



Motives of Willingness to Buy Organic Food under the Moderating Role of Consumer Awareness

Zohra Ghali^{1,2*}

¹Department of Management, College of Administrative and Financial Sciences, Saudi Electronic University (SEU), P.B. 11147, ABHA 61321, Kingdom Saudi Arabia (KSA).

²Department of Marketing, Higher Institute of Management, University of Tunis, 41, Freedom Street, Bardo 2000, Tunis, Tunisia.

Author's contribution

The sole author designed, analyzed, interpreted and prepared the manuscript.

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ABSTRACT

Aims: The present paper aims to study a set of motives favoring the consumer willingness to buy organic food in the context of developing market (Tunisia). This study also endeavors to examine the moderating role of awareness in the relationships between willingness to buy and its motives.

Place and Duration of Study: This research work was developed from May to December 2019. The hypotheses were tested in a developing country (Tunisia).

Methodology: To test the research hypotheses as well as the overall model fit, the Structural Equation Modeling (SEM) method has been used. A survey was conducted from 16 June to 31 August of 2019 in several supermarkets and organic grocery shops in Tunisia.

Results: The findings of a quantitative study involving 480 Tunisian consumers of organic food products indicate that health consciousness and knowledge of organic food are significant drivers of willingness to buy. The intensity of these relationships is positively moderated by awareness. However, concern for the environment did not prove to exert any significant influence on willingness to buy.

Conclusion: This study provides interesting managerial guidelines for policymakers to switch to organic farming that is beneficial for health and environment. It also allows significant insights for marketers to formulate an effective marketing strategy through exploring some crucial drivers of willingness to buy organic food while enhancing the consumers' awareness.

Keywords: Organic food; environmental concern; health consciousness; knowledge; moderating role; awareness; willingness to buy.

1. INTRODUCTION

Over the last few years, consumption of organic food has shown rampant growth [1,2]. This is because environmental problems, food-related diseases and health doubts kept emerging in the media in relation to everyday products' purchasing [3,4]. Consequently, the market of organic production is nowadays growing steadily and organic food becomes increasingly popular [5]. Organic consumption is indeed shown to provide the consumer with multiple benefits [6,7] and has become one of the fastest growing trends, especially in developed countries [8]. Thus, organic food has become more present in the daily purchases of consumers who are more concerned by their health, well-being and environment [9,10].

According to Burch [11], organic food is defined as *"food guaranteed to have been produced, stored and processed without the addition of synthetically produced fertilizers and chemicals"*. For Smith and Paladino [12], a food product is certified as 'organic' if it is produced and manufactured with the respect of standards right through all aspects of production. Generally, organic food products are considered as a better alternative of conventional counterparts [13]. This is because they are healthier, tastier and environmental friendly [1,8,7]. Considering these benefits, it has become crucial to promote the consumption of organic food, especially in developing markets, where the organic consumption is still in a nascent stage [7].

Based on the recent statistics of Willer and Lernoud [14], organic foods are mainly consumed in developed countries in Europe and North America (over 90% of the total consumption). However, almost 86% of total organic producers are from developing countries in Latin America, Africa and Asia. These statistics expressed, on one hand, the huge gap between the levels of organic consumption in developed and developing countries. On other hand, they expressed the huge gap between the levels of production and consumption of organic

food in developing countries due to the strategy of mass export adopted by emerging governments [14]. In order to boost organic consumption in these countries, further effort from governments and policymakers should be provided to improve the consumer awareness of organic food benefits and make it close to the consumers. In addition, more research works have become not only necessary and relevant but also timely since the majority of the existing studies were conducted in the context of developed country-contexts [7,5]. Thus the current study is developed in this direction. It aims, on one hand, to underline a set of motives of consumers' willingness to buy organic food. The literature review enabled us to mainly focus on environmental concern, health consciousness and knowledge of organic food. On other hand, it aims to examine the moderating role of consumer awareness of organic food. The hypotheses were tested in Tunisia as an emerging market where the organic consumption is still in nascent stage [15]. This study is considered among the earliest of its kind to test some motives of willingness to buy organic food in developing market. Moreover, it is among the rare studies which examine the level of consumer awareness of organic food and its role in conducting the willingness to buy. For policymakers and retailers, the present study provides managerial insights in order to fine-tune their marketing strategies for organic food products and boost the organic consumption.

The remainder of this paper is structured as follows: The next section presents the literature review. The third section describes the research materials and methods. The fourth section exposes the results. The Fifth section discusses the findings while last section draws conclusion that includes implications as well as limitations.

2. LITERATURE REVIEW

2.1 Motives of Willingness to Buy Organic Food

The willingness to buy (WTB) is a concept in consumer preferences. In the area of marketing,

WTB is effective and appropriate to predict and explain consumers purchase decisions or behavior [16]. This concept is a surrogate of purchase intention. It consists of the customer's likelihood to shop, purchase products, and recommend the store to others. WTB is a crucial indicator for actual purchase behavior since it expresses the effort expended by consumer toward a concrete behavior [17]. Among the multiple motives to purchase organic products, this study focused on the following:

Environmental concern is perceived as an effective attribute that can express a person's worries, compassion, likes and dislikes about the environment [18,9]. According to Ramly et al., [19], environmental concern has to be perceived as an evaluation of, or an attitude towards the environment. Based on this, environmental concern plays a significant role in consumer behavior, as long as consumers consider purchasing organic food products as an environment-friendly behavior [12]. It is also considered a crucial predictor of purchase behavior. In the organic industry, it has been found that consumers with a high awareness of environmental issues are more likely to consume organic food [20]. Notarnicola et al. [9] stated that consumers prefer products which are less harmful to the environment. In a similar vein, Yadav and Pathak [21], Kai and Haokai [22] and Pagiaslis and Krontalis [23] revealed that environmental concern is a major motivator behind the purchase intention of eco-friendly products (e.g. organic products). It can consequently stimulate a purchase behavior. Furthermore, Smith and Paladino [12] found that the rise of organic food consumption is related to a higher concern for environmental issues within societies.

Health consciousness is defined as the degree to which concern about health is involved in a person's daily activities [24]. It is also the assessment of consumer readiness to undertake health actions. These authors considered that consumers have become deeply aware and concerned about their well-being and the quality of their life, and much interested in avoiding unhealthy behavior through their engagement in organic food consumption. Other researchers [25,26,27] stated that the organic product is a safe product compared to conventionally-grown food, as it is produced in an environmentally friendly way. This product is also wholesome and nutritious, and of high quality; it is therefore attractive to people who are concerned about their health [28]. Westhoek et al. [24] stated that

the consumption of organic food is regarded as an investment in the individual's health. Therefore, there is a consistent correlation between health and willingness to buy organic food [29].

Consumers' knowledge of organic food (KOF): According to Singh and Verma, [4], consumers need to know the product they are purchasing in order to satisfy their needs. This knowledge is also crucial for the consumer decision-making process [30]. Moorman et al., [31] stated, "*subjective knowledge plays an important role in the product choice that the consumers make; as they are supposed to behave in accordance to the knowledge they hold*". Therefore, the consumer's intention to purchase a product depends on his level of knowledge [6]. Hence, the more the consumer knows about the product, the more likely he is to purchase it [29]. In the organic industry, studies showed that consumers have a basic understanding of the term '*organic*'. They consider the organic product as free from chemical inputs, pesticides, growth regulators and livestock food additives [13]. For example, through a survey conducted in the UK, Hutchins and Greenhalgh [32] stated that for the respondents, "*organic' food products are products grown naturally and are free from chemicals and growth hormones*". Singh and Verma [4] showed that consumers in developed countries, especially in Europe and North America, have a high level of knowledge about organic food compared to people elsewhere in the world. Therefore, the organic food products is more consumed in these countries [8].

With that said, the relationships between environmental concern, health consciousness, knowledge and organic food WTB are hypothesized as follows:

- H1.** Environmental concern significantly influences on consumers' willingness to buy organic food.
- H2.** Health consciousness significantly influences on consumers' willingness to buy organic food.
- H3.** Knowledge of organic food significantly influences on consumers' buy willingness to purchase.

2.2 The Moderating Role of Consumer Awareness towards Organic Food (AW)

According to Muhammad et al., [33], consumer awareness towards organic products refers to a

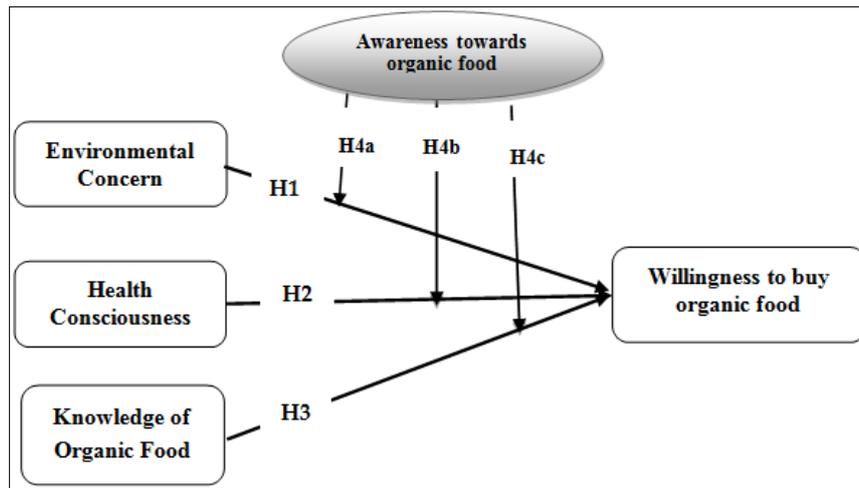


Fig. 1. Conceptual model of the research

recognition and exploration of the attributes and characteristics that distinguish them from their conventional counterparts (freshness, safety, certification, labeling, nutritious, etc.). However, “several consumers are aware of the term ‘organic’ but most unaware of organic practices” [34]. Dunlap and Jones [35] asserted that the more aware the consumer is of problems regarding the environment, the more willing he becomes to purchase organic food products. This is because the latter are considered as environment friendly, healthy and pure in comparison to conventional ones [17]. Kapuge [7] found that health consciousness and awareness constitute two major factors that exert a significant influence on the willingness to buy organic food. In other words, the deeper the consumer’s awareness of the benefits of organic food for his health, the greater his intention to consume organically. Asif et al., [8] examined the moderating role of awareness in developing markets (Iranian, Turkish, Pakistani) and found that it positively moderates the willingness to purchase organic food. Following this literature review, we hypothesize that:

H4. Consumer awareness towards organic food positively moderates the relationship between willingness to purchase organic food and its predictors.

H4a. Consumer awareness towards organic food positively moderates the relationship between environmental concern and WTB.

H4b. Consumer awareness towards organic food positively moderates the relationship between health consciousness and WTB.

H4c. Consumer awareness towards organic food positively moderates the relationship between knowledge of organic food and WTB.

The aforementioned hypotheses are graphically represented via the conceptual model (Fig. 1).

3. MATERIALS AND METHODS

In order to check the different hypotheses of the conceptual model, a survey was conducted from 16 June to 31 August of 2019 in several supermarkets and organic grocery shops in city of Tunis (the Capital) in Tunisia. A self-administrated questionnaire was employed using a convenience sample, with some dispersion in terms of demographic characteristics (gender, age, education, monthly income). It is important to mention that for some respondents, it was necessarily to translate the questions to French or Arabic for their better understanding. The questionnaires were distributed among the target population via group administration approach. This is in order to ensure a prompt data collection while complying with important response rate [36]. During the survey period, although 512 customers agreed to participate in this study, only 480 responses were considered. The others were eliminated because they were inappropriate (all answers were identical) or incomplete. The demographic properties of the sample are presented in Table 1.

The survey instruments were borrowed from previous research works and adapted for this study. Health consciousness (3 items) was

designed based on measurement scale of Tarkiainen and Sundqvist [37]. Environmental concern (4 items) was measured based on Roberts and Bacon [38]. Knowledge for organic food (3 items) was designed based on Gracia and Magistris [39]. Awareness towards organic food (2 items) was designed based on the scale of Asif et al., [8]. The variable Willingness to Buy was measured using the scale of Dodds et al. [40] and Sweeney et al. [41]. These measurement items are provided in Table 2. All indicators

in the questionnaire were rated according to the 5-point Likert type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The Structural Equation Modeling method (SEM) with LISREL software were used to analyze data and test the research hypotheses. This study conducted to proceed with a two-stage analysis method [42]. First, the measurement model analysis was used to test the validity and reliability of the constructs. Second, the structural model was tested for the model fit and hypotheses testing.

Table 1. Demographic profile of respondents

Variables/criteria	N	%	Variables/criteria	N	%
Gender			Education		
Female	356	74.16	Elementary and middle school	68	14.17
Male	124	25.84	High school	205	42.70
Marital Status			Vocational school	56	11.67
Married	352	73.33	University	112	23.34
Single	128	26.67	postgraduate	39	8.12
Age			Monthly Income (TD)*		
Under 18	26	5.42	Low income (Less than 700)	62	12.91
18-35	304	63.33	Medium income (from 701 to 1300)	288	60
36-60	138	28.75	High income (from 1301 to 2000)	102	21.25
Older than 60	12	2.50	Very high income (more than 2001)	28	5.84

N= 480

Notes. * TD= Tunisian Dinar; 1TD= 0.34 US \$ in August 2019. National average wage= 350 US \$.

Table 2. Measurement model assessment

Constructs	Factor loading
Environmental Concern (EC): AVE= 0.621; CR=0.888; Cronbach's α=0.798	
EC1: The balance of nature is very delicate and can be easily upset.	0.733
EC2: Human beings are severely abusing the environment.	0.761
EC3: Humans must maintain the balance with nature in order to survive.	0.803
EC4: Human interferences with nature often produce disastrous consequences.	0.783
Health consciousness (HC): AVE= 0.733; CR=0.850; Cronbach's α=0.833	
HC1: I chose food carefully to ensure the good health.	0.811
HC2: I consider myself as health conscious consumer.	0.821
HC3: I think often about health related issues.	0.780
Knowledge of organic foods (KOF)- AVE= 0.766; CR=0.798; Cronbach's α=0.741	
KOF1: I know the food is organic or non-organic	0.734
KOF2: I know the process of organic foods	0.781
KOF3: I know that organic foods are safer to eat	0.785
Willingness to Buy (WTB)- AVE= 0.645; CR=0.833; Cronbach's α=0.866	
WTB1: I consider buying organic foods.	0.736
WTB2: I will purchase organic foods.	0.783
WTB3: There is a strong likelihood that I will buy organic foods	0.807
Consumer awareness toward organic food (PCE)- AVE= 0.693; CR=0.876; Cronbach's α=0.812	
AW1: I know what an organic food	0.864
AW2: I familiar with the term organic food	0.802

$\chi^2/df= 2.66$; $GFI=0.913$; $AGFI=0.910$; $CFI=0.970$; $IFI= 0.981$; $TLI= 0.971$; $RMSEA= 0.041$

4. RESULTS

Measurement model fit indexes were tested. The findings showed acceptable absolute, incremental and parsimonious indexes. Therefore, the model fits the data well.

Convergent and discriminate validity were tested according to the SEM analyses. CR (composite reliability), factor loadings and Cronach's alpha to assess internal consistency among indicators for each construct. Average Variance Extracted (AVE) was also assessed to check convergent validity.

As depicted in the Table 2, the factor loadings are varying from 0.733 to 0.864. Cronach's alpha coefficients range from 0.741 and 0.866. Moreover, the findings show that all CR were above 0.7 (range from 0.798 to 0.888) that another condition to confirm the internal consistency of a construct [43]. Finally, all AVE values range from 0.621 to 0.766. So they are greater than 0.55 [42]. These findings support the convergent validity of every construct.

For the discriminate validity, with regards to Fornell and Larker [44], it has to compare the AVEs' square root with correlations between constructs through triangular matrix. As shown in below Table 3, this condition is confirmed for all constructs. This shows good discriminate validity for every construct of the conceptual model.

The conceptual model was tested for goodness of fit indices. Fitness tests were implemented by evaluating the degree of consistency between the internal structure and the actual data (Chen and Deng, 2016). By using the maximum likelihood estimation technique, the main fitness indicators are as follow: $\chi^2/df = 1.283$; GFI=0.930; AGFI=0.901; CFI=0.982; IFI= 0.983; TLI= 0.958; RMSEA= 0.032.

In the light of these results, the causality model presents a good fit. The different values reached show that the absolute, incremental and parsimonious indexes check the sufficient thresholds in a significant way.

The direct relationships between constructs can be determined by examining their path coefficients and related t statistics. The path coefficients, presented in Table 4, indicate that environmental concern did not have any significant effect ($\beta = 0.110$, t-value= 1.345; $p > 0.05$) on consumer WTB, so *H1 is not supported*.

For the construct health consciousness, it had a significant positive effect on WTB ($\beta = 0.589$, t-value= 12.674; $p < 0.01$). So, *H2 is supported*. For the construct knowledge of organic food, it had also a positive and significant effect WTB ($\beta = 0.256$, t-value= 2.333, $p < 0.05$), Therefore, *H3 is supported*. These results are summarized in the Table 4.

The moderating influences were examined based on multi-group structural equation modeling [45]. This leads to check the measurement invariance as well as structural invariance. In order to understand the moderating influence of AW, the sample is divided into two sub-samples of high awareness (n= 242) and low awareness (n=238) by employing a median split procedure [46]. For the unconstrained structural multi-group fit was tested to establish causality: $\chi^2 = 572.563$; df= 267; $p = 0.000$; RMSEA= 0.0238; CFI= 0.91; TLI= 0.933; IFI= 0.92. This means that all the values are within the recommended tolerable levels. Chi-square test of difference ($\Delta\chi^2$) was examined to compare the fully constrained and unconstrained model across high and low AW.

The influence of awareness on the linkage EC/WTB did not show any significant variance ($\Delta\chi^2 = 1.736$; $p > 0.05$) across higher awareness group ($\beta = 0.288$, t-value= 1.673; $p > 0.05$) and lower awareness group ($\beta = 0.118$, t-value= 1.137; $p > 0.05$). This allows rejecting the hypothesis (H4a). The influence of awareness on HC/WTB varies significantly ($\Delta\chi^2 = 2.666$; $\Delta df = 1$; $p < 0.005$) across higher awareness group ($\beta = 0.256$, t-value= 3.124; $p < 0.001$) and lower awareness group ($\beta = 0.166$, t-value= 2.716; $p < 0.005$) indicated a significant positive moderation of AW on HC/ WTB. This allows supporting the hypothesis (H4b). The influence of awareness on the linkage KOF/WTB varies significantly ($\Delta\chi^2 = 2.716$; $\Delta df = 1$; $p < 0.005$) across higher awareness group ($\beta = 0.282$, t-value= 3.666; $p < 0.001$) and lower awareness group ($\beta = 0.148$, t-value= 2.566; $p < 0.005$) indicated a significant positive moderation of AW on the linkage KOF/WTB. This allows supporting the last hypothesis (H4c). The details about AW moderation are given in Table 5.

5. DISCUSSION

This paper focused on testing the key drivers of willingness to buy organic food, under the moderating role of consumer awareness. A conceptual model was proposed and hypotheses were tested in the context of developing market.

Table 3. Discriminate validity (Intercorrelations of constructs)

Constructs	HC	EC	KOF	AW	WTB
AVE	0.733	0.621	0.766	0.693	0.645
HC	0.856				
EC	0.664	0.788			
KOF	0.685	0.673	0.875		
AW	0.661	0.662	0.632	0.832	
WTB	0.574	0.561	0.662	0.566	0.803

Table 4. Summary of the structural model path coefficients

Hypotheses paths	Standardized estimate (β)	Standard error	t-value	Results
H1: EC → WTB	0.110	0.0434	1.345	Not supported
H2: HC → WTB	0.589	0.0072	12.674*	Supported
H3: KOF → WTB	0.256	0.0384	2.333**	Supported

Note: * = $p < 0.01$; ** = $p < 0.05$. EC= Environmental concern; HC= health consciousness; KOW= knowledge for organic food; AW= awareness; WTB= Willingness to Buy

Table 5. Moderating role of awareness (AW)

Hypotheses	High AW		Low AW		Δx^2	Moderation
	Estimate	t-value	Estimate	t-value		
H4a: EC / WTB	.288	1.673	.118	1.137	1.736	No
H4b: HC / WTB	.256	3.124**	.166	2.716***	2.666***	Yes
H4c: KOF / WTB	.282	3.666**	.148	2.566**	2.716**	Yes

Variance explained (%) for GPI= 72.16

Notes: * $p < 0.001$; ** $p < 0.005$. EC= Environmental concern; HC= health consciousness; KOW= knowledge for organic food; AW= awareness; WTB= Willingness To Buy

Environmental concern was found to be non-significant in predicting the WTB organic food. This is similar with the findings of Magnusson et al., [47], Yadav and Pathak [21] and Asif et al., [8] who considered that environmental concern, as altruistic attitude, does not lead to intention to purchase organic food. However, this deduction contradicts the finding of Smith and Paladino [12], whose study was conducted in the context of a developed nation. This implies a weak altruistic behavior on the part of consumers in developing nations compared to those in developed ones. In addition, the results of this study revealed that awareness does not have any significant moderating effect on the relationship between environmental concern and WTB. This implies that regardless of their degree of awareness, the environment is not yet a priority for consumers in Tunisia while taking the decision to buy organic food products [48]. Health consciousness was found to be the best motivator of willingness to buy organic food. This statement is consistent with the findings of Asif et al., [8], Yadav and Pathak, [21] and Kapuge [7]. Furthermore, the relationship between health consciousness and WTB is positively moderated

by consumer awareness. This implies that Tunisian consumers are conscious of their health-related issues [48] which they take into consideration while making the decision to purchase organic food [15]. Therefore, the health benefits of organic food should be highlighted by retail managers in order to attract the consumer and push for organic food consumption. Knowledge of organic food also turned out to be a significant predictor of WTB organic food. This implies that the more the consumer knows about organic products, the more aware he is of their value and benefits in comparison to conventional ones, and the more likely he is to acquire such products. These findings are similar to those of Garcia and de Magistris [39].

6. CONCLUSION

The present study provides insights into motives of willingness to buy organic food in developing countries under the moderating role of consumer awareness. The findings showed that health consciousness and knowledge of organic food played significant role to stimulate the willingness to buy organic food. However, environmental

concern did not show significant role. This study also examined the moderating role of awareness. The findings of a survey conducted in Tunisia showed that, on one hand, consumers in this country are aware about the benefits of organic food and its specificities. On other hand, this awareness reinforce the role of health consciousness and the knowledge, useful to stimulate the willingness to buy. However, it does not have significant role on environmental concern.

Theoretically, this research provides clarifications on several levels.

First, as organic consumption is still in nascent stage in developing countries [8,48,21] conducting a research work in this direction does have much added value to provide deeper understanding of consumer behavior in these countries. The findings of this research work showed that the level of awareness influences mainly the egoistic factors (health consciousness and knowledge). As for altruistic factor (environmental concern), it does not constitute a prior motivator for the consumption of organic food products in developing countries, independently of the level of consumer awareness. This study is considered among the earliest of its kind to test some motives of willingness to buy organic food in developing market. Moreover, the current study is a pioneer in evaluating the moderating role of awareness of organic food in the relationship between the willingness to buy and its predictors.

Empirically, this study does have meaningful implications for retailers and policymakers.

First, as showed through the findings of this study, environmental concern, as altruistic value, does not have significant impact on willingness to buy organic food. This is similar with the studies of Yadav and Pathak, [21], Asif et al., [8] and Maghusson et al., [47] who stated that consumer behavior in a developing country is mainly driven by egoistic factors when making the decision to purchase organic food products. Therefore, it becomes crucial for managers in this sector to focus on the benefits of organic food for health and well-being when communicating the products. Showing that organic food is safer, healthier, nutritious, pure and wholesome should be the core of the managers' communication strategy. In addition, valuable information about the product and its production process should be provided on the packaging as well when

presenting the product in grocery shops and supermarkets.

Second, in order to improve organic food knowledge which has a significant impact on the willingness to buy, products should be close to the consumers anywhere they are. Therefore, retailers should diversify their channels of distribution. Online stores offering organic products may be a good way to make these products more available, especially that organic products sale points are often concentrated in the main cities in some developing countries, like Tunisia.

Third, since awareness was shown to play a positive significant moderating role between the willingness to buy and its drivers, marketers should make further efforts to enhance consumer awareness of organic products. These efforts should involve producers, retailers and policymakers in order to involve the whole population in organic consumption. For this, national awareness campaigns about the benefits of organic food consumption for health and the environment should be conducted. These campaigns should be held in schools, universities, public spaces and public transport stations, so that consuming organic food becomes an education, a daily behavior and a culture involving the whole population.

The findings of this study could not be interpreted without taking its limitations into account.

First, this study involved only 480 Tunisian consumers, which is a relatively small sample that does not represent the entire population. In addition, it used convenience sampling during the survey, collecting data from only one city (the Capital, Tunis). This prevents the generalization of the findings. Second, in order to simplify the survey and widen the sample, the study has considered organic food products in general. However, the literature stated that '*consumption of organic food varied among various products such as organic meat, organic milk, organic fruits which may limit the generalization of the results*' [21]. Future research works may study consumer behavior towards a special kind of organic food products and compare the findings with those of the present study. Third, one of the major limitations of this study is the adaptation of measurement scales that are originally created and tested in developed markets. Future research woks should develop reliable and validated measurement scales for emerging

countries, in order to investigate the different parameters [8].

CONSENT

As per international standard, Participants' written and informed consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Author has declared that no competing interests exist.

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