

Segmentation of Processed Fruit Juice Consumers in Urban Uganda

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Abstract

This study was conducted to gain insights into processed fruit juice consumer segments in Uganda so as to assist local and foreign agribusinesses target and position their products. A market intercept survey of processed fruit juice consumers was conducted and segmentation of consumers was done using a combination of factor analysis and k-means clustering method. Five preference-based processed fruit juice consumer segments were identified, namely: *Convenience Seekers*, *Health Conscious*, *Brand Conscious*, *Safety Conscious*, and

Price Sensitive. While the demographics of these consumer segments did not differ, they tended to differ in their preferences and buying behaviours. Thus, fruit juice processing and distributing agribusinesses need to engage in strategic marketing by offering and communicating different products targeted to different consumer segments.

Keywords: Consumer segments, Processed fruit juice, Agribusinesses, Strategic marketing

1. Introduction

Globally, processed fruit juice is being perceived and marketed as a healthy food product and, as such its demand is driven by increasing consumer awareness of health (PMR, 2015). On top of the list are pure (100% fruit juice) and natural fruit juices with functional additives (vitamins and minerals) that command premium prices on the market. On the other end of the price/quality spectrum are low-priced, sugar-sweetened fruit punches that appeal most to the bottom-of-the-pyramid consumers that take it as a refreshing and thirst quenching drink. However, processed fruit juice has other valuable quality attributes that are preferred differently by consumers. These attributes include: freshness, taste/flavour, texture, shelf life, packaging material, brand, and origin (Weemaes and Reithmuller, 2001).

Based on their preferences for quality attributes, behaviours and demographics, processed fruit juice consumers have been segmented in China (Lee et al., 2015); United States (Bonilla, 2010); European Union (Sparke and Menrad, 2009; Baourakis *et al.*, 2007; and Sorenson and Bogue, 2005). Common to all studies is the consumer segment that seeks for natural and nutritious fruit juices. Convenience and lower price seekers are other universal groups of consumers. Other idiosyncratic groups include brand, diet, and environment conscious consumers. Thus, as their marketing strategy, fruit juice processors and distributors operating in these regions have targeted and positioned their products accordingly.

In a recent survey of African consumers, Hattingh et al. (2012) concluded that urban consumers in Africa are “similar to those found anywhere else in the world: they are both brand and quality conscious, they seek out the latest trends but watch their budget, and they want a modern, attractive shopping environment.” Linked to the above phenomenon is the rapid growth of supermarkets being experienced in the developing world (Reardon, 2011). Being patronized by mainly middle-income urban consumers, supermarkets provide an appropriate channel for distribution of processed fruit juice products. In Uganda, regional supermarket chains from Kenya and South Africa as well as locally-owned supermarkets are highly involved in the distribution of both imported and locally-produced processed fruit juice (Elepu, 2009).

The motivation of this study therefore was to segment processed fruit juice consumers in urban areas of Uganda. Understanding the profile of these consumers will assist both local and foreign agribusinesses involved in processing and distribution of processed juice products in Uganda to target them and position their products accordingly. Further, agribusinesses will also be able to identify critical and unique consumer needs and trends that are likely to influence the future direction of the processed fruit juice industry in Uganda.

2. The State of Processed Fruit Juice Industry in Uganda

The demand for processed fruit juice in Uganda currently exceeds its supply. Urbanization and growth in incomes in Uganda have led to increased demand for fresh fruit juice products, especially among nutrition and health conscious consumers. Much of the fruit juice demand is satisfied through imports from South Africa and Kenya. Uganda imports about 18.4 million

liters of fresh fruit juice per year worth about US\$30 million and the annual growth in importation of fresh fruit juice, for the period 2002-2006, was reported at 56 percent to 135 percent (UIA, 2009).

In response to this market opportunity, fruit juice processing has recently begun in Uganda. There are seven certified fruit juice processors in Uganda with Britannia Allied Industries, Century Bottling Company (CBC), and Sameer Agriculture Livestock Ltd (SALL) being the dominant players (Kalungi, 2012). Britannia was the first big company to enter the market and has since introduced various fruit juice products under the *Splash* brand name. In 2011, CBC, the bottlers of Coca-cola products added a juice processing line at its Namanve plant and started producing *Minute Maid* juice brand. In the same year, Sameer, a dairy processor diversified into fruit juice processing and launched the *Daima* juice brand. Moreover, plans are under way to build another fruit processing plant in eastern Uganda, a region where citrus fruit production has rapidly grown in recent years.

Whether imported or locally-made, processed fruit juice is distributed to consumers in urban areas through mainly supermarkets and retail shops although other minor outlets, such as restaurants, open/roadside markets, and social places, exist (Elepu, 2012). Supermarkets normally carry a wide variety of fruit juices compared to other outlets and probably that is why they are the major source of fruit juice to consumers.

3. Methodology

3.1 Consumer Segmentation Methods

Processed fruit juice consumers were segmented using a two-step cluster analysis method, which involved the use of factor analysis method in the first step and k-means clustering method in the second step (Aldenderfer and Blashfield, 1984). After consumer segments were generated, they were profiled using their demographic and behavioural characteristics. To do this, non parametric tests (F-test and Chi-square tests) were carried out to test for any significant differences among consumer segments in demographic and behavioural characteristics.

3.2 Data Collection Methods and Analysis

Data was collected in early 2012 from two shopping malls in Kampala metropolis, namely: Oasis and Ntinda. Oasis Mall is one of the largest shopping malls in Kampala housing Nakumatt, a supermarket chain from Kenya. It is adjacent to Garden City Mall where Uchumi, another supermarket chain from Kenya is located. Ntinda shopping mall is located in the suburban area of Kampala and has Quality supermarket, which is the largest local supermarket chain. Nakumatt and Quality supermarkets stocked various brands of processed fruit juice and juice squashes, both local and foreign. These supermarkets also offer a convenient avenue for intercepting processed fruit juice shopping consumers.

During the consumer survey, a total of 396 consumers were randomly intercepted at the entrance to the supermarket. From each consumer, data on their behaviour, preferences, and

demographics were collected using a structured questionnaire. After data entry and cleaning, the total number of usable surveys was 382. The statistical package for social scientists (SPSS) computer software was used to generate descriptive statistics and non-parametric tests, and perform both factor and cluster analyses.

4. Results and Discussion

4.1 Consumer Preferences for Attributes of Processed Fruit Juice in Uganda

Consumers were asked to rate the importance of 16 attributes of fruit juice in influencing what they normally buy on a 7-point Likert scale (1 = Not at all important to 7 = Extremely important). These attributes included: naturalness/pureness, safety, type of packaging material, resealability of package, transparency of package, package attractiveness, package size, flavour/taste, shelf life, brand, price, vitamin C label, no added sugar label, calories and nutrients content, country of origin, juice and production technology. Figure 1 below shows that consumers rated as important all attributes except country of origin and production technology of juice. Highly rated attributes were pureness, safety and shelf life of fruit juice.

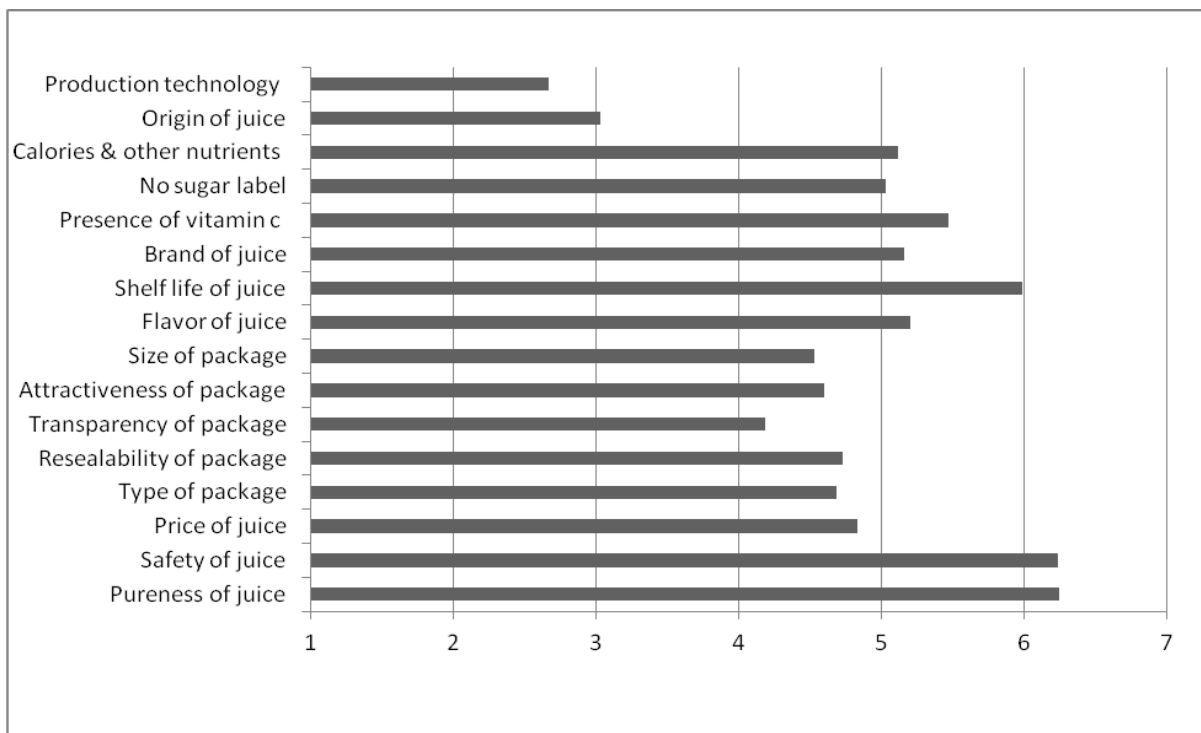


Figure 1. Consumer importance ratings of attributes of processed fruit juice

Factor analysis was used to reduce the 16 attributes of fruit juice used in the survey into 5 component factors. The principal components analysis extraction method and the varimax rotation method were used since they lead to the derivation of uncorrelated factors (Kim and Mueller, 1978a & b).

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.624 indicating that the sample size was adequate for factor analysis. The Bartlett's test of sphericity was also

significant ($Chi\text{-square} = 808.473$, $df = 120$, $p = 0.000$) and this implied that the correlation matrix was not an identity matrix. The Bartlett's test further showed that the factor model was suitable.

Using the Kaiser criterion, the optimal number of component factors, with eigenvalues exceeding 1.0, were five accounting for 52% of the total variance. In ascending order, the extracted component factors were called: *Nutrition and health*, *Packaging of juice*, *Origin of juice*, *Safety of juice*, and *Price of juice*. Table 1 below shows component factors, factor loadings, Cronbach's alpha, and communality associated with the factor model.

Table 1. Component factors of processed fruit juice attributes

Attribute	Component factors					Communality
	Nutrition & health	Packaging	Origin	Safety	Price	
Pureness of juice	.040	.115	.029	.703	-.154	.534
Safety of juice	.090	-.191	.202	.694	-.017	.567
Price of juice	.020	-.030	.101	-.190	.751	.612
Type of package	.187	.413	-.037	.142	.451	.431
Resealability of package	.110	.663	-.028	.092	.062	.465
Transparency of package	.112	.727	.064	-.169	-.217	.621
Attractiveness of package	-.108	.616	.119	.071	.128	.427
Size of package	-.199	.422	.098	.197	.412	.436
Flavour of juice	-.280	.035	.270	.427	.327	.441
Shelf life of juice	-.100	.273	-.193	.502	.107	.385
Brand of juice	.033	-.038	.405	.015	.229	.219
Vitamin C and others	.656	.107	.133	.152	.196	.521
No sugar label	.808	.012	-.109	-.092	-.039	.675
Calories & other nutrients	.820	-.019	.006	-.045	-.095	.684
Origin of juice	-.059	.099	.815	-.006	-.155	.701
Production technology	.022	.100	.774	.121	.106	.534
Cronbach's α	.690	.581	.520	.426	.366	

The above component factors were interpreted by taking factor loadings above 0.6 to be high and those from 0.4 to 0.6 to be moderate. *Nutrition and health* was highly loaded with three attributes of fruit juice: calories and nutrients content, no added sugar label, and vitamin C label. *Packaging of juice* was highly loaded with transparency and resealability of package and moderately loaded with package attractiveness, package size, and type of packaging material. *Origin of juice* was highly loaded with country of origin and production technology of juice and moderately loaded with brand of juice. *Safety of juice* was highly loaded with pureness and safety of juice and moderately loaded with shelf life and flavour of juice. *Price of juice* was highly loaded with price of juice and moderately so with type and size of package.

4.2 Segments of Processed Fruit Juice Consumers

Processed fruit juice consumers were then clustered based on standardized factor scores generated during factor analysis. To ensure orthogonality of component factors, Anderson-Rubin criterion was used to compute factor scores (Kim and Mueller, 1978a). The k-means method was used to obtain clusters of consumers. For two, three, and four clusters, some base variables were insignificant implying these clusters were not distinct. In contrast, five and six clusters were distinct. However, using economic intuition and empirical evidence, the optimum number of clusters was taken to be five. The identified consumer segments were then designated the following names: *Convenience Seekers*, *Health Conscious*, *Brand Conscious*, *Safety Conscious*, and *Price Sensitive*.

Convenience Seekers formed the largest group with 115 (30%) consumers, while *Price Sensitive* consumers were the smallest segment with 48 (13%) consumers. Sizes of other consumer segments were as follows: *Health conscious* (86), *Brand Conscious* (71), and *Safety Conscious* (62) as shown in Table 2 below. *Convenience Seekers* considered packaging of juice, nutrition and health, and to a lesser extent safety of juice as important factors in driving them to buy processed fruit juice. *Health Conscious* were motivated by nutrition and health, safety and price of juice. Though they were highly motivated by the origin of juice, *Brand Conscious* consumers also considered all the other factors as important. *Safety Conscious* consumers deemed safety of juice and to a certain extent price of juice as pertinent factors. *Price Sensitive* consumers were attracted by price of juice as well as packaging of juice.

Table 2. Segments of processed fruit juice consumers

Factor	Convenience Seekers	Health Conscious	Brand Conscious	Safety Conscious	Price Sensitive
Nutrition and health	.35313	.57618	.23798	-1.67747	-.06365
Packaging of fruit juice	.60655	-1.05980	.30414	-.21815	.27753
Origin of fruit juice	-.40596	-.39052	1.46554	-.17173	-.27367
Safety of fruit juice	.04950	.23758	.36501	.55219	-1.79741
Price of fruit juice	-.56242	.17983	.30916	.04062	.51551
Total	115	86	71	62	48
% of Total	30	22	19	16	13

Note: Factor scores have mean 0 and standard deviation 1.

Consumer segments were validated by use of split-half test and performing multivariate analysis of variance (MANOVA) of base variables (Aldenderfer and Blashfield, 1984). Based on the MANOVA test, the identified segments were distinct since the significance tests on all base variables were significant (Table 3).

Table 3. MANOVA of component factors

Factor	Cluster		Error	F		Sig.
	Mean Square	df	Mean Square	df	Mean Square	df
Nutrition and health	55.392	4	.423	377	130.983	.000
Packaging of fruit juice	38.029	4	.607	377	62.639	.000
Origin of fruit juice	47.496	4	.507	377	93.742	.000
Safety of fruit juice	47.143	4	.510	377	92.363	.000
Price of fruit juice	14.701	4	.855	377	17.201	.000

4.2.1 Demographic Characteristics of Consumer Segments

Consumer segments were not significantly different in all the demographic characteristics including sex, age, education, household size, occupation, income, and nationality. In general, about 57% of the respondents were male while 43% were female. They tended to be younger and more educated with 42% of them being in the age group of 25-34 and over a half (52%) of them having reached some university college. Most (78%) of them were employed either by self or some organization. A majority (87%) of them was Ugandans and the rest were foreigners which included mainly Kenyans. In terms of monthly household income, they were fairly distributed across all income categories (Table 4).

Table 4. Demographic characteristics of consumer segments, %

Characteristic	Convenience Seekers	Health Conscious	Brand Conscious	Safety Conscious	Price Sensitive	Total	χ^2
Sex							
Male	52.6	60.7	59.2	52.5	61.7	56.8	2.420 (n.s)
Female	47.4	39.3	40.8	47.5	38.3	43.2	
Age							
Under 25	30.4	33.7	27.9	40.0	33.3	32.6	17.038 (n.s)
25-34	44.3	43.0	39.7	36.7	43.7	41.9	
35-44	17.4	14.0	26.5	20.0	16.7	18.6	
45 or over	7.9	9.3	5.9	3.3	6.3	6.9	
Education							
None	0.0	0.0	0.0	1.7	0.0	0.3	17.616 (n.s)
Primary	0.9	4.7	1.5	3.3	4.2	2.7	
Secondary	25.7	23.5	20.6	25.0	29.8	24.7	
Tertiary	27.4	22.4	19.1	11.7	14.9	20.6	
University	46.0	49.4	58.8	58.3	51.1	51.7	
Occupation							
Student	16.5	15.3	14.3	29.0	12.5	17.4	27.231 (n.s)
Employed	77.4	82.3	81.5	67.8	77.1	77.6	
Unemployed	4.3	2.4	2.8	1.6	10.4	3.9	
Retired	1.7	0.0	1.4	1.6	0.0	1.1	
Nationality							
Ugandan	90.1	88.0	92.8	80.6	81.3	87.4	6.765 (n.s)
Other	9.9	12.0	7.2	9.4	18.7	12.6	
Income							
< Ush0.5 m	29.6	42.0	35.4	29.2	41.5	35.0	12.232 (n.s)
USh0.5-1 m	51.9	38.2	40.0	39.5	26.8	41.7	
> Ush1 m	18.5	19.8	24.6	31.3	31.7	23.3	

Note: Level of statistical significance: n.s is not significant; and Exchange rate: 1 US\$ = Ush2400.

4.2.2 Behavioural Characteristics of Consumer Segments

Fruit juice consumer segments differed in shopping behaviour as shown in Table 5 below. *Health Conscious* consumers appeared to be more regular consumers of fruit juice than other consumer segments. Weekly per capita consumption of fruit juice was highest among these consumers and stood at 3.08 litres. Similarly, their weekly expenditure on fruit juice of Ush15,473 (US\$6.45) was also the highest of all consumer segments. Although the supermarket remained to be the major source of fruit juice for all consumer segments, retail shops were also patronized by most *Price Sensitive* and *Convenience Seekers*.

Approximately 73% of *Price Sensitive* consumers and 66% of *Convenience Seekers* said they bought their fruit juice from retail shops. Consumption of fruit juice often took place both at home and away from home for most consumers in all segments except *Safety Conscious* and *Brand Conscious*. For example, 20% of *Brand Conscious* consumers always took fruit juice only at home while 21% of *Safety Conscious* consumers had it exclusively away from home. While refreshment was the main reason for consumption of fruit juice for all consumer segments, *Safety Conscious* consumers were peculiar when it came to other motives, namely:

thirst, nutrition, and health. A higher proportion (32%) of *Safety Conscious* consumers bought fruit juice to quench their thirst and only 19% of them were motivated by nutrition and health benefits.

Table 5. Behavioural characteristics of consumer segments

Characteristic	Convenience Seekers	Health Conscious	Brand Conscious	Safety Conscious	Price Sensitive	Total	χ^2/F -statistic
Frequency (%)							
Regularly	54.6	67.1	59.7	60.7	76.6	62.2	7.871*
Irregularly	45.4	32.9	40.3	39.3	23.4	37.8	
Amount (L/wk)	2.36	3.08	2.50	2.01	2.07	2.46	2.866**
Money (Ush/wk)	12,233	15,473	12,554	10,293	10,538	12,504	2.393**
Source (%)							
Open market	1.8	3.5	0.0	4.9	2.1	2.4	4.072 (n.s)
Restaurant	3.5	5.8	7.1	8.2	0.0	5.0	5.156 (n.s)
Retail shops	65.8	45.3	37.1	36.1	72.9	52.0	31.017***
Supermarket	93.0	95.3	90.0	86.9	91.7	91.8	3.919 (n.s)
Social place	1.8	0.0	1.4	3.3	2.1	1.6	2.618 (n.s)
Place of use (%)							
At home	7.0	9.4	20.0	16.4	6.3	11.3	26.099***
Away from home	7.0	7.1	17.1	21.3	8.3	11.3	
Both	86.0	83.5	62.9	62.3	85.4	77.3	
Reason (%)							
Thirst	13.0	18.6	24.3	32.3	4.3	18.4	17.992***
Nutrition	47.8	47.7	40.0	19.4	44.7	41.3	16.047***
Health	58.3	57.0	38.6	14.5	59.6	47.4	40.479***
Refreshment	74.8	75.6	61.4	69.4	80.9	72.1	6.942 (n.s)

Note: Level of statistical significance - *** (1%), ** (5%), * (10%), and n.s (not significant); and Exchange rate: 1 US\$ = Ush2400.

4.2.3 Type of Processed Fruit Juice Preferred by Consumer Segments

Across all consumer segments, there was no significant difference in flavour or taste of fruit juice often bought. In general, mango was the frequently bought flavour of juice as indicated by over 67% of the consumers. Three other flavours that were regularly bought by a significant proportion of consumers included: apple (38%), pineapple (29%), orange (28%), passion (13%), and strawberry (13%) as shown in Table 6 below. Other fruit flavours that were also liked but by only a few consumers included: guava, blackcurrant, banana, red grape, white grape, lemon, tropical, hibi, and litchi. Although not all consumers seemed not to be very keen on fruit juice concentration, about 44% of them claimed they always bought 100% fruit juice. A majority (73%) of the consumers often purchased chilled/ refrigerated juices

perhaps for immediate consumption. However, a big majority of *Convenience Seekers* and *Price Sensitive* consumers always bought fruit juice in small portion sizes of 0.5 litres or less.

Table 6. Preferences of consumer segments for attributes of processed fruit juice, %

Attribute	Convenience Seekers	Health Conscious	Brand Conscious	Safety Conscious	Price Sensitive	Total	χ^2 statistic
Flavor							
Mango	67.0	70.9	66.2	71.0	58.3	67.3	2.692 (n.s)
Apple	38.3	40.7	43.7	33.9	27.1	37.7	4.110 (n.s)
Pineapple	25.2	27.9	32.4	29.0	31.3	28.5	1.337 (n.s)
Orange	29.6	27.9	33.8	16.1	27.1	27.5	5.694 (n.s)
Passion	8.7	11.6	15.5	14.5	18.8	12.8	3.981 (n.s)
Strawberry	11.6	18.6	7.0	14.5	10.4	12.6	5.409 (n.s)
Other	36.5	37.2	32.4	40.3	39.6	36.9	1.090 (n.s)
Juice Conc.							
100%	39.1	38.8	52.2	51.7	41.9	43.8	9.643 (n.s)
< 100%	17.4	11.8	10.1	5.0	12.5	12.2	
Both	43.5	49.4	37.7	43.3	45.8	44.0	
Portion size							
0.5 l or less	87.5	59.7	60.5	52.9	73.9	66.4	25.066***
> 0.5 l	10.4	37.1	38.4	47.1	24.3	32.0	
Both	2.1	3.2	1.2	0.0	1.7	1.6	
Type							
Chilled	72.2	75.3	76.1	76.7	64.6	73.4	9.100 (n.s)
Non chilled	14.8	10.6	9.9	3.3	18.8	11.6	
Both	13.0	14.1	14.1	20.0	16.7	15.0	
Brand							
Splash	76.5	80.2	85.5	82.0	79.2	80.2	2.357 (n.s)
Ribena	42.6	30.2	27.5	16.4	33.3	31.7	13.627***
Minute maid	22.6	25.6	20.3	23.0	16.7	22.2	1.599 (n.s)
Del Monte	20.0	22.1	14.5	24.6	25.0	20.8	2.839 (n.s)
Ceres	19.1	22.4	15.9	9.8	12.5	16.9	5.073 (n.s)
Quencher	16.5	17.4	10.1	9.8	12.5	14.0	3.276 (n.s)
Other	16.5	23.3	21.7	18.0	14.6	19.0	2.453 (n.s)

Note: Level of statistical significance - *** (1%) and n.s (not significant).

4.2.4 Other Behaviours of Fruit Juice Consumer Segments

Consumer segments also differed significantly in consumption of non processed fruit juice, fruits, fruit flavoured imitator drinks, soda, dairy products, iced tea, energy drinks, and sparkling drinks. Consumption of fresh and dried fruits did not vary across consumer

segments. However, there were significant differences in consumption of unpacked fruit juice, canned fruits, fruit flavoured drinks, soda, dairy products, iced tea, energy drinks, and sparkling drinks across consumer segments as shown in Table 7 below. For instance, more (80%) *Safety Conscious* consumers consumed non processed juice and fewer (55%) of them consumed fruit flavoured imitator drinks than other consumer segments.

Consumers avoided unpacked juice especially that on the market citing safety issues. Consumption of canned and dried fruits was low perhaps because of lack of availability of these products in the market. Moreover, consumption of fruit flavoured imitator drinks, soda, and dairy products, was higher than that of fruit flavoured iced tea, energy drinks, and sparkling drinks.

Table 7. Consumption of fruits and fruit flavoured products by consumer segments, %

Product	Convenience Seekers	Health Conscious	Brand Conscious	Safety Conscious	Price Sensitive	Total	χ^2/F -statistic
Unpacked juice	30.4	40.0	65.2	80.0	33.3	47.3	56.735***
Fresh fruits	98.3	96.5	93.0	98.4	97.1	96.9	7.393 (n.s)
Dried fruits	27.8	25.6	32.9	21.3	35.4	28.2	10.221 (n.s)
Canned fruits	7.8	11.9	24.6	19.4	20.0	15.2	17.642***
Imitator drinks	86.7	84.9	64.3	54.8	89.6	77.3	58.353***
Soda	97.3	96.5	97.1	94.9	100.0	97.0	15.644**
Dairy products	72.2	69.6	77.1	71.0	72.9	72.2	19.116**
Iced tea	29.6	44.2	33.3	19.4	29.2	31.8	15.938**
Energy drinks	33.9	51.2	50.0	51.6	27.1	42.8	15.857**
Sparkling drinks	29.6	47.1	50.7	46.8	25.0	39.6	26.131***

Note: Level of statistical significance - *** (1%), ** (5%), and n.s (not significant).

4.3 Discussion

Although the behaviours and motives of fruit juice consumers in Uganda and other countries are quite similar, they are demographically different. For example, Bonilla (2010) segmented 100% fruit juice consumers in the United States (US) into five groups based on their lifestyles and behaviours: *Health Conscious*; *Environmentally Conscious and Information Seekers*; *Price Conscious*; *Diet Product Users*; and *Convenience Product Users*. In contrast, Lee et al. (2015) clustered Chinese fruit juice consumers into three segments: *Health Conscious*, *Premium Product*, and *Long Product Shelf-life*. This shows that health, price, and convenience are important motives driving the consumption of fruit juice in the US and China as well as in Uganda. From Table 4 above, equivalent consumer segments (*Convenience Seekers*, *Health Conscious*, and *Price Sensitive*) were also identified in Uganda. But, what is interesting of these consumer segments is that they are demographically different from those existing in the US. Across all segments, fruit juice consumers tended to be younger and educated perhaps reflecting typical supermarket shoppers in Uganda as found in

an earlier study (Elepu, 2009) or suggesting the different population structures in the two countries. In the US, *Health Conscious* consumers were mainly older women aged 65 years and above with some education and low-to-moderate incomes; *Convenience Product Users* were well-educated men aged below 44 years and with moderate incomes; *Price Conscious* consumers were mainly lowly educated females aged 35-64 years and with low incomes.

Diet product usage and environmental motives were not considered in this study owing to the non existence of fruit juice package recycling, lack of organic labels on fruit juices, and low use of diet products among consumers in Uganda. In the US, there were *Environmentally Conscious and Information Seekers* and *Diet Product Users*. While *Environmentally Conscious and Information Seekers* tended to be married women aged 55-64 years with some education and moderate to high incomes, *Diet Product Users* were mostly men aged 45-64 years with some level of education and moderate to high incomes. However, what seems to concern some fruit juice consumers most in Uganda were safety and origin of fruit juice and thus, existence of *Safety Conscious* and *Brand Conscious* consumers.

Similarly, fruit juice consumers segments in Uganda are also somehow comparable to functional fruit juice consumer segments identified by Sparke and Menrad (2009) in the European Union (EU) and chilled orange juice consumer segments identified by Sorenson and Bogue (2005) in Ireland in their buying motives, especially health and price (cost) motives. Though the focus was on functional fruit juice, Sparke and Menrad identified eight segments of consumers based on their buying/refusal motives and trust in actors. There were five buyer segments (*Hesitating Unmotivated*, *Enlightened and Convinced*, *Reasonable Health-oriented*, *Impressed Testers*, and *Enthusiastic Beauty-oriented*) and three non buyer segments (*Enlightened Ignoring*, *Mistrustful Sceptical*, and *Cost-conscious Prevented*). *Reasonable Health-oriented* consumers were mostly professional women aged 40-60 years, and with middle to high incomes, while *Cost-conscious Prevented* consumers were older than 60 years, had no children, and had low to very low incomes. However, the profiles of *Reasonable Health-oriented* and *Cost-conscious Prevented* consumers closely matched that of *Nutrition Conscious* and *Price conscious* consumers identified by Bonilla in the US. Segments of chilled orange juice consumers in Ireland identified by Sorenson and Bogue (2005) were also more similar to those in EU and US than Uganda although buying motives such as functionality, price were common in all countries.

Finally, Ugandan consumers seem to possess somehow different preferences for attributes of fruit juices compared to consumers in other countries, and this situation appears to vary from country to country. As seen earlier, mango, apple, pineapple, and orange in that order were the most preferred flavours across all consumer segments in Uganda. Chilled juice in small packages (half-litre package or less) was bought by most Ugandan consumers with mixed enthusiasm on fruit juice concentration. Exceptionally, consumers in India have almost the same preferences for flavour of fruit juices as those in Uganda. Mango, apple, orange, pineapple, and straw berry were the most preferred fruit juice flavours in India (Hirekenchanagoudar, 2008).

In contrast, Baourakis *et al.* (2007) in a cross-country comparative study found that orange and mixed fruit flavours were the most preferred in both countries followed by peach and apple flavours in Greece and Netherlands, respectively. Most consumers in Greece and Netherlands preferred 100% juice, although some of them favoured 'all kinds of juices', up to 40% juice, and sugar added juice. Most (73%) of the Dutch consumers preferred half-litre package while more than one-half (55%) of Greek consumers favoured one-litre packages. The preferred time duration of fruit juice also differed between countries: short-life in Greece and long-life in Netherlands.

The disparity in consumer preferences for attributes of fruit juice among countries could be attributed to differences in socio-cultural environment among other factors. Wright *et al.* (2001) examined the influence of culture on food taste preferences and discovered that taste in food reflected in part the consumer's social and cultural origins, social ambitions and the cultural capital acquired, either as part of their upbringing or more deliberately. Since global distribution of fruits is varied depending on whether they are tropical or temperate and, so could be consumer preferences for fruit flavours. Consumer preferences for other attributes, such as size of package of processed fruit juice, might be varying due to differences in household size and to whether it is bought for immediate or home consumption.

5. Conclusion

Knowledge of existing consumer segments have far reaching marketing implications for agribusinesses to appropriately target and position their products in the processed juice market in Uganda. To satisfy *Convenience Seekers*, pack fruit juice in attractive, transparent and resealable packages of various sizes. For the *Health Conscious* segment, provide them with sugar free and low calorie, fruit juice enhanced with vitamins and minerals. However, nutrition and health benefits need to be clearly communicated to this segment. *Safety Conscious* consumers need to be assured fruit juice products meet quality and safety standards. *Brand Conscious* consumers will be better served through building strong brands of fruit juice. Development of a variety of fruit juice products based on portion size, fruit juice concentration, type of packaging, flavour, offered at a broad price spectrum will appeal to *Price Sensitive* consumer segments. Furthermore, to reach any of these consumer segments, fruit juice products need to be distributed through both supermarkets (local and regional chains) and retail shops.

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