



International Journal of Engineering Researches and Management Studies

THE INTERPLAY BETWEEN GENDER, AGE AND CONSUMER GROCERY SHOPPING BEHAVIOR: AN EXPLORATORY STUDY

Dr. Shivakumar Krishnamurti^{1*} and Dr. Ruchi Agarwal²

¹Professor, Symbiosis Institute of Business Management-Bengaluru (A Constituent of Symbiosis International University)

²Assistant Professor, College of Business Administration University of Modern Sciences, Dubai

ABSTRACT

The study examines the grocery shopping behavior of the residents of the United Arab Emirates (UAE). A pre-designed questionnaire was used to collect the primary data (experiences) from 264 respondents residing in and around the Emirates of Sharjah and Dubai of the UAE. The collected data was analyzed with the help of statistical tools such as averages, percentages, factor analysis, Student's t-test, structural equation model and correlation. The objectives of this study were the following:

- To know the extent to which men and women residents differ in their grocery shopping behavior
- To know the extent to which older and younger residents differ in their grocery shopping behavior
- To know whether the grocery shoppers are satisfied with their grocery shopping experience.

The study revealed the following: The majority of the surveyed shoppers do grocery shopping once a week and the majority of the shoppers indicated that they spend an hour grocery shopping during each visit.

Although the respondents show some differences in their grocery shopping behavior depending on their gender and age, there appear to be a number of similarities in their grocery shopping behavior.

Irrespective of their gender and age, grocery shoppers always look for lowest prices when they shop, like to list specific private label/store brand items to buy, are keen to buy fresh and new stocks of items and shop at a particular grocery outlet because they get all their requirements.

Keywords: *Grocery shopper, gender, age, residents, price, brand, post-purchase, satisfaction.*

I. INTRODUCTION

Consumers make buying decisions every day in their lives, and these decisions mark the focal point of a marketer's effort. Consumers buy a variety of goods and services. The manner in which they relate to each other and to the other elements of the world around them impacts their buying decisions. Marketers need to affect how consumers think and act. In order to affect the *whats*, *whens* and *hows* of consumers' buying behavior, every marketer needs to comprehend the *whys*. These *whys* cannot be controlled by the marketers, but have to be well understood. *Age* and *gender* are two such important characteristics for grocery shopping.

Grocery shopping constitutes an important and routine type of consumer behavior. Food and grocery items reflect low levels of involvement; that is, such products are bought with a minimum of comparison and buying effort. They are less expensive, available in many locations and have less associated social risk. Some might be bought regularly while some might be bought impulsively. Consumers do not wish to spend much time when shopping for groceries. Since grocery shopping is one of the most basic elements of consumer behavior, marketers and retailers need to increasingly focus on the dynamics affecting the buying behavior.



International Journal of Engineering Researches and Management Studies

II. LITREATURE REVIEW

Nicholls and Bumgardner (2007) evaluated the demographic factors related to consumer preferences for furniture from commercial and from underutilized species. They concluded that age and income were statistically significant demographic factors, with a stronger effect for age on consumer preferences. However, gender was not significant for such decisions.

A study conducted in a suburban shopping mall to assess the impact of pleasant ambient scent on consumer spending as a function of shopper age concluded that only young shoppers spent significantly more time in the presence of the pleasant ambient smell (Chebat, Morrin & Chebat, 2009).

Inman, Winer and Ferraro (2009) explored product category and customer characteristics that affect consumers' likelihood of making unplanned purchases. They found that category characteristics, such as purchase frequency and displays, and customer characteristics, such as household size and gender, affect the in-store decision making of consumers. The results are in accordance with the predictions that use of lists, more frequent trips, limiting the aisles visited, limiting the time spent in the store and paying by cash are effective strategies for decreasing the likelihood of making unplanned purchases.

An insight into the literature shows studies probing the role and behavior of men and women toward shopping for grocery products. Turcinkova, Brychtova and Urbanek (2012) find that women take into account not only the immediate needs but also the future needs of food and thus tend to stock up in advance. Men neither build up stocks nor shop for food until it becomes a necessity. Men go shopping for food lesser than women and tend to avoid large purchases. They stick to their shopping lists and search for the particular indicated product. Replacement of their favorite products, if they are not available, is not preferable. Women buy more impulsively than men. Cost effective offer of goods and a visible indication of discounted goods attract the attention of women. Men often require a rational reason to buy.

Mortimer (2012) proposes that men are an attractive consumer group for supermarket retailers. They shop regularly and appear committed to their local supermarket. Most men seldom check prices or contemplate complex product evaluative criteria. Most of them do not plan their purchases before entering the supermarket and, when shopping, many will purchase unplanned and impulse items.

According to the findings by the National Consumer Agency Research, Ireland, in 2014, women take the lead responsibility when it comes to shopping for food and groceries and are not prepared to compromise on quality. The younger consumers, at large, spread their shopping across a number of stores. Irish consumers seem to show remarkable shifts toward supermarket's own brand labels as they trust that the quality of these products has improved and so has the competition in this segment.

Consumers look for information before making the purchase decision. Blogging is a popular way of searching for information about products and services. Krishnamurti and Agarwal (2013–14) conducted a study in the UAE which revealed that the blogging behavior of respondents by way of exploring blogs for more information about services and the convenience of blogging to search for information about products and services are dependent on gender.

A study to examine the consumer behavior toward packaged food in rural areas of Gujarat in India concluded that three factors, namely health, convenience and mood have significant relationship with age and four factors, namely health, mood, price and brand have significant relationship with monthly income. Consumers in their 20s gave more emphasis to health and mood upliftment while those over 40 years of age preferred convenience (Bhatt & Bhatt, 2015).



International Journal of Engineering Researches and Management Studies

Agarwal, Abu Faiz and Gupta (2016) conducted a study to examine the impact of demographics on the purchase behavior of organic food among buyers in the UAE which revealed that as age increases, consumption of organic food increases, except for buyers in the age group 41–50 years. However, the demographic factor ‘gender’ did not have any significant effect on the purchase of organic food.

Objectives of the study

The aim of this study is to understand and examine the grocery shopping behavior on the basis of gender and age of the residents living in the Emirates of Dubai and Sharjah and their post-purchase grocery shopping experience. To develop a holistic analysis of the stated research problem, the following objectives have been developed for the study:

- To know the extent to which men and women differ in their grocery shopping behavior
- To know the extent to which younger and older people differ in their grocery shopping behavior
- To know whether grocery shoppers are satisfied with their grocery shopping experience

III. RESEARCH METHODOLOGY

A pre-designed questionnaire on a five-point scale was used to collect the primary data (shopping experiences) from the residents living in and around the Emirates of Dubai and Sharjah. The questionnaire was framed to elicit the shopping experiences of the respondents and was chosen using convenience sampling. Out of 300 questionnaires distributed, 264 questionnaires received back were complete in all respects and were used as sample for this study.

Sample Profile: Demographic information reported on the study indicated the following: Male respondents represented 59% of the sample, while female respondents represented the remaining 41%. The respondents were in the following age ranges: 82% were under 40 years of age and 18% above 40 years. The report also indicated that 58% of the respondents were married and the remaining 42% were single. About 23% of the respondents had studied up to school level, 38% had a bachelor's degree, about 22% had done their masters, and the remaining 17% were diploma holders. The income levels of the respondents were as follows: 22% of the respondents were getting up to AED 5000 per month, 24% earned between AED 5001 and 10,000, 18% earned between AED 10,000 and 15,000 per month and the remaining 36% earned above AED 15,000 per month.

Grocery shopping habits of the respondents in the study indicated the following:

Frequency of shopping: The majority of the surveyed respondents indicated that they do grocery shopping once a week, about 28% of the respondents prefer to shop for groceries twice a week, 10% informed that they do shopping once a fortnight and 15% disclosed that they prefer to shop for groceries daily.

Time spent during each grocery shopping visit of the respondents: The majority of the respondents spent an hour shopping for groceries: 30% of the respondents spend two hours every time they go for grocery shopping, while about one-fourth of the respondents prefer to spend more than two hours when they go for grocery shopping.

Results of Factor Analysis

To identify and analyze the grocery shopping behavior of the shoppers, 22 variables were identified for this study at the time of the initial finalization of the questionnaire. In order to extract the various parameters that indicated the grocery shopping behavior of older and younger respondents and men and women living in the Emirates of Dubai and Sharjah and their post-purchase grocery shopping experience, a principal component analysis was applied on all the 22 statements included in the interval scale. Retaining only those factors that had Eigen values greater than 1 (as suggested by Kaiser), we could infer that five factors emerged totally. These five factors together explained 65.02% of the total variance.



International Journal of Engineering Researches and Management Studies

Factor Dimensions

Only those variables that had loadings > 0.50 were included in the process of extracting individual factors from the analytical results. The results are presented in Table 1. Thus, variables **A** to **D** and **G** and **H** constituted factor I. A close look at all the variables in factor I impelled the researchers to identify a common name. This factor was then conceptualized as “Grocery shopping based on price - Related Factor”. Variables **E** and **F** constituted factor II. A close look at the items in factor II guided the researchers to conceptualize this factor as “Grocery shopping impulse purchase - Related Factor”. In a similar manner, variables **I** to **K** and **M** formed factor III. This was grouped under the heading “Grocery shopping of listed items - Related Factor”. Factor IV is termed as “Grocery shopping of branded items - Related Factor” and comprised variables **L**, **N**, **O**, and **P** to **S**. Finally, variables **T**, **U** and **V** were all grouped under the heading “Grocery shopping at regular outlet - Related Factor”.

Table 1. Identification of Factors Related to UAE Residents' Grocery Shopping Behavior

Factor Name	Item	Variables	Factor Loadings
Factor I – Grocery shopping based on prices - Related Factors	G	I seek out and buy store brands to save money	.756
	A	I shop at multiple stores to find the lowest price	.688
	C	I buy less variety to reduce the number of items needed	.667
	H	I choose products because of loyalty card discounts	.631
	D	I look at the store circular either before or at the store	.625
	B	I buy more quantity of cleaning materials to reduce the number of items needed	.566
Factor II – Grocery shopping on impulse purchase of items - Related Factors	E	I make additional unplanned purchases after seeing products/deals in store	.630
	F	I stock up on certain items because they were on sale	.593
Factor III – Grocery shopping of listed items - Related Factors	I	I list categories to buy (e.g. coffee, frozen vegetables, toothpaste)	.746
	J	I use a store circular to make the list	.696
	M	I list specific private label/store brand items to buy	.604
	K	I make a list based on ingredients needed for recipes	.553
Factor IV – Grocery shopping of branded items - Related Factors	P	My selection of brands is based on newspaper flyers received by me	.748
	O	I select brands according to promotions and gift vouchers available with me	.679
	Q	I buy brands requested by a household member	.664
	L	I list specific brands to buy	.663
	N	I choose brands based on previous usage and trust of the brands	.635
	R	Advertisements and displays in the store help me to choose brands in the store	.554



International Journal of Engineering Researches and Management Studies

	S	My brand selection depends on product label/packaging	.551
Factor V – Grocery shopping at regular outlets - Related Factors	V	I regularly shop at a particular grocery outlet because fresh and new stock is available there	.712
	T	I regularly shop at a particular grocery outlet because of its nearness	.710
	U	I regularly shop at a particular grocery outlet because I get all my requirements	.635

The major outcomes of the factor analysis are presented in table 1 above: Seek out and buy store brands to save money (Factor loading .756); shop at multiple stores to find the lowest price (Factor loading .688); buy less variety to reduce the number of items needed (Factor loading .667); choose products because of loyalty card discounts (Factor loading .631); look at the store circular either before or at the store (Factor loading .625); buy more quantity of cleaning materials to reduce the number of items needed (Factor loading .566). Make additional unplanned purchases after seeing products/deals in store (Factor loading .630) and stock up certain items because they are on sale (Factor loading .593). List categories to buy (Factor loading .746). Use a store circular to make a list (Factor loading .696); list specific private label/store brand items to buy (Factor loading .604); make a list based on ingredients needed for recipes (Factor loading .533); select brands based on newspaper flyers received (Factor loading .748); select brands according to promotions and gift vouchers available (Factor loading .679); buy brands requested by a household member (Factor loading .664); list specific brands to buy (Factor loading .663); choose brands based on previous usage and trust of the brands (Factor loading .635). Advertisements and displays in the store help to choose brands in the store (Factor loading .526) and brand selection depends on product label/packaging (Factor loading .566). Regularly shop at a particular grocery outlet because fresh and new stock is available there (Factor loading .712); regularly shop at a particular grocery outlet because of its nearness (Factor loading .710); regularly shop at a particular grocery outlet because of the availability of all requirements (Factor loading .635).

Hypotheses Testing

In order to test whether the grocery shopping behavior of the sample respondents differs according to gender, an independent t-test was applied on all the 22 variables (of the interval scale). Significant differences were noticed among the male and female respondents in 2 out of the 22 variables on which the test was applied. The results where significant differences were noticed are presented in Table 2.

Table 2. Results of Student's t-Test – Gender

Item	Marital Status	N	Mean	S.D.	P
K	Male	155	3.67	1.284	.010
	Female	109	4.06	.998	.007
P	Male	155	3.23	1.119	.042
	Female	109	2.93	1.189	.045

H1: “Make a list based on ingredients needed for recipes” is independent of the gender interpretation: The analytical results of the t-test on Item K (Make a list based on ingredients needed for recipes) shows a mean value of 3.67 for male and 4.06 for female respondents which signifies that there exists a difference in their opinion. Since the P-value $0.010 < 0.01$ (at 5% level of significance), hypothesis 1 is rejected.



International Journal of Engineering Researches and Management Studies

H2: “My selection of brands is based on newspaper flyers received by me” is independent of the gender interpretation: The analytical results of the t-test on Item P (My selection of brands is based on newspaper flyers received by me) shows a mean value 3.23 for male and 2.93 for female respondents which signifies that there exists a difference in their opinion. Since the P-value $0.042 < 0.01$ (at 5% level of significance), hypothesis 2 is rejected.

In order to test whether the grocery shopping behavior of the sample respondents differs according to age, an independent t-test was applied on all the 22 variables (of the interval scale). Significant differences were noticed among the older and younger respondents in 8 out of the 22 variables on which the test was applied. The results where significant differences were noticed are presented in Table 3.

Table 3. Results of Student's t-Test – Age

Item	Age	N	Mean	S.D.	P
C	Above 40	213	3.53	1.151	.010
	Below 40	51	4.02	1.256	.018
H	Above 40	213	3.51	1.209	.040
	Below 40	51	3.91	1.208	.043
I	Above 40	213	3.92	1.150	.037
	Below 40	51	4.30	1.093	.034
K	Above 40	213	3.74	1.187	.012
	Below 40	51	4.24	1.119	.017
L	Above 40	213	3.79	1.214	.009
	Below 40	51	4.20	1.120	.008
Q	Above 40	213	3.95	1.064	.020
	Below 40	51	4.35	.994	.017
S	Above 40	213	3.49	1.108	.002
	Below 40	51	4.04	1.173	.004
T	Above 40	213	3.82	1.095	.009
	Below 40	51	4.28	1.109	.012

H1: “I buy less variety to reduce the number of items needed” is independent of the age of the respondents’ interpretation: The analytical results of the t-test on Item C(I buy less variety to reduce the number of items needed) shows a mean value of 3.53 for older respondents and 4.02 for younger respondents which signifies that there exists a difference in their opinion. Since the P-value $0.010 < 0.01$ (at 5% level of significance), hypothesis1 is rejected.

H2: “I choose products because of loyalty card discounts” is independent of the age of the respondents’ interpretation: The analytical results of the t-test on Item H (I choose products because of loyalty card discounts) shows a mean value of 3.51 for older respondents and 3.91 for younger respondents which signifies that there exists a difference in their opinion. Since the P-value $0.040 < 0.01$ (at 5% level of significance), hypothesis 2 is rejected.

H3: “I list categories to buy (e.g. coffee, frozen vegetables, toothpaste)” is independent of the age of the respondents’ interpretation: The analytical results of the t-test on Item I (I list categories to buy e.g. coffee, frozen vegetables, toothpaste) shows a mean value of 3.92 for older respondents and 4.30 for the younger respondents which signifies that there exists a difference in their opinion. Since the P-value $0.037 < 0.01$ (at 5% level of significance), hypothesis 3 is rejected.

H4: “I make a list based on ingredients needed for recipes” is independent of the age of the respondents’ interpretation: The analytical results of the t-test on Item K (I make a list based on ingredients needed for recipes)



International Journal of Engineering Researches and Management Studies

shows a mean value of 3.74 for older respondents and 4.24 for younger respondents which signifies that there exists a difference in their opinion. Since the P-value $0.012 < 0.01$ (at 5% level of significance), hypothesis 4 is rejected.

H5: “I list specific brands to buy” is independent of the age of the respondents’ interpretation: The analytical results of the t-test on Item L (I list specific brands to buy) shows a mean value of 3.79 for older respondents and 4.20 for younger respondents which signifies that there exists a difference in their opinion. Since the P-value $0.009 < 0.01$ (at 5% level of significance), hypothesis 5 is rejected.

H6: “I buy brands requested by a household member” is independent of the age of the respondents’ interpretation: The analytical results of the t-test on Item Q (I buy brands requested by a household member) show a mean value of 3.95 for older respondents and 4.35 for younger respondents which signifies that there exists a difference in their opinion. Since the P-value $0.020 < 0.01$ (at 5% level of significance), hypothesis 6 is rejected.

H7: “My brand selection depends on product label/packaging” is independent of the age of the respondents’ interpretation: The analytical results of the t-test on Item S (My brand selection depends on product label/packaging) show a mean value of 3.49 for older respondents and 4.04 for younger respondents which signifies that there exists a difference in their opinion. Since the P-value $0.002 < 0.01$ (at 5% level of significance), hypothesis 7 is rejected.

H8: “I regularly shop at a particular grocery outlet because of its nearness” is independent of the age of the respondents’ interpretation: The analytical results of the t-test on Item T (I regularly shop at a particular grocery outlet because of its nearness) show a mean value of 3.82 for older respondents and 4.28 for younger respondents which signifies that there exists a difference in their opinion. Since the P-value $0.009 < 0.01$ (at 5% level of significance), hypothesis 8 is rejected.

The correlation between the five factors and the two variables (frequency and time spent on grocery shopping) was calculated by using Pearson’s Correlation method. The results showed that shoppers spending more time on grocery shopping is significantly correlated with “Shopping for Branded Items” factor at the 0.01 level (2-tailed test).

Post-purchase Experiences of Grocery shoppers: In order to test the post-purchase satisfaction of the grocery shoppers, the structural equation modeling technique using SAS software (Version 9.0) was applied on five hypotheses: H1: Grocery shopping based on price, H2: Grocery shopping on impulse purchase, H3: Grocery shopping of listed items, H4: Grocery shopping of branded items and H5: Grocery shopping at regular outlet. The factors correlation matrix was used as an input in the model. The model is estimated using the maximum likelihood method. H4: Grocery shopping of branded items with a t-value 3.3756 and H5: Grocery shopping at regular outlet with t-value 4.9218 are found to be significant (at 5% level of significance) in predicting the post-purchase satisfaction of the grocery shoppers. The results are presented in Table- 4 below.



International Journal of Engineering Researches and Management Studies

Table 4. Results of Structural Equation Modeling

Hypothesis	Statement	Standard Error	Coefficient	t-Value	Significance in Predicting Respondents' Satisfaction Level
H1	Grocery shopping based on price	0.08370	0.08467	1.0115	Not significant
H2	Grocery shopping on impulse purchase	0.06346	-0.05998	-0.9452	Not significant
H3	Grocery shopping of listed items	0.08348	0.01473	0.1765	Not significant
H4	Grocery shopping of branded items	0.11041	0.37271	3.3756	Significant
H5	Grocery shopping at regular outlet	0.07378	0.30471	4.1298	Significant

Discussion

On the basis of the different analyses that were carried out, the following picture emerges. The majority of the respondents do grocery shopping once a week and about one-fourth prefer to do grocery shopping twice a week; most of the surveyed respondents indicated that they spend an hour grocery shopping during each visit, 30% disclosed that they spend two hours when they go for grocery shopping and about one-fourth of the surveyed respondents appear to spend more than two hours' grocery shopping.

Factor analysis of the data clearly grouped the statements included in the interval scale into the five factors. These five factors together explained 65.02% of the total variance.

Application of the t-test on all the 22 variables (of the interval scale) to test whether the grocery shopping behavior of the sample respondents differ according to gender and age showed significant differences.

The structural equation modeling technique was applied on five factors to find out the post-purchase satisfaction of the grocery shoppers. The results showed two factors "Grocery shopping of branded items" with a t-value of 3.3756 and "Grocery shopping at regular outlet" with a t-value of 4.1298 to be significant in predicting the post-purchase satisfaction of the grocery shoppers.

Based on the findings of the various analysis carried out, it can be suggested that although the respondents show differences in their grocery shopping behavior depending on their gender and age, there appears to be similarities in their grocery shopping behavior as well. Understanding these similarities, the grocery outlets can design their marketing strategies.

Limitations and Future Research

Firstly, any survey-based method, including that adopted in this study, involves measurement errors, for example, the elicitation of a scale measurement or the respondents' ability to accurately report their level of agreement with the survey statements (Bodey & Grace, 2006). However, efforts were made to design the administered tool to be simple and easy to understand and respond. Convenient sampling was used to collect the data from 264 respondents living in and around the Emirates of Dubai and Sharjah.



International Journal of Engineering Researches and Management Studies

Regarding future research, it is suggested that more samples from other Emirates can be taken for study. Further, separate studies can be undertaken on other shopping behavior toward consumer durables, electronic goods, to name a few

IV. CONCLUSION

Successful grocery stores in this region are very much aware of the competitive environment in which they operate. If the grocery stores wish to continue to be successful, then it is imperative that they strive to know exactly the requirements of their grocery shoppers by constantly keeping track of their grocery shopping behavior. Also, they should convince their shoppers to become their regular and loyal customers by making their offers more attractive not only price wise but also by offering the desired brand, quantity and freshness.

REFERENCES

1. Agarwal, R, Abu Faiz, M., and Gupta, B. (2016). *Purchase Decisions of Organic Produce: Present and Future Buying Intentions*. *Gulf-Pacific Journal of Business Administration*, Vol. 1(1), pp.32–44.
2. Bhatt, S. and Bhatt, A. (2015). *Consumer Behavior towards Packaged Food in Rural Areas: An empirical Study in Ahmedabad District, Gujarat*. *The IUP Journal of Marketing Management*, Vol. 14(1).
3. Bodey, K. and Grace, D. (2006). *Segmenting service “complainers” and “non-complainers” on the basis of consumer characteristics*. *The Journal of Services Marketing* 20 (3), 178.
4. Chebat, J-C., Morrinn, M., and Chebat, D-R. (2009). *Does Age Attenuate the Impact of Pleasant Ambient Scent on Consumer Response?* *Environment and Behavior*, Vol. 41(2), pp. 258–267.
5. Inman, J. J., Winer, R. S., and Ferraro, R. (2009). *The Interplay between Category Characteristics, Customer Characteristics and Customer Activities on In-Store Decision Making*. *Journal of Marketing*, Vol. 73(September), 19–29.
6. Krishnamurti, S. and Agarwal, R. (2013–14). *The Role of Blogs as Expat Consumers Source of Information: An Exploratory Study*. *Skyline Business Journal*, Vol. IX (1).
7. Mortimer, G. (2012). *Toward a Shopping Typology of Primary Male Grocery Shoppers*. *International Journal of Retail & Distribution Management*, Vol. 40(10), pp. 790–810.
8. National Consumer Agency Research Reveals Shopping Habits of Irish Consumer. http://corporate.nca.ie/eng/Media_Zone/Press%20Releases/National%20Consumer%20Agency%20Research%20Reveals%20Shopping%20Habits%20of%20Irish%20Consumer.html (retrieved on 9/11/2014).
9. Nicholls, D. and Bumgardner, M. (2007). *Evaluating Selected Demographic Factors Related to Consumer Preferences for Furniture from Commercial and from Underutilized Species*. *Forest Products Journal*, Vol. 57(12), pp. 79–82.
10. Turcinkova, J., Brychtova, J., and Urbanek, J. (2012). *Preferences of Men and Women in the Czech Republic When Shopping for Food*. *Acta Universitatis Agriculturae Et Silviculturae Mendelianae Brunensis*. Vol. LX(7), pp. 425–432