows the finding of Roos et al. (2005) where significant differences were obtained in respondents' choice of named wood species. This implies that the preference for wood species by the few respondents who had knowledge of them was high and would significantly influence their choice and decisions on the products from these species. Similarly, respondents in Lagos, Ibadan, and Osogbo attached different values on the wood species considered.

Table 6. ANOVA of Consumers' preference rating for wood species in the study area.

Source of variation	Df	MS	Fcal.	P- level
Blocks (Cities)	2	2631.486	64.42148*	1.94E-06
Treatments (Wood species)	5	143.5529	4.324702*	0.044195
Error	10	40.84795		
Total	17			

*Significant at 5% probability level; Df = degree of freedom; MS = mean sum of squares; Fcal. = calculated frequency; P = probability.

A case for increase utilization of Lesser Used Species (LUS) of trees for furniture

The findings of this study showed that durability, design/finishing and colour/grains of wood are the first three reasons why most consumers would purchase wooden dining furniture and that most consumers did not have knowledge of the wood species used for dining furniture making. These findings can be leveraged for marketing and development of LUS of trees that have strength properties that are suitable for furniture making. This is because previous studies on Furniture industry in Nigeria have shown that few Commonly Used Species (CUS) of trees that are not readily available, expensive and of short rotation are used for furniture making. Olorunnisola (2000) listed these CUS to include Mansonia, Cordia, Mahogamy, *Nesogordonia papaverifera* (Oro) and *Tectona grandis* (Teak). Arowosoge et al. (2009) also observed that 15 species are mainly used for furniture making in Nigeria. These CUS constitute only a small percentage of the total known wood species that abound in the Nigeria forest which according to Beak consultants (1999) are 600. Since, most consumers would prefer a durable wood for their dining furniture, then LUS that have good strength properties can be used for wooden dining furniture rather than the expensive, non - readily available and short rotation CUS that are mainly used by the furniture industry.

With respect to durability, which is synonymous to good strength property, the most important single index of strength property for structural design and performance is specific gravity (Winandy, 1994; Haygreen and Bowyer, 1996; Ustar and Guray 2000). This according to the scientists is because many wood properties such as dimensional stability with moisture content changes, machinability, conversion, and ability to retain paint are closely related to specific gravity. According to General Woods and Veneers Consultants Ltd (1994), wood with medium specific gravity of 0.4 - 1.0 are good for furniture. Nilson (1998) also gave the specific gravity of between 0.4 and 0.85 for furniture and similar products and listed the following LUS with their specific gravity to be very suitable for furniture; *Antiaris toxicaria* (Oro) with a specific gravity of 0.43, *Celtis mildbraedii* (ita) with a specific gravity of 0.75 and *Petersianthus macrocarpus* (Akasun) with a specific gravity of 0.81. Arowosoge et al.

(2008b) also found *Gmelina arborea* with a specific gravity of 0.40 and *Aningeria robusta* with a specific gravity of 0.50 to be suitable for furniture making in terms of strength properties and economic wise. These afore mentioned wood species despite their suitable strength properties are still not well used for furniture making by the furniture industry and are regarded as LUS. From the report of IITO (2002), timber production from *Aningeria robusta* is low due to low demand, while its status is listed as unknown in most countries. Beak Consultants (1999) also reported that the extensive use of *Gmelina arborea* was limited to the Northern states and some states in the Eastern part of Nigeria. From the findings of Arowosoge et al. (2008b) though the use of *Gmelina arborea* and *Aningeria robusta* have spread to the South western part of the country, their utilization is still in small quantity while the two species were not used for furniture making in Benin. From the foregoing there is the need to increase the use of LUS that have good strength properties since they are still relatively available than the scarce and expensive CUS that are of reduced rotational age.

Conclusion

This study evaluated consumers' choice of wooden dining furniture. The findings of the study provide evidence that durability design/finishing and colour/wood grain play an important role in influencing consumers' ultimate choice of wooden dining furniture more than wood species and wood grade. This is because most consumers lack wood species knowledge. This suggests that manufacturers of wooden dining furniture could focus on the use of LUS that have suitable strength properties and low price than the few CUS that are of short rotation, expensive and are not readily available. This will provide the manufacturer of wooden dining furniture the opportunity of producing at reasonable cost while increasing their profit potentials. Attention should also be given to improved training and technology for new innovation in designing with good finishing.

Furthermore, from the research, income has effect on consumers' place of purchase as no consumer with income below ₦150, 000 purchase furniture from showroom. This implies that marketers of wooden dining furniture should locate showrooms to target high income consumers.

Thus the developed areas of Lagos, Ibadan and Osogbo metropolis would be appropriate for locating showrooms in the areas considered for this study.

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