

A review of packaging awareness consumers level in terms of material and product information in food safety: The case of Turkey

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ABSTRACT

Packaging is an advertising tool that increases sale of products for consumption and helps to present food sources safely to the consumer. Market share of food packaging industry, which plays an important role in product branding, is quite large commercially. Today, the increase in consumer awareness in the field of food quality and safety has also increased selectivity in packaging material and caused product information on packaging to be read more frequently. In this study, approach of consumers in Turkey to product information on food packaging and packaging material selection has been examined. This research across Turkey was carried out with the selection of 40 metropolitan cities representing the country between 2019-2020. In examinations, it has been determined that consumers give importance to food packaging in general, packaging selection is made more carefully as education level increases and product information written on packaging is given importance.

Keywords: Food safety, Consumer awareness, Food packaging, Product information.

1. INTRODUCTION

Food safety is an issue that threatens developed countries as well as underdeveloped or developing countries. World Health Organization states that approximately 600 million people a year become ill due to lack of food security and it is reported that 420,000 people lost their lives due to these diseases, and as a result, 33 million healthy lives were lost [1]. Packaging materials are an important industry component used with food products to ensure products are safe for human consumption. However, packaging materials can potentially make food unsafe and it is also known that it may pose a risk to health of consumers. Globalization and internet shopping have brought food packaging technologies to food safety and is constantly improving within the framework of its quality [2]. Packaging design with visual factor feature is effective for marketers and it is an economic tool [3,4]. On the other hand, the consumer generally trusts the product with its packaging design [5]. Because the choice of packaging plays an important role in determining the quality and shelf life of food.

In recent years, in parallel with developments in technology, packaging materials with very different properties are used in many sectors, and in food industry, mostly glass, cardboard, aluminum and plastic packaging materials are widely used. Especially plastics are economical and versatile materials that are widely used in food packaging [6,7]. Today, packaging is also important as a communication tool, as it fulfills functions of providing information about product as well as protecting food. For this reason, packaging and information on it have become one of issues that consumer attaches great importance to during purchasing phase. Especially since health risk potentials of materials are

now known by consumer, they have become a serious choice in product purchase. When compared with consumer groups from other countries, attitudes of consumers in Turkey and Europe towards food labels and affecting factors were found to be similar. Level of knowledge and understanding of food label information were found to be directly proportional [8]. Getting food safety education at a young age can make it easier for a person to overcome food safety problems in the future [9]. In this study, approach of the consumers in Turkey to the information on food packaging and the selection of packaging material throughout country has been examined with a survey study and held in 40 metropolitan cities representing the country between 2019-2020.

2. MATERIAL METHOD

Data analysis obtained from the research conducted throughout Turkey was determined by SPSS version 26 program (IBM Corp.; Armonk, NY, USA) and mean and standard deviation of continuous variables; categorical variables were summarized as numbers, percentages and minimum-maximum values, and situation between qualitative groups was evaluated with cross tables and chi-square applications. 0.05 was used as level of significance, and it was stated that there was no relationship or difference in case of $p > 0.05$.

Research was carried out in 40 provinces selected to represent 7 regions in Turkey between the years 2019-2020. A total of 1015 people aged 18 and over living in these provinces were surveyed. Questionnaire form used as a data collection tool is administered to individuals face-to-face depending on education level of participant (literacy level) or it was applied online and participants were informed in advance that their data would be published.

2.1. Approach of consumers in Turkey to food packaging material and product information on the packaging

The Socio-Economic Characteristics of Consumers (table 1), evaluation results of criteria they pay attention to on label while purchasing food (table 2), chi-square test results on which package material is more important (table 3), results of questionnaire were evaluated to determine preference relationship between socio-economic characteristics and two similar foods according to packaging variable (table 4) and distribution of packaging selection by groups (figure1)

Table 1. Socio-economic characteristics of surveyed consumers

Variables	Groups	n	%
Gender	Female	619	61
	Male	394	39
Age	18-25	415	41
	26-35	237	23
	36-45	194	19
	46-55	109	11
	>55	58	5,7
Educatuonal status	Primary Education	116	12
	High school	334	33
	Licence	448	44
	Master/Doctorate	103	10
	Not literate	12	1,2
Current employees		551	55
Income level	2000-3000	488	48
	3100-4000	201	20
	4100-5000	134	13
	5100-6000	76	7,5
	>6000	114	11
Number of household	1	46	4,5
	2	137	14
	3	219	22
	4	360	36
	>4	251	25
Total		1013	100

Table 2. Evaluation results of the criteria that consumers pay attention to on the label while purchasing food

Variables	Gruplar	Expiration date		Additive		Nutritional Content		Shelf life		Security certificate	
		n	%	n	%	n	%	n	%	n	%
Gender	Female	528	62	160	61	133	57,8	128	62	101	58,4
	Male	329	38	104	39	97	42,2	79	38	72	41,6
Age	18-25	355	41	90	34	103	44,8	93	45	64	37
	26-35	202	24	70	27	60	26,1	56	27	46	26,6
	36-45	159	19	60	23	42	18,3	35	17	42	24,3
	46-55	91	11	35	13	21	9,1	17	8,2	17	9,8
	>55	50	5,8	9	3,4	1,7	230	2,9	207	4	2,3
Educational status	Primary Education	99	12	11	4,2	6	2,6	5	2,4	4	2,3
	High school	289	34	56	21	64	27,8	57	28	37	21,4
	License	378	44	150	57	122	53	116	56	99	57,2
	Master/Doctorate	83	9,7	46	17	37	16,1	28	14	32	18,5
	Not literate	8	0,9	1	0,4	1	0,4	1	0,5	1	0,6
Income level	2000-3000	422	49	86	33	86	37,4	87	42	54	31,2
	3100-4000	168	20	50	19	42	18,3	45	22	35	20,2
	4100-5000	112	13	40	15	36	15,7	26	13	26	15
	5100-6000	59	6,9	33	13	24	10,4	19	9,2	20	11,6
	>6000	96	11	55	21	18	23	30	15	38	22
Number of household	1	40	4,7	13	4,9	11	4,8	11	5,3	10	5,8
	2	118	14	37	14	25	10,9	24	12	21	12,1
	3	183	21	57	22	53	23	45	22	39	22,5
	4	293	34	87	33	75	32,6	69	33	58	33,5
	>4	223	26	70	27	66	28,7	58	28	45	26
Total		857	100	264	100	230	100	207	100	173	100

Table 3. Chi-square test results on which package material is more important in consumer groups

Variables	Gruplar	Glass Jar	Plastic	Tin
Gender	Female	$X^2 = 3.2733a$ $p=0.228$ $sd= 2$		
	Male			
Age	18-25	$X^2 = 3.575a$ $p=0.887$ $sd= 8$		
	26-35			
	36-45			
	46-55			
	>55			
Educational status	Primary Education	$X^2 = 22.722$ $p=0.002$ $sd= 8$		
	High school			
	License			
	Master/Doctorate			
	Not literate			
Income level	2000-3000	$X^2 = 4.111$ $p=0.828$ $sd= 8$		
	3100-4000			
	4100-5000			
	5100-6000			
	>6000			
Number of household	1	$X^2 = 2.7809a$ $p=0.953$ $sd=8$		
	2			
	3			
	4			
	>4			

In table 3, a statistically significant difference was found in the educational status of consumer groups according to safety of package material ($X^2 = 22.722, p > 0.05$), it was determined that this difference was caused by illiterate group. There is no significant difference in other groups. Types of packaging that consumers trust by gender and education level research, it was seen that women and undergraduates give more importance to glass packaging, and plastic packaging is always last choice [10].

Table 4. Determination of preference relationship between socio-economic characteristics of consumers and two similar foods according to packaging variable

Variables	Groups	Packaging	
		n	%
Gender	Female	36	5,8
	Male	38	9,7
Age	18-25	41	9,9
	26-35	12	5,1
	36-45	12	6,2
	46-55	7	6,5
	>55	2	3,4
	Educational status	Primary Education	4
High school		25	7,5
license		36	8,1
Master/Doctorate		8	7,8
Not literate		1	8,3
Current employees	No	38	8,3
	Yes	36	6,5
Income level	2000-3000	31	6,4
	3100-4000	11	5,5
	4100-5000	10	7,5
	5100-6000	11	14,5
	>6000	11	9,6
Number of household	1	0	0
	2	8	5,8
	3	13	6
	4	25	7
	>4	28	11,2

In table 4, in line with the data from 7 provinces of Turkey, Socio-Economic characteristics of consumers and preference relationship between two similar foods were determined according to packaging variable, and distribution according to groups is shown in figure 1.

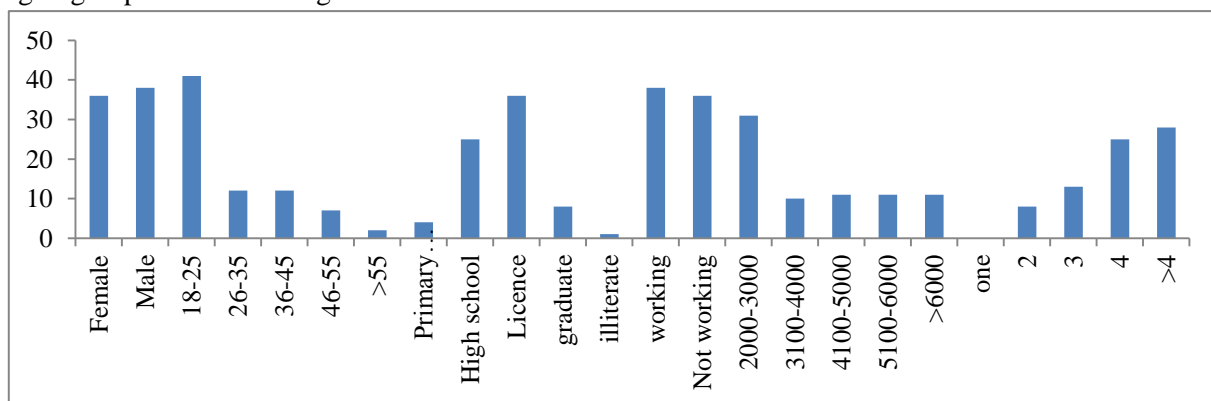


Figure 1. Distribution of packaging selection by groups (n=74).

A total of 100 people were surveyed in various shopping centers and markets in Istanbul. Therefore, it has been assumed that answers of participants, who were interested in face-to-face survey study and who made evaluations about statements in survey, were sincere and information they gave was correct. Accordingly, collected data were analyzed with a statistical package program (SPSS) [11]. Again, in a study on packaging in province of Burdur in Turkey, it was observed that as level of education increases, information that should be included in packaging of milk and products becomes more important [12]. In a survey study in Küçükçekmece district of Istanbul, 230 questionnaires obtained from subjects were coded and entered into SPSS program with SPSS 11.0 version and statistical analyzes were carried out [13].

3. RESULT AND DISCUSSION

When results of face-to-face and online surveys made to consumers aged 18 and over are evaluated in study conducted throughout Turkey; It was seen that 33% of participants were high school graduates and 44.2% were graduates, their income levels were generally between 2000-3000 TL, and about half of individuals participating in survey were working in a job, while other half were unemployed table 1. When the approach of consumers to packaging material in Turkey is examined, it has been determined that preference of plastic packaging material is at lowest level and preference of glass packaging is higher than tin and plastic packaging [10]. In table 2, it has been determined that female participants pay attention to expiration date, additive content, safety certificate symbols and, lastly, approximate nutritional content in terms of important features on food packaging that should be considered by the consumers. In various shopping centers and markets in Istanbul, 72% of participants stated that packaging was reused after using the product, 65% of participants stated that packaging advertised product, 64% of participants stated that design affects purchasing decision and 95% of participants stated that packaging affects their purchasing decisions. 69% of e-survey participants state that they can buy unpackaged products for cheaper shopping [11]. In study conducted throughout Turkey, very few of illiterate participants pay attention to packaging compared to other participants. Those with an income level of 5100-6000 TL care more about packaging than others (table 4) and education level is between 30% and 40% [10].

4. CONCLUSION

In this study, it was observed that the higher the education level, the more careful the packaging selection and the more careful evaluation of the product information written on the packaging. The data obtained on the basis of provinces revealed that consumers generally attach importance to food packaging. On the other hand, it was determined that women gave more importance to packaging than men, but it was determined that the increase in income level did not increase the importance given to the label information on the packaging.

In this study, it has been found that as education level increases, packaging selection is more careful and it is seen that product information written on packaging has been evaluated more carefully. Studies conducted on a provincial basis have revealed that consumers attach importance to food packaging. On the contrary, increase in income level did not increase importance given to product information written on packaging.

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