

**Measuring Halal awareness at Bingol City**

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**Abstract:** Dirty bread factories, the use of halal logo on food produced from unslaughtered chicken and other animals and having pig's DNA in food products as additives are major increasing concerns with rising mobility and awareness in Bingöl city East of Turkey. Religious beliefs influence the purchasers' behaviors and pigs, alcohol and foods dangerous for human body accepted as Najis (ritually unclean) are forbidden in Muslim religion. Hence, a survey with 500 respondents were carried out at Bingöl city at second quarter of 2016 to learn the awareness of inhabitants and compare its results with past studies done in Erbil city/Iraq Kurdistan and Yozgat/Turkey. Bingöl city people are known with their more conservative Islamic living styles in Turkey. Descriptive statistics like means, reliability analysis, factor analysis, one way One-Way ANOVA and correlation models are used to analyze data. Results have some familiarities and differences with Yozgat and Erbil cities results. The results can be used for further studies and commercial firms selling halal products at city. Taste, quality & organic group with 3.75 mean has the highest mean and other critical means come from certification and packaging groups. Moreover, Halal food label on packaging and certifications groups have positive correlation on buying behaviors of costumers. Low level awareness at city can be increased with seminars and classes as since just about 50% of them eat halal foods always. More controls over foods at local markets and groceries can be carried out to increase trust level of costumers as they do not wholly trust products at markets. Hence, they prefer to consume more locally produced organic foods if they can find with suitable prices.

**Keywords:**

Halal Awareness, Bingöl City, Halal Logo, Pig's DNA

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## **1.INTRODUCTION**

Pigs' products and derivatives, alcohol etc. and some foods dangerous for human body are not permissible in Islamic Religion. There are two main certificate providers Turkish Standard Institute (TSE) and GİMDES civil organization in Turkey. World Halal Community, Helalder and HEDEM are other organizations giving halal certificates in Turkey. Differences according to sects of Islam named as Hanafi, Shafi'i, Maliki and Hanbali for Snails, frogs, meat offal, etc. products are major obstacles in Turkey for developing a nationwide standards. Religious beliefs influence the purchaser behaviors of customers and their living styles. Thus consuming halal products is a crucial issue affecting attitudes of buying and expectations. Gender, educational background, occupation and income, age and social status have found to be effective factors on halal awareness. (Kurtoğlu & Çiçek, 2013) Hence, Halal awareness in Bingöl city is analyzed in a study of 500 respondents' survey to learn degree of awareness and to prepare some suggestions to obey Islamic rules. Islam's logic does not base on banns but to protect humanity and every living organism and environment. Bingöl city has about 300 thousands population and the city center has about 100 thousands population. Moreover, the city is wholly Muslim and consumed products are mainly coming from surrounding cities, other developed cities and abroad. Hence, inhabitants are suspicious about the halalic state of products and the production level of city is low due to being in a disadvantaged region East of Turkey, security and emigrations problems.

Good, healthy, safe and high quality assessment is connected with halal concept. Halal foods and products and services including cosmetics, pharmaceuticals, clothing, financial services and tour packages with business opportunities by method of branding, processing and marketing halal foods to Muslim populations are major concerns of Islamic studies recently. (Abdullah et al., 2007) Increasing rate of cancers and other illnesses in Turkey has changed the focus of people to consume more healthy and halal foods. It is known that not healthy foods are the main causes of increasing cancer rate. Many products have been found that they have contained non-halal ingredients in Turkey. As stated by Aslan & Aslan (2016), pig's DNA in some products, non halal slaughtering, not clean products and Genetically Modified Foods(GMO) products are major problems in Turkey both religiously and for health. It is found in their studies that people from Erbil city / Iraq Kurdistan do not have enough halal awareness even they are wholly Muslim from 500 respondents.

## **2.LITERATURE REVIEW**

Halal word or concept meaning allowed, lawful and permitted is applied to consume foods according to Islamic Law and represents some standards and processes like not using alcohol, or drugs and supporting safety, hygiene, reliability and quality assurance in foods and life. (Teng et al., 2013) Allah in the Holly Quran forbids Al-Maytatah (the dead animals-cattle-beast not slaughtered), blood and the flesh of swine. (Holy Koran, verse3) 16% of the entire global food industry is halal and it may increase more up to 30-40% in the future. Asian countries-Malaysia, Indonesia, Thailand, and Singapore have developed halal standards and make regular controls over foods and services. (Spiegel et al.,2012 ) More awareness among Muslims for their responsibility to eat halal foods can increase the market size. (Dali et al., 2009; AAFC, 2011) Moreover, non-Muslim countries try to get more share from halal industry. For example, to re-energize the economy of the Japan, new innovations and concepts are developed to attract more international Muslim students and tourists while automotive and electronics manufacturing of Japan industry have been affected negatively due to oil and gas imports and economic turmoil. (Yusofi & Shutto, 2013) Necessary infrastructure to attract more traders and investors can be provided to

firms in order to make their productions for around 1.8 billion Muslim population in all countries. (Abdullah et al., 2007) It is expected that Non-Muslims countries are in favor of halal foods since they are scientifically healthy for human body.

Ease of people's mobility across the globe has increased the importance of halal foods for Muslims due to difficulties to differentiate between halal and haram food and non-Muslims dominating the food industry like the Cadbury Dairy Milk Roast Almond having pig's DNA. Foods exposed to microbiology, dyes, and flavor, and using of preservatives such as boric acid and benzoic acid are types of processes not obeying the food acts and food regulations of JAKIM (Government of Malaysia's halal certification body). (Arif & Sidek, 2015) Attitude, trust and knowledge are main dimensions at selecting halal foods. Trust the most important factor influencing consumers' intention in purchasing halal products, followed by attitude and knowledge behaviors was found from out of the 380 respondents (207 females and 173 males) in a study at Kota Samarahan in Malaysia. Relative advantages of the product's attributes, strengthened conceivable relationship of the product and its attributes, introducing new attributes and seeking to achieve a more positive attitude to a certain brand are ways of increasing trust. (Shahrinaz et al., 2015) It is found from a study done in Malaysia from 100 Muslim converts' students that education about halal and certifications increases the awareness of halal foods significantly and it is stated as the status of a food product for self-satisfaction. (Kawangit & Guleng, 2016) Moreover, Knowledge and attitudes towards halal food and halal food certification were evaluated in Çanakkale city study by 571 people (300 women ve 271 men) from Canakkale center. Just 22.4% of respondents have enough information about halal food. Moreover, 38.0% of foreign brand products were suspected about halalness. 47.5% of respondents do not care about halal label. Moreover, there is a confidence in the halal certificate of Turkish authorities. ( Bacak et al., 2015)

There is a high the consumers' willingness to pay for the halal logistics with considering individual and environmental characteristics. More knowledgeable about their religion leads consumers to searching more halal products. The halalness of the product in the transportation, handling, and storage stages can be explained to customers in order to increase the trust. knowledge about halal issues and principles can be improved by governments through media coverage of right information like explaining negative aspects of consuming non-halal foods. (Zailani et al., 2016) Supply chain risk defined as "*The potential occurrence of an incident or failure to seize opportunities with inbound supply in which its outcome results in a financial loss for the purchasing firm*" is an important part of halal food integrity of not containing any parts or products of animals that are non-halal to Muslims, not containing any ingredients that are Najis (ritually unclean), processed or manufactured using equipment not contaminated with Najis, not containing any human parts or its derivatives and physically separated from any other food decreed as Najis by Islamic law. Critical control points can be used in all chains to prevent any risks related non-halal. The halal integrity risk increases for overseas suppliers or sub-suppliers especially in non-Muslim countries when food integrity scandal of horse meat in the United Kingdom in 2013 is considered. Production risk, raw material risk, food security risk, outsourcing practices risk, service risk, and logistics risk are major risks in supply chain of halal foods. Better quality product and safer food are major concerns of supply chain of products. However, misleading labeling on the food and making not halal slaughtering are other crucial considerations of Halal Food Supply Chain (HFSC). Trade-off between the quality and cost concept is to be optimized in HFSC while halal foods are

more expensive than other non-halal certified products. ( Ali et al., 2013) Containing prohibited elements (swine’s DNA) in coffee, not controlling the imported raw materials about being halal or not, depending on the supplier from overseas as the local supplier, not being able to make controls for halal products and services, late or not answering distributors confirmation for halal are major problems from seven suppliers of JAKIM as halal certified suppliers. ( Ali et al., 2013) Trainings, proper planning and forecasting, auditing, using appropriate equipment, and processes, updated halal status in chain and halal certification renewal can help to decrease integrity risk internally as shown in Table 1.

Table 1: Internal halal integrity risk mitigation ( Ali et al., 2013)

	Risk Elements	Advantages of internal supply chain integration in halal integrity risk mitigation
Production	<ul style="list-style-type: none"> <li>Ingredients’ halal status instability</li> <li>Long halal certification process (lead time)</li> <li>Contaminations from the storage, equipment, process</li> </ul>	<ul style="list-style-type: none"> <li>Up to date information of halal status shared across the departments</li> <li>Appropriate plans for new menu development and/or halal certification renewal</li> <li>Appropriate halal equipment, process, and supply chain strategy can be sourced and deployed from the insight</li> </ul>
Raw materials	<ul style="list-style-type: none"> <li>Price and halal integrity trade-off in sourcing raw materials</li> </ul>	<ul style="list-style-type: none"> <li>Halal integrity audit output discussed to assist in decision making</li> </ul>
Food security	<ul style="list-style-type: none"> <li>Unusual demands (seasonal) and unexpected situations (product shortages / price fluctuation / poor management)</li> </ul>	<ul style="list-style-type: none"> <li>Proper view in forecasting and planning for the halal food market demands.</li> </ul>
Service	<ul style="list-style-type: none"> <li>Human errors</li> </ul>	<ul style="list-style-type: none"> <li>Training to increase halal understanding and competencies.</li> </ul>

Materials like reliance on certification, outsourcing sub-contracting and logistics like contamination as shown in Table 2 are major external risks in HFSC. Shared practices, integration in activities, increasing transparency for customers, necessary controls, and visibility of products in sub-contracting, meeting halal requirements controls, proper packaging, and explaining services provided in HFSC can decrease the integrity risks externally.

Table 2: External halal integrity risk mitigation( Ali et al., 2013)

	Risk Elements	Advantages of external supply chain integration in halal integrity risk mitigation
Raw materials	<ul style="list-style-type: none"> <li>Over reliance on the certification</li> <li>Low reliability on the halal certificates – fraudulent halal cert</li> <li>Absent of traceability tools</li> <li>No visibility along the supply chain</li> </ul>	<ul style="list-style-type: none"> <li>Shared practice and aims between the focal company and external supersedes halal certification role</li> <li>Integration with regulatory body enhances the certification conformance ability.</li> <li>Information integration with suppliers increase understanding of associated risk and elements facilitating decision making</li> <li>Supplier and consumer integration clears the clutter and increases transparency of the halal process.</li> </ul>
Outsourcing practices	<ul style="list-style-type: none"> <li>Loss of control towards outsourced company</li> <li>Hidden sub-contracting leads towards loss of visibility</li> </ul>	<ul style="list-style-type: none"> <li>Focal firm is provided with more room for controls beyond the contractual agreement</li> <li>Better visibility of the product flow despite sub-contracting its practices</li> </ul>
Logistics	<ul style="list-style-type: none"> <li>Contamination</li> <li>Proper segregation</li> <li>Lack of dedicated halal logistics provider</li> </ul>	<ul style="list-style-type: none"> <li>Ability to stress the special halal requirements to the service provider</li> <li>Understanding the segregation gives better insights for packaging</li> <li>Better view on the service provided; halal and/or non-halal</li> </ul>

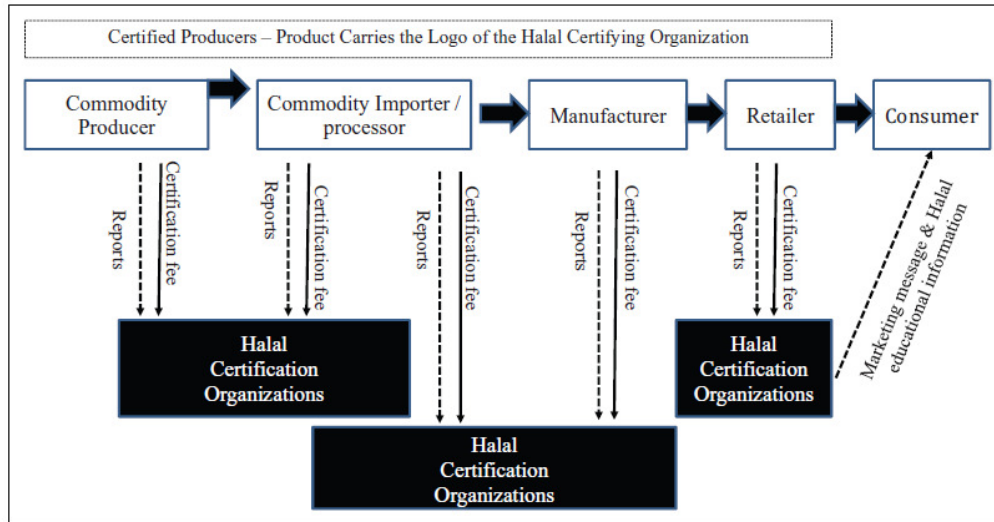


Figure 1: The halal certification and labeling marketing system. (White and Samuel , 2015)

Fair Trade is a wider ethical movement with Fairtrade certification and labeling schemes taking their roots from religious doctrine. Fairtrade Certification pursuing the same social goals by independent certification systems can create inequality in competition. In 1997, the Fairtrade Labeling Organizations (FLO) and harmonize global standards and certification processes for Fair Trade products were established by seventeen separate Fair Trade labeling initiatives to standardize Fair Trade practices leading a single certification and labeling system. Ensuring a guaranteed Fair trade minimum price , providing an additional Fair trade premium , enabling pre-financing for producers, emphasizing the idea of a partnership between trade partners, facilitating mutually beneficial long-term trading relationships, and setting clear minimum and progressive criteria for the production and trade of a product to be socially and economically fair, and environmentally responsible are Fair trade Standards with principles of third party independent monitoring. Manufacturers having Fairtrade label must purchase commodities from certified manufacturers or suppliers certificated by the FLO audit process and have to pay the fair trade foundation a licensing fee. Different interpretations of halal products results in Muslim consumers’ decision-making fatigue and confusion through multiple labels. Hence, a universal certification and labeling solution individual religiosity can be characterized at national, regional, and local levels for all Muslims. (White and Samuel , 2015)

Millions of tons of halal food wastes are disposed into land. However, the global warming phenomenon can be created because of methane gas generation having 21 times higher global warming potential than carbon dioxide by anaerobic process occurred inside the landfill or river bed. Kitchen waste, waste cooking oil, food waste, landscaping and garden waste, wet market waste, night market waste, halal slaughterhouse waste, food processing facility waste and other types of halal waste are to be managed to protect the environment. Biorefinery wastages can be used to make value-added bioproducts such as biodiesel, biogas, bioethanol, animal feed, biofertilizer, bioplastic, biomaterial and others for

economical benefits. Waste materials and its products, the committee of both scientist and muslim scholars, establishing fatwa on the food wastes mixed or in-contact with the non-halal, being in contact with non-halal raw materials and finished products, certification agency endorsing the halal products derived from food waste materials, authority to monitor the halal certification and verification are major issues that are to be solved by authorities responsible from halal market. (Sulaiman et al., 2014) Genetic predisposition-Biotechnology transferring genes between species (such as plant to animal, animal to microorganisms) having significant economic value of whether halal or not is being discussed in Muslim world. A long-term toxicological test is required to learn the effects of GMOs on health. "the products don't harm for human health and it has to be suitable for the Islamic orders and prohibitions." is the key definition that states GMOs are not suitable and cannot be categorized on halal lists. (Karahalil & Karahalil, 2015) For example, there is a risk of existence of GMOs, aflatoxin and ochratoxin A in baby formulas especially in grain included ones. (Mamiyev et al., 2015)

The halalic state of food, especially in Islamic countries can be determined by PCR (Polymerase Chain Reaction), spectroscopic and chromatographic methods in order to find haram DNA in gelatins with help of acetic acid, hydrochloric acid, sulphuric acid, sodium hydroxide and calcium hydroxide. (Esra & Ekinci, 2015) Unwanted porcine originated gelatin produced from mammal's bones, tendon and ligaments and glutamate, and flour additive L-cysteine are determined from human and pig hair in the scope of health and ethical concept in foods, medicine, cosmetics and photography by spectroscopic (Raman, FT-IR / NIR), chromatographic (LC-MS / MS, IR-MS, electrophoresis, Proteomics) and molecular biology techniques (PCR, DNA isolation method). Potato starch can be used as alternative to make gelatin, multidiscipline studies such as chemistry, biology, bioengineering, theology, statistic and food engineering are needed to improve and develop standards for detection of najis. (Doğan et al., 2015; Karapinar et al., 2015; Gulluce et al., 2015) Moreover, mammalian cells, yeast, bacteria and transgenic tobacco can be used to create recombinant gelatin as alternative to current gelatin. (Güllüce et al., 2015)

### **3.THEORETICAL METHODOLOGY**

To carry out the survey, 500 respondents were gathered at different part of Bingöl city center. With 4.5% confidence **interval** (also called margin of error) and 95 % confidence level, 472 sample size is required according to SS (2016) for 100,300 inhabitants of city center. Surveys questions are taken from Kurtoglu & Çiçek (2013), Dali et al. (2009) and Aslan & Aslan (2016) with 1-5 likert-scale. To analyze data, descriptive statistic, correlation and One-Way ANOVA with 95% confidence level are used and compared with past studies.

#### **Hypotheses of Study:**

H1: Customers awareness about halal foods and services is changed according to Age.

As people become older their consumption habits change, thus halal industry traders are to consider that. Moreover, older people prefer to make shopping from nearby places while working people have less time and they prefer to make shopping in close areas.

H2: Customers awareness about halal foods and services is changed according to gender.

Women awareness about halal foods is more important than men awareness while women mainly make shopping and prepare foods in Muslim countries like Turkey.

H3: Customers awareness about halal foods and services is changed according to education level.

Education is one of the main dominator at shaping halal behaviors of customers. More educated people are to be more careful about the ingredients and halalness of foods.

H4: Customers awareness about halal foods and services is changed according to social status.

Single people mainly prefer to eat at restaurants or give orders while married people prepare their foods and eat at home together. Hence, the halalness of restaurants is very important for single customers.

#### **4.SURVEY ANALYZING AND RESULTS**

20.8% of respondents are between 15-20 age and 44.2% of them are 20-30 age group.45.6% of respondents have studied primary school and 26% of them have studied a kind of university. Moreover, 9.2% of them have studied a master or PhD mainly working at Bingöl University. Just 29.6 % of them-98 respondents are women and 77.4% of them have children. About 33% of them( 44 respondents) have trust in restaurant owners selling halal. Furthermore , the average of income of all respondents is 2,243 TL per month which is low when compared with Turkey average. 50% of them believe that they eat halal foods always and 36% of them believe that they eat halal foods sometimes. Hence, they are not sure 100% that they eat halal foods. Just 8.2% of them look at meat seller card stating that they sell halal foods, which means that they trust meat sellers. Moreover, 60% of them prefer formal certification as a way of confirmation than 29. 2% of worldly confirmation. Just 23.2% of them have bought any product with halal certificate and this shows that they do not check well halal certifications at their shopping. Respondents get information mainly from friends and family member and just 7.2% of them get information about halal from governments. The most effective other information source is advertisements with 84.4% and social media as information source is 15.6%. About 50% of them believe that they eat halal foods always and 36% of them eat halal food sometimes. Twenty respondents have defined halal in open question as: pure foods without any ingredients, important for Muslims, halal slaughtering, foods allowed religiously, having halal certificated foods, having halal branding, healthy foods, foods produced in suitable and clean conditions, halal foods for all people, attractive foods and services and beneficial foods for health

##### **4.1.Analyzing Survey Items**

500 respondents from Erbil/c Iraq Kurdistan, 500 respondents from Bingöl city/ Turkey and 295 respondents from Yozgat city/ Turkey survey studies are compared below according to means and differences by step size of 0.8 as shown below with 5 zones. Significant differences are found if any of city falls outside of zone as shown in Table 3.

Difference=  $(5-1)/5=0.8$ ; ( 1-1.8-2.6-3.4-4.2-5) (Equation 1.)

All three cities show low mean for buying halal products from newspaper advertisements with lowest mean coming from Bingöl city. Even there are significant differences for buying halal products among cities, they do not prefer internet for buying halal products. Radio is the least favorable methods for choosing halal products. Television is the most effective advertisement method for Bingöl city people to find halal products while people at Yozgat city prefers the religious people guiding for choosing halal products. People at

Erbil city prefers to buy halal foods according to advices of surroundings and television. People at Bingöl and Yozgat prefer to buy halal foods from local market while people at Erbil city prefer to buy them from supermarket or big shopping centers. People at Bingöl city believe more that organic foods are halal than Yozgat city respondents. People at Erbil city are not sure whether halal products have enough quality or not while other cities respondents think that they have a good quality. People at Turkey cities state that halal certificated products are to be controlled regularly against any frauds while Erbil city respondents trust certification more. People from all cities do not care that much high about the prices of halal products and they are not sure whether halal products are more expensive or not. People at Yozgat cannot find halal certificated products easily and they are ready to buy more in future after they tried a sample. People at Turkey strongly agree that misused halal certificates are to be penalized strongly while Erbil city inhabitants are more neutral about it. Moreover, people at Turkey believe more that halal products are produced at clean environment. People at Erbil cit do not agree that halal products are just for Muslims while people at Bingöl agree more with that item. It is asked to Bingöl city inhabitants that “will you buy halal foods if they are expensive.”, they agree neutrally and do not state that they will buy precisely.



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Table 3: Comparing cities according to means

Item No	Items	Bingöl	Yozgat	Erbil	Total Mean	Difference
6	Buying halal foods trough newspapers advertisements	2.31	2.74	2.76	2.60	Low-Significant Dif.
7	Prefer to buy halal foods from internet advertisements	2.63	2.61	2.53	2.59	Significant Dif.
8	Buying halal foods trough radio	2.35	2.51	2.73	2.53	Low-Significant Dif.
9	Prefers to buy halal foods through brochures	2.6	2.84	2.74	2.74	Not Significant
10	Prefer to buy halal foods from TV advertisements	3.62	2.83	2.75	3.06	High-Significant Dif.
11	Buying halal foods through surroundings like friends, relatives etc.	2.92	3.42	2.81	3.05	Not Significant
12	Prefer to buy halal foods through religious authorities or people	3.34	3.56	-	3.45	Low-Significant Differences
13	Prefer to buy halal foods at local markets	3.22	2.99	2.79	3	Not Significant
14	Prefer to buy halal foods at village markets	3.58	3.28	2.83	3.23	High-Significant Dif.
15	Prefers to buy halal foods from small markets(groceries)	2.91	2.90	2.98	2.93	Not Significant
16	Preferring to buy halal foods from supermarkets	3.01	3.51	3.07	3.19	Not Significant-Low
17	Prefer to buy halal foods trough big shopping centers named as AVM	2.54	3.62	3.07	3.07	Low-Significant Differences
18	Halal foods have high quality	3.47	3.69	3.06	3.40	Significant Differences
19	Halal foods are suitable for costumers tastes	4.04	3.65	2.95	3.54	High-Significant Dif.
20	Organic foods are halal	3.73	3.20	-	3.46	High-Significant Dif.
21	The packages of halal foods are to be attractive	3.76	3.23	2.95	3.13	High-Significant Dif.
22	It is suspicious that there are haram ingredients in packaged foods	3.66	3.21	3.37	3.41	High-Significant Differences
23	All foods may be halal certificated	2.81	3.55	3.51	3.29	Low-Significant Dif.
24	Halal certificated foods are to be controlled	3.95	4.21	3.37	3.84	Significant Dif.
25	Fake certified products' manufactures are to be penalized	4.35	4.29	3.58	4.07	Not Significant
26	Having guarantee on halal foods is important.	3.36	4.21	3.51	3.69	Low-Significant Dif.
27	The brand of halal food is important	3.65	3.85	3.31	3.60	Significant Dif.
28	Halal produced products should have halal certificates in our country	3.73	3.95	3.5	3.72	Not Significant
29	Prefer to buy halal foods at their initial/ market entry time	3.13	3.13	3.03	3.09	Not Significant
30	Halal products are more expensive than non-halal products	3.32	3.16	3.05	3.17	Not Significant
31	Low prices mean low quality for halal products	3.38	3.22	2.93	3.17	Not Significant
32	Prefer to buy halal foods after trial/samples trials	4.33	3.60	3.16	3.69	High-Significant Differences
33	Price is the main determinant when buying halal foods	2.80	3.05	2.90	2.91	Not Significant
34	Prefer to buy halal foods with promotions/gifts	2.27	2.72	2.62	2.53	Low-Significant Dif.
35	When they are at discounts, they prefer to buy	2.64	3.05	2.65	2.78	Not Significant
36	Halal products are to be given with extra services in order to be more attractive	2.87	3.31	3.02	3.06	Not Significant
37	Will you buy if halal foods are expensive?	3.12	-	-	-	Not Compared
38	Do you suggest halal foods to non-Muslims	3.16	-	-	-	Not Compared
39	If halal foods are sold at supermarket, they can be cheaper	3.16	3.13	2.87	3.04	Not Significant
40	Products produced by small firms are to be cheaper	2.85	2.81	3.01	2.99	Not Significant
41	I believe that halal products are just for Muslims	3.36	2.93	2.46	2.74	High- Significant
42	Believing that places where halal products are produced are clean	2.89	3.50	3.29	3.38	Significant
43	It is difficult to find halal certificated foods	3.08	3.48	2.74	3.03	Not Significant

Advertisements methods when purchasing halal foods, reliability and certifications of halal products the role of promotions and price in purchasing, the role of village and local markets on buying halal foods, the role of taste, quality and organic foods, the role of retailing in halal food, the role of sample and finding halal products and the role of aimed population, marketing and branding are main groups of survey questions from Kurtoglu &

Çiçek (2013) study and reliability and certifications of halal products was found the most important group while advertisements methods when purchasing halal foods has the lowest mean from Yozgat city study. From Aslan & Aslan(2016) study, being expensive, certification, quality and services features, advertisements, place, promotions, selling just halal products and differences from non-halal are major groups and certifications, promotions , differences from non-halal foods and trust are factors effecting the price of halal that halal foods are more expensive than non-halal foods by linear and logistic regression. Certification is found the most effective factor affecting being expensive or not (0,1) by binary variables.

Table 4 : Descriptive statistics and ANOVA for age

Item	Age	Frequency	Mean	F-Anova	Sig.	Decision
Preferring to buy halal foods from local market	15-20	104	3,23	0,684	0,50	Supported
	20-30	221	3,29			
	30+	175	3,14			
	Total	500	3,22			
Preferring to buy halal foods from supermarket	15-20	104	2,84	3,623	0,02	Supported
	20-30	221	2,91			
	30+	175	3,23			
	Total	500	3,01			
Manufactures doing frauds on halal foods are to be penalized	15-20	104	4,19	4,565	0,01	Supported
	20-30	221	4,38			
	30+	175	4,40			
	Total	500	4,35			
Places producing halal foods are clean	15-20	104	4,19	4,250	0,01	Supported
	20-30	221	4,38			
	30+	175	4,40			
	Total	500	4,35			

Younger people prefer to buy halal from local markets while older people make their shopping mainly from supermarket. To attract more 30+ age people, halal foods are to be sold at supermarkets. These people are mainly busy and they have less time at searching halal foods at local markets. 30+ age group states that frauds over halal foods are to be panelized strictly mainly by governments as shown Table 4 and they believe that halal foods are produced in clean places.

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Table 5: Descriptive statistics and ANOVA for Education

Item	Education	Frequency	Mean	F-Anova	Sig.	Decision
Learning halal foods from friend, relatives etc.	Primary School	228	3,1184	2,404	0,03	Supported
	College	139	2,6978			
	Two years university programs	26	2,7308			
	University	61	2,9016			
	Master	32	2,6875			
	PhD	14	3,1429			
	Total	500	2,9280			
Buying from local market	Primary School	228	3,1272	2,890	0,01	Supported
	College	139	3,4532			
	Two years university programs	26	3,4615			
	University	61	3,3279			
	Master	32	2,6250			
	PhD	14	3,1429			
	Total	500	3,2280			
Buying from small markets	Primary School	228	3,6404	2,252	0,04	Supported
	College	139	3,7194			
	Two years university programs	26	3,9615			
	University	61	3,9672			
	Master	32	3,8438			
	PhD	14	3,7143			
	Total	500	3,7340			
Organic foods are halal	Primary School	228	3,7061	,870	0,50	Supported
	College	139	3,7986			
	Two years university programs	26	3,8846			
	University	61	3,7705			
	Master	32	3,3750			
	PhD	14	4,0000			
	Total	500	3,7360			
Having halal certification on foods	Primary School	228	3,7061	,859	0,50	Supported
	College	139	3,7986			
	Two years university programs	26	3,8846			
	University	61	3,7705			
	Master	32	3,3750			
	PhD	14	4,0000			
	Total	500	3,7360			
Having a gift with halal foods	Primary School	228	2,2281	,865	0,505	Supported
	College	139	2,3094			
	Two years university programs	26	2,4231			
	University	61	2,4098			
	Master	32	2,2188			
	PhD	14	2,0714			
	Total	500	2,2780			
Clean places of halal foods where produced	Primary School	228	2,9079	2,215	0,052	Supported
	College	139	3,0863			
	Two years university programs	26	2,5000			
	University	61	2,9180			
	Master	32	2,3438			
	PhD	14	2,7143			
	Total	500	2,8960			

Primary school graduates and fourteen academicians state that they get information mainly from their surrounding about halal. It can be said as the education level increases, people search more about halal foods. Primary, master and PhD students prefer less to buy foods from local market while all respondents mainly prefer to buy from small markets since they are more close to these places. Especially, university students mainly do their shopping at small markets/groceries. Except master graduates, other respondents agree

that organic foods are halal because they believe that they do not include any ingredients. Academician and university students agree that there should be halal label on halal foods in Turkey while master graduates are neutral about it. Respondents do not want any gift while buying halal foods as incentive they believe that it is Allah rules and they have to obey it while academicians have the lowest mean for that item. As the education level increases, people trust less at places that they produce halal foods in clean manner.

Table 6: Descriptive statistics and ANOVA for gender

Item	Gender	Frequency	Mean	F-Anova	Sig.	Item
Buying from TV	Female	98	3,6939	0,439	0,50	Supported
	Man	402	3,6045			
	Total	500	3,6220			
Organic food are halal	Female	98	3,9796	4,552	0,03	Supported
	Man	402	3,6741			
	Total	500	3,7340			
Producing by small firms makes halal foods cheaper	Female	98	3,7449	8,894	0,03	Supported
	Man	402	3,2662			
	Total	500	3,3600			

Females buy halal foods more from TV advertisements as shown above and they agree more that organic foods are halal than males. Moreover, males believe that small firms can produce halal foods more cheaply. Female and males agree more on items of survey except three items in Table 6. Females mainly make shopping and prepare foods in Bingöl city. Hence, halal food producers can attract more females by TV advertisements. Families with children prefer to buy halal foods at promotion time and respondents not having children believe that small firms can produce more cheaply halal foods than big organizations as shown in Table 7.

Table 7: ANOVA according to having children or not

Item	Children	Frequency	Mean	F-Anova	Sig.	Decision
Preferring to buy halal foods at initial time(Promotion Period)	Yes	387	3,8114	6,464	0,011	Supported
	No	113	3,4779			
	Total	500	3,7360			
Producing by small firms makes halal foods cheaper	Yes	387	3,2920	3,862	0,050	Supported
	No	113	3,5929			
	Total	500	3,3600			

#### 4.2 Grouping of Items

The grouping items is derived from (Kurtoğlu & Çiçek, 2013) study and their means are shown in Table 8 for Bingöl city survey. When means are compared, certification, taste, quality & organic and packaging groups have the highest mean while the lowest mean comes from Supermarket& AVM role and advertisements method groups. This shows that halal consumers care about the taste, quality and being organic mostly. Having halal food label on packaging and certifications are expected to have positive effect on buying behaviors of costumers. However, promotion of halal foods and price and selling at

Supermarket& AVM role group show that they care more about the halalness than price and selling place.

Table 8: Grouping of Items

Group	Group No	Items	Mean
Advertisements Method	AM	S6,S7,S8,S9,S10,S11,S12	2,8349
Certification	CER	S23, S24,S25,S26,S28	3,6424
Promotion of Halal and price	PHP	S33,S34,S35,S40,S30	2,8840
Buying from village, local and Groceries	VLG	S13,S14,S15	3,2420
Taste, quality & organic	TQO	S27,S40,S29	3,7533
Branding, Marketing and Targeted Population	BMT	S27,S40,S29	3,3820
Packaging	PAC	S21, S22	3,7130
Retailing role	RET	S16,S36,S31	3,0907
Supermarket& AVM role	SUP	S16,S17,S39	2,8047
Being Cheaper or more expensive	CHE	S30, S40, S31	3,3567

Advertisements method group has positive correlation with VLG and SUP groups which is an expected result that advertisements play an important role at buying behaviors. There is a strong correlation between Promotion of Halal and price and BMT, CHE and TQO groups. Promotion of Halal and price group and retailing role have positive correlations with CHE group.

Table 9: Correlations of groups

GROUP	AM	CER	PHP	VLG	TQO	BMT	PAC	RET	SUP	CHE
AM	1	-0,076	-0,007	0,101*	-0,061	-0,009	-0,045	0,053	0,112*	-0,063
CER	-0,076	1	-0,016	0,009	0,013	0,009	,0027	-0,048	-0,071	0,007
PHP	-0,007	-0,016	1	0,026	0,122**	0,363**	-0,016	0,069	0,004	0,696**
VLG	0,101*	0,009	0,026	1	0,028	0,046	-0,019	0,000	-0,012	0,037
TQO	-0,061	0,013	0,122**	0,028	1	0,040	0,009	-0,031	-0,003	0,108*
BMT	-0,009	0,009	0,363**	0,046	0,040	1	0,064	-0,016	0,005	0,327**
PAC	-0,045	0,027	-0,016	-0,019	0,009	0,064	1	-0,104*	-0,095*	-0,008
RET	0,053	-0,048	0,069	0,000	-0,031	-0,016	-0,104*	1	0,341**	0,353**
SUP	0,112*	-0,071	0,004	-0,012	-0,003	0,005	-0,095*	0,341**	1	-0,005
CHE	-0,063	,007	0,696**	0,037	,108*	0,327**	-0,008	0,353**	-0,005	1

\*. Correlation is significant at the 0.05 level (2-tailed).  
 \*\*. Correlation is significant at the 0.01 level (2-tailed).

**5.CONCLUSION**

There are two types of customers for halal foods in Bingöl city. Local inhabitants mainly prefer to buy foods from local markets and university students and graduates prefer grocery stores while university staffs make their shopping from supermarkets. However, there are not strict controls in local and village markets and the halality of food is questionable while there are some labels like GİMDES on some foods of supermarkets. Thus, there is a need of controls to check the halal status of foods sold at markets besides quality. Respondents think that organic foods are halal and the status of organic foods is not exact while some foods are sold under the name of organic foods while they are not in reality. To solve these kinds of problems, governments have to make necessary controls by independent authorities while many manufactures deceive people for economical reasons.

To attract more 30+ age customers, halal foods are to be sold at supermarkets. This age group states that frauds over halal foods are to be panelized strictly mainly by

governments As the education level increases, people trust less at places that halal foods are produced in clean manner. The best way of increasing awareness is media and women can be reached more easily with TV advertisements. Both genders are using social media like facebook, instagram etc. Hence, advertisements over social media about halal foods can be prepared to increase awareness and make customers more careful about frauds. Further studies about the role of social media on halal foods and services can be carried out. Local newspapers are read largely in Bingöl city and some advertisements about halal foods can be given on them. Conferences and lectures about halal foods and services can be given at Bingöl University in some programs.

Low mean score of caring the selling of halal foods at Supermarket& AVM group shows that costumers care more about the halalness than price and selling place. Promotion of Halal and price group and retailing role group have positive correlations with being cheap or expensive group. The nature of halal food industry is not significantly different than traditional food industry that customers want to buy halal foods for obeying the rule of God and also they believe that they are more healthy foods.

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