ISSN: 2783-2678

International journal of Innovation in Management Economics and Social Sciences

Journal homepage: www.ijimes.ir

Int. J. Inn. Man. Eco. Soc. Sci. Vol. 3, No, 4, 1-17. (2023)

A Modeling for Enhancing Consumer Trust in Organic Food through Authentic Content in Social Networks

Ehsan Tashakkori[1*], Yaser Sobhanifard[2] , Rasoul Jamshidi[3], Mohammad Ebrahim Sadeghi[4]

[1] *Ph.D. student of Technology Management, IUST, Tehran,Iran*
[2] *Department of Business Administration and Engineering, IUST , Tehran, Iran*
[3] *Department of Industrial Engineering, School of Engineering, Damghan University, Damghan, Iran*
[4] *Department of Industrial Management, Faculty of Management, University of Tehran, Tehran, Iran*

ARTICLE INFO

Received:21 June 2023
Reviewed:7 August 2023
Revised:3 September 2023
Accept:23 October 2023

Keywords: Consumer, organic food, trust, social networks, content marketing

ABSTRACT

Purpose: This research aims to identify factors that improve consumers' trust in organic food in social networks by providing authentic content, prioritizing these factors, and presenting a model for them.

Methodology: In the phases of this research, first, the research literature in this field was examined. Then, with the theoretical saturation approach and through interviews with primary samples of the target audience and organic food consumers, a questionnaire was designed to measure the impact of 20 factors on consumer trust. Four hundred twenty-five organic food consumers confirmed this questionnaire and its factors

Findings: The results led to the discovery of 20 effective factors, which were categorized and modeled with the help of exploratory factor analysis in 4 categories of hidden variables with the names of emphasis on standards, description of product validity, credible recommenders, and valid supply. In the final step, with the help of a random forest algorithm in the artificial neural network, 20 identified factors were prioritized.

Originality/value: For the first time, this study seeks to increase consumers' trust in organic food in social networks by improving the presentation of appropriate advertising content in messages. So far, no research has been done in this field, specifically in improving consumption and, as a result, the sale and acquisition of the organic food market.

* Corresponding Author: e_tashakori@pgre.iust.ac.ir

1. Introduction

At the end of the 20th century, the world witnessed a change in consumer preference for organic food products. This consumption increased dramatically in this period. Traditionally, many farmers were unaware of modern food production techniques, so they did not use artificial fertilizers, pesticides, or other chemical preservatives in the food production process [1] . However, a trend emerged between the 1940s and 1960s that led farmers to use more efficient and intensive food production techniques. Despite the awareness of the benefits of organic food, this trend flourished. The reason for this was the increase in human population and devastating famines in certain regions of the world, which required more food production [2] . The reason for this was the increase in human population and devastating famines in certain regions of the world, which required more food production. As a result of this trend, organic farming lost its importance, and consumers preferred conventional products to organic products due to their abundance and lower prices [3] .

Finally, the indiscriminate use of chemicals meant that consumers bought products with no nutritional value. The high prevalence of diseases such as diabetes and heart disorders sounded an alarm that made consumers realize the importance, quality, and safety of food more [4] . In response to this trend, in the late 20th century, the organic food movement began as a reaction to conventional farming methods that heavily depend on pesticides, chemical fertilizers, antibiotics, and growth hormones, which are harmful to human health and the environment. The most common motives for buying organic food are concerns for health and the environment [5] .

The increasing desire for these products is such that today these products occupy a large share of the food market, and this share is constantly increasing [6] . For example, the organic food market grew from 20 billion dollars in 2002 to 64 billion dollars in 2012 [7] , and this amazing growth was such that in 2021 this share reached 497 billion dollars.

If we put attention to this large market with amazing growth together with the increasing use of social networks by people, we can reach interesting results for activities in the field of the organic food business. According to the statistics of 2015, only in the United States, 65% of adults use social networks, and this statistic was higher than 90% for people between the ages of 18 and 25 [8] . Certainly, this statistic has increased even more now, showing that people, especially the future generations, are spending more and more time on social networks.

If we pay the high time spent by most people on social networks alongside the flourishing growth of the organic food market, we can conclude that there is a very good opportunity to encourage and build the trust of organic food consumers on social networks, and it must be done. He did not forget this opportunity.

Some researchers have already pursued this high importance. For example, some studies have investigated the role of trust in selling organic food through social networks [9, 10] . However, they do not know how to increase this trust and persuasion. Consumers have not trusted these foods more through social networks. In a more specific case, Sobhanifard and Eshtiaghi conducted research from this particular angle, that six categories of general factors with the names of valid experiences, generation of valid content, valid guarantees and certificates, valid information on product benefits, emphasis on the naturalness, and communication with previous buyers introduced social network messages to strengthen trust in organic food [11] .

There is such research, but there has not been clearer and more explicit research to discover how trust-building texts are sent in social networks.

In this regard, for the first time, this study seeks to increase consumers' trust in organic food in social networks by improving the presentation of appropriate advertising content in messages. So far, no research has been done in this field, specifically in improving consumption and, as a result, the sale and acquisition of the organic food market.

The results of this research can be useful for all food businesses. Using the solutions this research seeks to discover and present, they can strengthen their internet marketing department in social networks. The research results can improve their presented content in social networks and increase the share of these companies in the food market by increasing the trust of potential and actual consumers of organic food.

From a social point of view, the results of this research can help the health of society members. People will use healthier foods as they increase their trust in organic food products. This issue also reduces the costs of dealing with diseases because it prevents many wrong nutritional behaviors.

2. Research Literature

2.1. Acceptance of Organic Food

The word organic refers to the way or practice of farmers when growing, producing, and even processing products such as fruits, vegetables, summer herbs, and legumes. At the same time, dairy products and even meat, which are in the category of animal products, are not excluded from this classification. Farmers and ranchers who grow their crops organically do not use conventional and conventional methods for fertilization, pest control, or even common methods of dealing with various livestock diseases [12] .

A household's consumption of organic products depends on important factors such as product price, income, consumer occupation, age, number of children, etc. Consumer buying behavior is a function of demographic factors such as age, gender, education level, income level, and household size [13] .

Aertsens and colleagues studied the effect of individual variables on the consumption of organic products. According to this research, a person's knowledge of the physical properties of organic products is one of the most important positive factors. The product's higher price and lack of proper availability are the most important negative factors affecting this issue. The lack of information and awareness of the characteristics of organic products is the main reason for not buying by American consumers [14] .

In the case of any purchase, both online and offline, various factors are involved in the customer's decision to purchase. Therefore, to increase organic product sales, we need to know the factors influencing the decision to buy organic products [6] . Sobhanifard stated that the naturalness, trust, health, and marketing affect the purchase of organic products [15] .

Also, among the basic and important factors affecting the acceptance of organic food consumption, the most important factor is the marketing environment, the marketing mix, the harm caused by the consumption of poisons and chemicals, the destructive effects that these substances leave in products, health-related issues, and education [16, 17] .

2.2. Consumer Trust in Organic Products in The Real World

Rousseau and colleagues have provided a widely supported definition of trust: "a psychological state

involving the intention to accept vulnerability based on positive expectations of another's intention or behavior" [18] .

Also, Wolff emphasized that trust is an intermediate stage between knowledge and ignorance because a complete lack of knowledge makes actions unpredictable, while complete knowledge completely removes the need for trust. Therefore, if the world is familiar and predictable, trust is not necessary [19] .

Understanding the trust in organic food is complex because customer expectations focus on multiple aspects and effects [20] . Expectations for health, taste, and environmental performance are the main drivers of organic food sales, but expectations for superior food safety and animal welfare are also prominent [21] .

In organic food markets, trust is essential and can influence the consumer's decision. Organic products are essentially credit goods that differentiate themselves in the market based on a claim (being organic). Therefore, maintaining trust in organic food is important for retailers, the food industry, and the agricultural sector. The higher the consumer awareness of organic food labels, the higher the trust in organic food labels increases significantly. Apart from the awareness of the ease of purchase, it can also improve this trust [22] .

Also, in this context, Chen found that age, education level, food safety knowledge, assessment of government regulations, and shopping convenience are important predictors of trust in organic food [4] .

From a general point of view, other research on the trust relationship of a product (not only organic food products) shows that trust is a function of valid information such as quality or safety signals. Consumers who trust this information are willing to accept a higher price for the product because more information reduces information asymmetry [23] .

In the specific case of organic food, trust in organic food depends on the consumer's level of knowledge and information regarding organic food. Consumers with more information about organic food products are likely to trust those products more [24] . Of course, it should be noted that consumers may sometimes trust retailers but do not trust the manufacturer's product manufacturer or even the manufacturer's suppliers [25] .

Also, characteristics such as freshness, taste, non-chemical compounds, and naturalness of organic food improve trust and reduce the feeling of risk towards its consumption. In addition, perceived food quality improves customers' trust in organic food retailers. In terms of services, perceived service quality improves customers' trust in organic food retailers [26] .

Finally, it should be noted that even store image is particularly important for building consumer trust because consumer trust in retailers' quality is mostly positively related to trust in organically labeled products [27] .

2.3. Consumer Trust in Social Networks

Although trust is important in the real world, it is much more important in cyberspace, and its importance is because trust plays a special role under conditions of change and instability [28] . When there are no traditional laws, policies, criteria, rules, or principles, people turn to personal relationships for guidance, and the quality of these relationships is largely determined by the level of trust [29] .

The importance of trust in the social network environment is felt while this importance is also felt for organic food. However, although research on the methods of increasing trust in organic food has been

done in the real world (Table 1), these researches are few in social networks.
While some other research has been done about the general effect of trust on the sale of these products [9, 10] , such research cannot be considered an explicit discovery of factors that should be in the text of social network messages to increase this trust. In the few types of research conducted, Sobhanifard and Eshtiaghi have generally discovered six categories of factors to strengthen these factors [11] However, the problem is that to focus on improving this trust for these products in social networks, new research should be done in a more specific way so that it can show more precisely how this trust is increased. This is the important thing sought in the continuation of this research and a survey method. Research wants to improve this trust from the perspective of creating authentic content.

Table 1. Factors affecting consumers' trust in organic food extracted from previous research

	References	Factors
(Montoya-Weiss, Voss, & Grewal, 2003)	[30]	Content in which the product is fully described
(Ayyub, Wang, Asif, & Ayyub, 2018)	[31]	Content that expresses the convenient availability of goods and services
(Khare & Pandey, 2017)	[26]	Content that mentions the 100% naturalness of the product
(Khare & Pandey, 2017)	[26]	Content that shows that the product is free of any chemical compounds and toxins
(Montoya-Weiss et al., 2003)	[30]	Content that pays a fair price for the product
(Konuk, 2018)	[27]	A picture of the store
(Poppe & Kjærnes, 2003)	[32]	Content that shows the product's health inspection certificate
(Ayyub et al., 2018)	[31]	Content that shows the product has an organic food label and regulatory approvals
(Hajli, 2015)	[33]	Content that expresses the therapeutic properties of the product
(Cyr & Bonanni, 2005)	[34]	No excessive advertising and spam
(Nasir & Karakaya, 2014)	[35]	Content that shows the proper packaging of the product
(Montoya-Weiss, Voss, & Grewal, 2003)	[36]	Content that shows the disadvantages of not using that product

3. Methodology

This research was done in 3 stages. In the first stage, research literature related to the topic was discussed, and an attempt was made to answer the main research question. In this regard, 12 factors (Table 1) mentioned directly in other research were proposed as factors and initial assumptions. These factors were not definitive because they were extracted from research that was not exactly related to the current research topic and was related to trust-building factors in the real world and not on the Internet and social networks.
In the second step, using the theoretical saturation approach and using primary consumers, these factors were increased to 27 factors. Then in the third step, with the opinion of experts and the calculation of CVR, these factors were reduced to 20 items, and thus the desired questionnaire with 20. The factor introduced in Table 2 was constructed.

CVR is a famous and very common method for measuring content validity. To calculate this index, the opinions of experts on the content of the test are used; By explaining the objectives of the test to the elites and providing them with operational definitions related to the content of the questions, they are asked to rate each of the questions based on the three-part Likert scale "the item is necessary," "the item is useful but not necessary" and "the item is necessary." Do not have" to classify. Then, based on the following formula, the content validity ratio is calculated:

$$CVR = \frac{n_E - \frac{N}{2}}{\frac{N}{2}} \quad (1)$$

In the above relationship, n_E is the number of experts who answered the "necessary" option, and N is the total number of experts. Based on the number of experts who evaluated the questions, the minimum acceptable CVR value is determined according to Table 2. Questions for which the calculated CVR value is lower than the desired value, according to the number of experts evaluating the question, should be excluded from the test. Because it is obtained based on CVR, they do not have acceptable validity.

Table 2. The minimum acceptable CVR value based on the number of experts

CVR value	Number of experts
0.99	5
0.99	6
0.99	7
0.78	8
0.75	9
0.62	10

The initial questionnaire was distributed among eight experts, 7 of whom had a doctorate, and the others had a master's degree. Seven men and one woman answered the questions to assess content validity. The experts were between 25 and 41 years old; According to the table above and the answers of the experts to each question "the item is necessary," "the item is useful but not necessary," and "the item is not necessary," the content validity of the questionnaire was examined and questions number 10, 12, 13, 15, 20, 25, 26 were removed from the initial questionnaire. Finally, the final questionnaire was prepared with 20 factors shown in Table 3.

In the fourth step, a questionnaire was distributed among organic food consumers who are also active on social networks, and 425 questionnaires were analyzed. In this questionnaire, the consumers mentioned above were asked to declare their level of agreement with the effect of each of these 20 factors in social network messages on their motivation to consume these goods. The range of numerical agreement was between 1 and 5. The demographic characteristics of these 425 people are described in Table 4.

In the fifth step, exploratory factor analysis was used to discover hidden variables (main concepts) and perform modeling. Then, in the last step, i.e., the sixth step, the neural network method with a random forest algorithm was used to rank the discovered factors in the field of influence on increasing consumer trust.

Table 3. 20 new factors extracted through interviews with some food consumers and experts

	Factors
1	Introducing and describing the product in full
2	State the availability of goods and services
3	Referring to the 100% naturalness of the product
4	Explain the fair price of the product
5	Display a picture of the supplier's store
6	Show that the product is free of any chemical compounds and toxins
7	Referring to the product health inspection certificate
8	Showing organic food labels and regulatory approvals
9	Expressing the therapeutic properties of the product
10	Show proper product packaging
11	Showing reports related to the presence of the reporter and presenter at the production site and showing the production process
12	Referring to the existence of famous standards in the product
13	Show a picture or video of the production environment
14	Mention the approval of experts in the field of the food industry and famous institutions
15	The talk of famous people and called traditional medicine about that product
16	Providing statistical and medical information about users against other people
17	Referring to the expert's speech regarding the benefits of using the desired product
18	Referring to pictures and videos of feedback from previous consumers of that food
19	The content received belongs to a trusted person in food medicine
20	Linking new content to one of the scientific and academic centers

Table 4. Sampling demographic characteristics

Items	%	N
Gender		
Male	63.77	271
Female	36.23	154
Education		
Only a high school degree	18.59	79
Bachelor's degree	41.65	177
Master's degree	32.47	143
Doctoral Degree	7.29	26
Age		
11-30	62.6	266
30-55	32.2	137
Above 55	5.2	22

4. Data Analysis Method

4.1. Exploratory factor analysis

In the following, exploratory factor analysis was used to analyze the data of this research. SPSS software was used to perform its calculations. With the help of exploratory factor analysis, the number of analysis variables can be reduced, and hidden variables can be extracted to model and simplify the analysis [11] . In the mentioned method, Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin Measure of Sampling

Adequacy calculations were used to determine the adequacy of the number of samples taken from the statistical community of organic food consumers, which are shown in Table 5.
In this table, if the significant Bartlett test is less than 5%, then the adequacy of the samples is confirmed. Another indicator of the adequacy of the samples in this test and the corresponding table is the Kaiser-Mayer-Olkin test (KMO) index. This index should be more than 5.00 [37] .
As seen in Table 5, the value of the KMO coefficient in this research is equal to 0.919, indicating the adequacy required for the selected samples. Also, according to this table, Bartlett's Test of Sphericity was significant ($p < .001$) and supported conducting an EFA.

Table 5. KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.919
Bartlett's Test of Sphericity	Approx. Chi-Square	3955.107
	df	190
	Sig.	0.000

Next, Table 6 shows the commonalities extraction in the SPSS software output. The commonalities are shown under "Extraction." The values of this column show the amount of variance that the model extracted from the 20 variables predicts. For example, the value of 0.679 in the row related to the variable explaining the product's fair price shows that the model extracted by exploratory factor analysis can predict 67.9% of the changes in this variable. These values show the usefulness of these 20 variables in the model. If these values are closer to zero, their presence in the discovered model is useless, and they can be removed from the subsequent analysis in the construction and explanation of the model. Because the calculated values for all variables are above five or very close to this value, no variable was removed from the modeling process.

Table 6. Commonality matrix with loadings for each of the items

Factors	Initial	Extraction
Introducing and describing the product in full	1.000	.499
State the availability of goods and services	1.000	.586
Referring to the 100% naturalness of the product	1.000	.700
Explain the fair price of the product	1.000	.679
Display a picture of the supplier's store	1.000	.607
Show that the product is free of any chemical compounds and toxins	1.000	.702
Referring to the product health inspection certificate	1.000	.769
Showing organic food labels and regulatory approvals	1.000	.728
Expressing the therapeutic properties of the product	1.000	.639
Show proper product packaging	1.000	.631
Showing reports related to the presence of the reporter and presenter at the production site and showing the production process	1.000	.457
Referring to the existence of famous standards in the product	1.000	.641
Show a picture or video of the production environment	1.000	.513
Mention the approval of experts in the field of the food industry and famous institutions	1.000	.620

The talk of famous people and called traditional medicine about that product	1.000	.587
Providing statistical and medical information about users against other people	1.000	.549
Referring to the expert's speech regarding the benefits of using the desired product	1.000	.684
Referring to pictures and videos of feedback from previous consumers of that food	1.000	.539
The content received belongs to a trusted person in food medicine	1.000	.508
Linking news content to one of the scientific and academic centers	1.000	.583

Table 7 examined the factor structure, which revealed high cross-loading on four components. These four components were given descriptive labels. These four components and their sub-variables are shown in Table 8. According to this table, we will have the desired model according to Fig. 1.

Table 7. Rotated component matrix

	Component			
Factors	**1**	**2**	**3**	**4**
Introducing and describing the product in full	.580	-.144	.204	-.017
State the availability of goods and services	.623	-.252	.211	.299
Referring to the 100% naturalness of the product	.662	-.308	.333	-.234
Explain the fair price of the product	.614	-.432	.247	.233
Display a picture of the supplier's store	.548	-.172	-.209	.484
Show that the product is free of any chemical compounds and toxins	.714	-.283	.048	-.331
Referring to the product health inspection certificate	.726	-.336	-.234	-.273
Showing organic food labels and regulatory approvals	.726	-.262	-.240	-.273
Expressing the therapeutic properties of the product	.702	-.084	.370	-.045
Show proper product packaging	.554	-.162	-.054	.544
Showing reports related to the presence of the reporter and presenter at the production site and showing the production process	.517	.233	-.330	.160
Referring to the existence of famous standards in the product	.726	.020	-.334	-.047
Show a picture or video of the production environment	.640	.081	-.302	.081
Mention the approval of experts in the field of the food industry and famous institutions	.709	.179	-.253	-.143
The talk of famous people and called traditional medicine about that product	.532	.436	.333	-.053
Providing statistical and medical information about users against other people	.622	.357	.185	.031
Referring to the expert's speech regarding the benefits of using the desired product	.723	.401	.035	-.008
Referring to pictures and videos of feedback from previous consumers of that food	.599	.388	.121	.122
The content received belongs to a trusted person in food medicine	.600	.317	.211	-.055
Linking new content to one of the scientific and academic centers	.700	.156	-.227	-.129

Table 8. Hidden factors and their manifested variables

Hidden variable (components)	Manifest variable (factors)
Emphasis on standards	Referring to the product health inspection certificate
	Showing organic food labels and regulatory approvals
	Showing reports related to the presence of the reporter and presenter at the production site and showing the production process
	Referring to the existence of famous standards in the product
	Show a picture or video of the production environment
	Mention the approval of experts in the field of the food industry and famous institutions
	Linking new content to one of the scientific and academic centers
Description of the product validity	Introducing and describing the product in full
	Referring to the 100% naturalness of the product
	Explain the fair price of the product
	Show that the product is free of any chemical compounds and toxins
	Expressing the therapeutic properties of the product
Credible recommenders	The talk of famous people and called traditional medicine about that product
	Providing statistical and medical information about users against other people
	Referring to the expert's speech regarding the benefits of using the desired product
	Referring to pictures and videos of feedback from previous consumers of that food
	The content received belongs to a trusted person in food medicine
valid supply	State the availability of goods and services
	Display a picture of the supplier's store
	Show proper product packaging

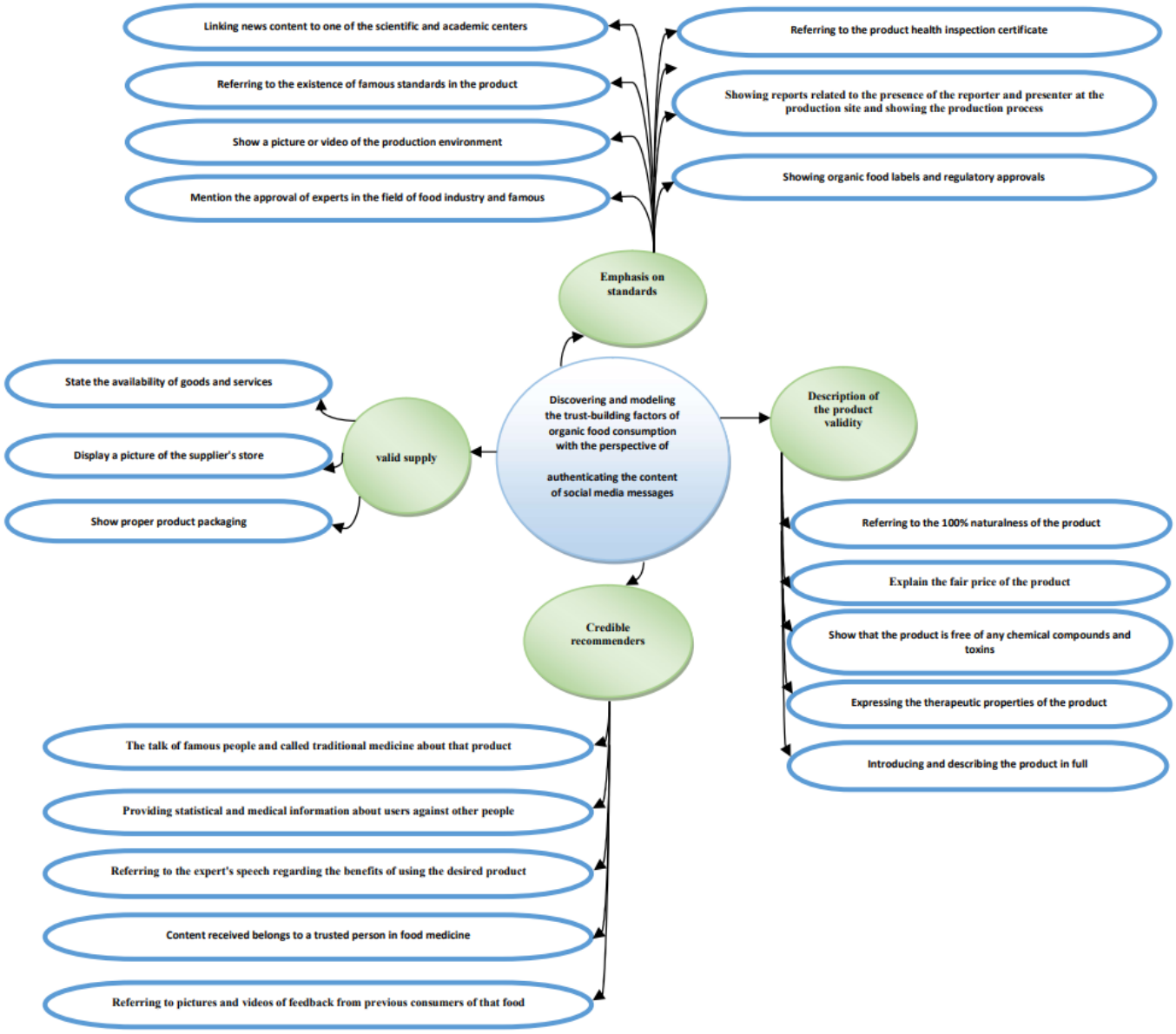

Fig. 1. Factors increasing consumers' trust in organic food using social media messages with the approach of providing authentic content

For more accuracy in the model and find reasons for trust, twenty factors were ranked using an artificial neural network and the widely used Random Forrest algorithm. Artificial neural networks are data mining and information classification methods that can be used to model and rank complex problems [38, 39] .

For this purpose, the independent factor of the amount of organic food consumption during the week was used as the output variable of the neural network, and the twenty factors discovered through exploratory factor analysis were used as the input variables of the network. The codes implemented for this purpose in the Python software are described in Schema.1. the factors ranking has been provided in Table 8.

Schema. 1. Python software codes using the Random Forrest algorithm

```
from sklearn.ensemble import RandomForestClassifier
from sklearn.preprocessing import StandardScaler
import matplotlib.pyplot as plt
import pandas as pd
from sklearn.preprocessing import LabelBinarizer
from sklearn.model_selection import train_test_split
from sklearn.metrics import confusion_matrix
from sklearn.linear_model import SGDClassifier

Q = ['q1', 'q2', 'q3', 'q4', 'q5', 'q6', 'q7', 'q8', 'q9', 'q10', 'q
11',
     'q12', 'q13', 'q14', 'q15', 'q16', 'q17', 'q18', 'q19', 'q20']
data = pd.read_excel("D:\EhsanJoon\AAA\data2.xlsx")
X = data[Q]
y = data['output']

x_train, x_test, y_train, y_test = train_test_split(X, y, test_size=
0.3, random_state=42)
scaler = StandardScaler()
X_train = scaler.fit_transform(x_train)
X_test = scaler.transform(x_test)

rfc = RandomForestClassifier(n_estimators=1000, criterion='entropy',
 random_state=42)
rfc.fit(x_train, y_train.astype('int'))
rfc_pred = rfc.predict(x_test)
for param, importance in zip(Q, rfc.feature_importances_):
     print(f'feature {param} importance is : {importance}')
print("RFC score : {}".format(rfc.score(x_test.astype('int'), y_test
.astype('int'))))

data['output'].hist()
plt.show()
```

Table 8. Importance coefficients of factors

Factor No.	Importance coefficient	Factor No.	Importance coefficient
1	0.0444064	11	0.0569624
2	0.0483890	12	0.0434247
3	0.0480570	13	0.0442655
4	0.0499047	14	0.0412287
5	0.0616195	15	0.0572743
6	0.0530650	16	0.0430701
7	0.0500334	17	0.0442305
8	0.0431227	18	0.0641391
9	0.0519016	19	0.0607759
10	0.0460103	20	0.0481194

In Table 8, any factor with a higher coefficient has a higher importance. Therefore, five factors refer to pictures and videos of the feedback of previous consumers of that food, showing a picture of the store that supplies the product, the content received belongs to a trusted person in food medicine, the talk of famous people, and the so-called traditional medicine about that product and brand. Giving reports related to the presence of the reporter and presenter at the production site and showing the production process are respectively of higher importance in the subject. That is, if these 5 points, which have a valid advertising content approach, are present in the messages of social networks, it is more likely than others that the audience of that message will increase their sense of trust in the relevant organic food.

5. Discussion and Review

After reviewing the research literature, using theoretical saturation approaches, and interviewing experts, this study modeled the survey data obtained from 425 consumers with exploratory factor analysis methods and then used an artificial neural network with a forest algorithm. Randomly ranked the factors.

As mentioned earlier, trust-building factors can be strengthened with 20 factors as a solution from the point of view of validating the content of social networks, and these 20 factors are divided into four conceptual categories with the names of emphasis on standards, description of product validity, credible recommenders, and valid supply. Are categorized.

This research is in line with the continuation of the research in which one of the general trust-building factors for the consumption of organic foods was introduced to create authentic content [11] . However, this research introduced and ranked 20 more detailed solutions for this approach to increasing trust. In the ranking, the two factors referring to the pictures and videos of the feedback of the previous consumers of those foods, displaying a picture of the store supplying the goods, were placed in the first and second ranks of importance and effectiveness in increasing trust.

The first factor refers to the pictures and videos of the feedback of the previous consumers of those foods in line with many studies that play an important role in increasing sales and persuading or satisfying new customers in the opinion of previous consumers and customers of a product [40-42] .

Also, the second factor, i.e., the display of a picture of the supplier's store, has been mentioned in some researches, confirming this importance [39, 43, 44] .

The obtained results can be used for all food businesses in terms of management applications. The twenty discovered factors are solutions to improve trust in organic food and, as a result, increase the long-term sales of companies because increasing trust is an important factor in increasing long-term sales and expanding a company's market share [45] .

Also, paying attention to the selected top ranks can improve the content marketing provided in social networks about organic foods, and according to research [46] .

It can be hoped that by using the first ranks of this ranking, which was done with the help of the neural network method, the output variable of the neural network used (the amount of consumption of organic foods) will significantly improve.

From a social point of view, the results of this research can help the health of society members. By increasing their trust in organic food products, people will use healthier foods because many researchers confirm a positive relationship between consuming organic foods and improving people's health [47] .

This issue also reduces the costs of dealing with diseases because it prevents many wrong nutritional behaviors. Prevention over treatment has always been emphasized in medicine to improve society's costs.

6. Research limitations

Among the limitations we faced in this research was that the collected data is mainly related to consumers' lives with increasing financial power. Because organic products are one of those foods that, at least in Iran, are usually offered at a high price, and only people with an average to high-income deal with them, it has been assumed that if this survey were done in all classes of society, it would bring a better result for the study.

Also, another limitation in this research was that people did not have a correct estimate of the exact amount of organic food consumption; Therefore, several people left the part related to the amount of

consumption of organic products blank or answered it with outlier numbers, which forced the researchers to identify only 425 questionnaires as usable out of 1200 questionnaires distributed, so that the validity of the following research is confirmed.
Another limitation we faced in this research was that some respondents were not familiar with the scientific objectives of the research and gave unrelated answers. Sometimes, people did not spend enough time answering the questions correctly. However, the number of these people was small, and their answers were deleted. About 450 questionnaires were answered and returned; These 450 questionnaires were examined, and outlier data were removed from them 425 questionnaires were finally approved, and all modeling was applied to this number.

7. Future Research

Considering that our first limitation in this research was the financial ability of organic food consumers, it is suggested to consider more demographic factors to know the statistical population so that the effect of these factors on the building blocks of trust can be determined more. Also, the relevant research tried to investigate the effective factors from the consumers' point of view. Despite this, necessary suggestions were made for various institutions and individuals, but the scope of the subject requires that this issue be examined from the perspective of different departments (marketing, producer, seller, supplier of raw materials, etc.); For example, the trust factor from the point of view of organic product sellers can be a suggestion for future research topics.
Another limitation we faced in this research was that some of the respondents were not familiar with the scientific objectives of the research and gave unrelated answers. To avoid this problem in future research, the study sample should be specified more precisely and selected from a community. Who cares more about these issues; For example, the members of the association of organic and green goods consumers can be examined as a separate statistical sample so that problems such as the limitations mentioned above do not arise, and it seems that these people are more sensitive to questions such as the amount of food consumption and the amount of presence in the network. Social factors, another limitation of our research, are more accurate. Also, each hidden factor extracted separately can be the subject of future research.

8. Conclusion

The research aimed to identify and investigate the factors affecting the trust of organic food consumers in social networks by providing authentic content, prioritizing these factors, and providing a model for building this trust. To achieve this purpose, after studying the research literature in this field and interviewing the primary samples of the target audience and organic food consumers, a questionnaire was designed, and the information from 425 questionnaires of organic food consumers was used for data analysis. The results led to the discovery of 20 effective factors, which were categorized and modeled with the help of exploratory factor analysis in 4 categories of hidden variables with the names of emphasis on standards, description of product validity, credible recommenders, and valid supply. In the final step, with the help of a random forest algorithm, 20 identified factors were prioritized.

Funding

None.

Conflicts of Interest

None.

Authors Contributions

Ehsan Tashakkori: conceptualization, methodology, software.
Yaser Sobhanifard: Supervision
Rasoul Jamshidi: visualization, validation, writing- reviewing and editing
Mohammad Ebrahim Sadeghi:visualization, validation, writing- reviewing and editing

References

[1] Grosglik, R. (2017). Citizen-consumer revisited: The cultural meanings of organic food consumption in Israel. *Journal of Consumer Culture*, *17*(3), 732-751. https://doi.org/10.1177/1469540515623609

[2] Koswatta, T.J., et al. (2023). Factors affecting public perception of scientific information about organic foods. *British Food Journal*, *125*(2), 587-607. https://doi.org/10.1108/BFJ-08-2021-0874

[3] Mutlu, N. (2007). Consumer Attitude and Behaviour towards Organic Food: Cross-cultural study of Turkey and Germany.

[4] Chen, M.F. (2009). Attitude toward organic foods among Taiwanese as related to health consciousness, environmental attitudes, and the mediating effects of a healthy lifestyle. *British Food Journal*, *111*(2), 165-178. https://doi.org/10.1108/00070700910931986

[5] Durham, C.A. (2007). The Impact of Environmental and Health Motivations on the Organic Share of Produce Purchases. *Agricultural and Resource Economics Review*, *36*(2), 304-320. https://doi.org/10.1017/S1068280500007115

[6] Akter, S., et al. (2023). Why Organic Food? Factors Influence the Organic Food Purchase Intension in an Emerging Country (Study from Northern Part of Bangladesh). *Resources*, *12*(1), 5. https://doi.org/10.3390/resources12010005

[7] Zhu, Y. (2018). Using the theory of planned behavior to investigate what influences Chinese intention to purchase organic food. *China-USA Business Review*, *17*(6), 324-333.

[8] Penni, J. (2017). The future of online social networks (OSN): A measurement analysis using social media tools and application. *Telematics and Informatics*, *34*(5), 498-517.

[9] Tariq, A., et al. (2019). Organic food consumerism through social commerce in China. *Asia Pacific Journal of Marketing and Logistics*, *31*(1), 202-222. https://doi.org/10.1108/APJML-04-2018-0150

[10] Bernal Jurado, E., et al. (2019). Agri-food companies in the social media: a comparison of organic and non-organic firms. *Economic Research-Ekonomska Istraživanja*, *32*(1), 321-334. https://doi.org/10.1080/1331677X.2018.1547203

[11] Sobhanifard, Y. and K. Eshtiaghi. (2020). Exploratory modelling and ranking of the trust factors of messages about organic foods in social networks. *British Food Journal*, *123*(2), 594-609. https://doi.org/10.1108/BFJ-04-2020-0302

[12] Willer, H., et al. (2012). The World of Organic Agriculture: Statistics and Emerging Trends.

[13] Winer, R.S. (2009). New Communications Approaches in Marketing: Issues and Research Directions. *Journal of Interactive Marketing*, *23*(2), 108-117. https://doi.org/10.1016/j.intmar.2009.02.004

[14] Aertsens, J. (2011). Organic food as an emerging market: personal determinants of consumption, supply governance and retail strategies. In *Faculty of Bioscience Engineering* (Vol. PhD). Ghent, Belgium: Ghent University.
[15] Sobhanifard, Y. (2018). Hybrid modelling of the consumption of organic foods in Iran using exploratory factor analysis and an artificial neural network. *British Food Journal*, *120*(1), 44-58. https://doi.org/10.1108/BFJ-12-2016-0604
[16] Khan, Y., I. Hameed, and U. Akram. (2023). What drives attitude, purchase intention and consumer buying behavior toward organic food? A self-determination theory and theory of planned behavior perspective. *British Food Journal*, *125*(7), 2572-2587. https://doi.org/10.1108/BFJ-07-2022-0564
[17] Leyva-Hernández, S.N., et al. (2023). Main Factors that Explain Organic Food Purchase Intention. *Innovar: Revista de ciencias administrativas y sociales*, *33*(87), 93-108.
[18] Rousseau, D.M., et al. (1998). Not So Different After All: A Cross-Discipline View Of Trust. *Academy of Management Review*, *23*(3), 393-404. https://doi.org/10.5465/amr.1998.926617
[19] Wolff, K.H. (1950). The sociology of georg simmel.
[20] Jürkenbeck, K. (2023). Consumer trust in organic food producers and its influence on consumers' attitudes toward food reformulation and its sensory consequences. *Food and Humanity*, *1*, 793-799. https://doi.org/10.1016/j.foohum.2023.07.031
[21] Aertsens, J., et al. (2009). Personal determinants of organic food consumption: a review. *British Food Journal*, *111*(10), 1140-1167. https://doi.org/10.1108/00070700910992961
[22] Jahn, G., M. Schramm, and A. Spiller. (2005). The Reliability of Certification: Quality Labels as a Consumer Policy Tool. *Journal of Consumer Policy*, *28*(1), 53-73. https://doi.org/10.1007/s10603-004-7298-6
[23] Murphy, B., et al. (2022). Consumer trust in organic food and organic certifications in four European countries. *Food Control*, *133*, 108484.
[24] Hughner, R.S., et al. (2007). Who are organic food consumers? A compilation and review of why people purchase organic food. *Journal of Consumer Behaviour*, *6*(2-3), 94-110. https://doi.org/10.1002/cb.210
[25] Chaniotakis, I.E., C. Lymperopoulos, and M. Soureli. (2010). Consumers' intentions of buying own-label premium food products. *Journal of Product & Brand Management*, *19*(5), 327-334. https://doi.org/10.1108/10610421011068568
[26] Khare, A. and S. Pandey. (2017). Role of green self-identity and peer influence in fostering trust towards organic food retailers. *International Journal of Retail & Distribution Management*, *45*(9), 969-990. https://doi.org/10.1108/IJRDM-07-2016-0109
[27] Konuk, F.A. (2018). The role of store image, perceived quality, trust and perceived value in predicting consumers' purchase intentions towards organic private label food. *Journal of Retailing and Consumer Services*, *43*, 304-310. https://doi.org/10.1016/j.jretconser.2018.04.011
[28] Nguyen, C.H., et al. (2023). Viewing advertisements in social networks: the attitude-intention inconsistency revisited. *Online Information Review*, *47*(7), 1248-1263. https://doi.org/10.1108/OIR-10-2021-0563
[29] shirkhodai, m., et al. (2017). The Effect of Social Media on Trust and Brand Loyalty Formation in the Brand Community (Case Study: The Social Network of Instagram). *New Marketing Research Journal*, *7*(3), 107-124. https://doi.org/10.22108/nmrj.2017.103055.1181
[30] Montoya-Weiss, M.M., G.B. Voss, and D. Grewal. (2003). Determinants of Online Channel Use and Overall Satisfaction with a Relational, Multichannel Service Provider. *Journal of the Academy of Marketing Science*, *31*(4), 448-458. https://doi.org/10.1177/0092070303254408
[31] Ayyub, S., et al. (2018). Antecedents of Trust in Organic Foods: The Mediating Role of Food Related Personality Traits. *Sustainability*, *10*(10), 3597. https://doi.org/10.3390/su10103597
[32] Poppe, C. and U. Kjærnes. (2003). *Trust in Food in Europe: A Comparative Analysis*. National Institute for Consumer Research. https://books.google.com/books?id=_J9KAAAAYAAJ
[33] Hajli, N. (2015). Social commerce constructs and consumer's intention to buy. *International Journal of Information Management*, *35*(2), 183-191. https://doi.org/10.1016/j.ijinfomgt.2014.12.005
[34] Cyr, D. and C. Bonanni. (2005). Gender and website design in e-business. *International Journal of Electronic Business*, *3*(6), 565. https://doi.org/10.1504/IJEB.2005.008536
[35] Nasir, V.A. and F. Karakaya. (2014). Underlying Motivations of Organic Food Purchase Intentions. *Agribusiness*, *30*(3), 290-308. https://doi.org/10.1002/agr.21363

[36] Padilla Bravo, C., et al. (2013). Assessing determinants of organic food consumption using data from the German National Nutrition Survey II. *Food Quality and Preference*, *28*(1), 60-70. https://doi.org/10.1016/j.foodqual.2012.08.010

[37] Sobhanifard, Y. and S.M.S. Hashemi Apourvari. (2022). Environmental sustainable development through modeling and ranking of influential factors of reference groups on consumer behavior of green products: The case of Iran. *Sustainable Development*, *30*(5), 1294-1312. https://doi.org/10.1002/sd.2317

[38] Zeinali, Y. and B.A. Story. (2017). Competitive probabilistic neural network. *Integrated Computer-Aided Engineering*, *24*(2), 105-118. https://doi.org/10.3233/ICA-170540

[39] Aghekyan-Simonian, M., et al. (2012). The role of product brand image and online store image on perceived risks and online purchase intentions for apparel. *Journal of Retailing and Consumer Services*, *19*(3), 325-331. https://doi.org/https://doi.org/10.1016/j.jretconser.2012.03.006

[40] El-Said, O.A. (2020). Impact of online reviews on hotel booking intention: The moderating role of brand image, star category, and price. *Tourism Management Perspectives*, *33*, 100604. https://doi.org/10.1016/j.tmp.2019.100604

[41] Mouly Potluri, R. and H.W. Hawariat. (2010). Assessment of after-sales service behaviors of Ethiopia Telecom customers. *African Journal of Economic and Management Studies*, *1*(1), 75-90. https://doi.org/10.1108/20400701011028176

[42] Xu, X. (2021). What are customers commenting on, and how is their satisfaction affected? Examining online reviews in the on-demand food service context. *Decision Support Systems*, *142*, 113467. https://doi.org/10.1016/j.dss.2020.113467

[43] Balaji, K. and R. Maheswari. (2021). Impact of Store Image Dimensions on Shopper's Attitude, Perceived Value, and Purchase Intention. *SAGE Open*, *11*(1), 215824402199482. https://doi.org/10.1177/2158244021994824

[44] Choi, C.-j. (2021). The Effect of Perceived Store Image on Purchase Intention in Service Environments: The Causal Role of Self-Congruity and Affective Commitment. *Journal of Channel and Retailing*, *26*(1), 149-169. https://doi.org/10.17657/jcr.2021.01.31.7

[45] Daabseh, T.K.I.A. and A. Aljarah. (2021). The relationship between online sale and customer value co-creation: The mediating role of e-satisfaction and e-trust. *International Journal of Data and Network Science*, 97-106. https://doi.org/10.5267/j.ijdns.2021.2.005

[46] Jang, S., J. Chung, and V.R. Rao. (2021). The importance of functional and emotional content in online consumer reviews for product sales: Evidence from the mobile gaming market. *Journal of Business Research*, *130*, 583-593. https://doi.org/10.1016/j.jbusres.2019.09.027

[47] Japutra, A., et al. (2022). Unraveling the mechanism to develop health consciousness from organic food: a cross-comparison of Brazilian and Spanish millennials. *British Food Journal*, *124*(1), 197-220. https://doi.org/10.1108/BFJ-10-2020-0952