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Factors that Affect the Intention of Consumers to Buy Food Products Online

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Abstract

Internet purchases are no longer a new form of purchase, but they are successfully complementing conventional product sales channels. This study aims to understand factors, such as: product performance risk, distance, trust and risk reduction that affect consumer's intention to buy food products online. The following data was collected through a structured questionnaire. Confirmatory Factor Analysis was used to develop measures and Structural Equation Modelling was used to test hypotheses. The results show that trust and risk reduction have a positive effect on the consumers' intention to buy food products online. Product performance risk has a negative effect on the intention to buy food products online, meanwhile distance does not show any significance on their intention to buy food products online. These findings provide significant insights into what limits consumers to consider the online channel as a complementary alternative of shopping for food products.

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Introduction

The development of online channels has been elaborated for most of food products, but they are still at the bottom of the list in consumer preferences for online purchases. Many scholars have pointed out the slower adaptation of this channel for food products (Olumekor *et al.*, 2024). Focusing on evaluating the factors that demotivate intention of consumers to buy food products online is an issue that attracts research interest.

Due to the increase in internet usage and its invasiveness and impact, the number of people shopping online food products has proliferated (Nwaizugbo & Ifeanyichukwu, 2016; Redman, 2020; Chang & Meyerhoefer, 2021). Despite the growing popularity of online sales, the online distribution of brick-and-mortar groceries is still very high (Seidel, 2021). The coexistence of both forms of sales deserves attention to identify the factors that drive the choice of one channel over another.

Purchases of online food products in terms of factor's impact, have identified components such as the access they can create for elderly or disabled consumers (Kvalsvik, 2022), the promotion of healthy eating habits after the presence of the consumer in the store created impulse purchases from contact with the product (Pitts *et al.*, 2018), food access faced by low-income families, distance from physical stores (Trude *et al.*, 2022), the impact of income and prices on the frequency of online food purchases (Olumekor *et al.*, 2024). A second group of researchers has studied consumer's factors such as the impact of social or subjective norms, trust and perceived risk, previous shopping experiences, attitude, perceived usefulness (Gruntkowski & Martinez, 2022; Frank & Peschel, 2020). From these results, it can be noted that there were some inconsistencies in the results.

Several authors have studied online behavior for food products from the perspective of consumer motivation (Geuens *et al.*, 2003; Roberts *et al.*, 2003; Rohm & Swaminathan, 2004; Chen *et al.*, 2020; Pena-García *et al.*, 2020). Most studies list the factors that encourage consumers buying online food products over those that inhibit their behavior toward online channels. Harris *et al.* (2017), emphasize that the disadvantages of a channel can motivate the development or maintenance of consumer behavior over another distribution channel.

The aim of this study is to identify the factors which influence the consumer not to buy food products online. Selected factors are identified as: product performance risk as the inability to physically control the product attributes, risk reduction as the efforts of sellers and buyers to increase the security of online purchases, distance as distance perception between the consumer's residence and the place of purchase, and trust as the buyer's trustworthiness in the seller. The data was collected in Tirana, the capital

of Albania, with the purpose of identifying consumer trends for online purchases of food products. The study applied Structural Equation Modeling (SEM) to measure the relationship between factors and hypothesis testing (Mehmeti *et al*., 2021).

Regarding e-commerce, the Albanian market is expected to reach 1.18 million users by 2027, with user penetration up to 42.1% by 2027 (Statista, 2023). According to Lone *et al*. (2022), 38% of the Albanian population has experience in online shopping mainly in clothes and electronic products. Meanwhile, in terms of food products, the use of the online channel for this product category still remains negligible. According to Luga *et al*. (2022), the purchase of food products online in Albania is very low. Only 8.6% of the population has had experience of online shopping for food products which was driven by the COVID-19 pandemic lockdown.

This paper attempts to use the insights from the Theory of Reasoned Action (TRA), known as the Theory of Planned Behavior (TPB) to identify the impact of the factors selected as inhibitors of online shopping. The use of TPB is a successfully applied in the evaluation of consumer behavior even in the case of online shopping. (Bauerová *et al*., 2023).

The novelty of this study, in the theoretical aspect, is related to the inclusion of the distance factor in the theoretical framework. In the authors' knowledge, distance is an understudied factor and this paper aims to bring some insights about its impact on online channel adoption. Distance is analyzed as a perception and accessibility of physical markets from the consumer's residence. The short distance and easy accessibility affects the consumer perception of online shopping. Some authors (Sueland & Polak, 2018; Wieland, 2021) have studied the influence of the location of the stores in the perspective of using multiple channels simultaneously or using different purchase alternatives within the same purchase process such as "buy online pick up in store" known as "click and collect".

Another new contribution is the inclusion of product performance risk. From the literature the focus on the perception of risk is studied as a general concept, not paying attention to the perception of risk for the performance of the product itself primarily in the case of food products where the physical characteristics of the product are predominant in the consumer choice.

Also, this paper contributes to filling an existing gap in the study of online food purchases, and especially in online consumer behavior in developing countries.

In situations where 27 supermarkets in Tirana offers food products through multiple channels (Luga *et al*., 2022), this paper will provide knowledge for food retailers on investments in new marketing channels such as the online one, improving their planning marketing strategies in relation to the customer's satisfaction.

This paper is structured as follows. Section one reviews the literature on factors that influence consumer's intention to buy food products online, also in this section the study hypotheses are presented. Section two describes the materials and methods, while section three provides the results and discussion of this study. The paper ends with conclusion in section four.

1. Literature review on factors that influence the intention to buy food products online

From the perspective of consumer behavior, the literature offers different views on the evaluation of consumer intention toward online shopping for products in general and food products in particular. Although in the literature we find references to motivating factors (convenience in various types such as access, search, evaluation, transaction and possession convenience, time saving, no travel cost) (Farag *et al.*, 2007; Shi *et al.*, 2019; Hanus, 2016), however, some factors that prevent the consumer from adopting such a form of purchasing products can still be observed. According to Font-i-Furnols & Guerrero (2014) the consumer experiences uncertainty on how to act or behave from online shopping.

Some insights from TPB and the factors that affect online consumer behavior toward food products

To analyze the factors that influence the intention of the consumer to buy food products online we rely on some insights from the TPB. TPB, started as the TRA in 1980, claims that intentions are a fundamental antecedent of actual behavior (Ajzen, 1991). TPB has been used constantly to adopt attitude-behavior relationship models to explain online purchases through consumer attitudes, subjective norms and beliefs (Bauerová *et al.*, 2023). In this regard we propose to analyze product performance risk, risk reduction, distance and trust as factors that prevent consumer intention to buy food products online as consumer beliefs and attitudes. The construct between consumer behavior and buying intention is important for consumer research (Ghalandari & Norouzi, 2012). Regarding food products, purchase intention can be affected by several elements including product distribution channels (Curvelo *et al.*, 2018).

There is a uniformity of opinion about the factors that prevent online shopping for food products. Some authors focus on the analysis of the types of factors in a holistic approach such as Sivanesan *et al.*, (2017) who lists them as trust, reputation and services provided from the seller, consumer

experience, and lack of product information. Other authors analyze certain factors in detail. Gomes & Lopes (2022) reach the conclusion that consumers do not easily adapt to online shopping because they want to choose their own food to get the best quality and freshness, they want to experience satisfaction from their shopping experience in brick-and-mortar shops (Gomes & Lopes, 2022). As a matter of lifestyle many consumers see shopping in stores as an opportunity to spend time together (Hanus, 2016). Most consumers are not ready to buy food products online due to the inability to physically check the quality of the products especially regarding fresh food products (Sharma, 2015). They want to avoid the risk such as product risk, time risk, secure information risk and seller fraud risk (Ngyen *et al.*, 2021).

This paper is focused on the evaluation of consumer intention towards online purchases of food products under the influence of four factors such as: product performance risk, risk reduction, distance and trust.

Product performance risk

Willett (2016) defines risk as the uncertainty of loss, or risk that denotes the possibility of loss. Consumer behavior and intention to shop online depends primarily on the perceived features of online shopping and on the perceived risk associated with online purchase (Machado, 2006). According to Li *et al.* (2020), risk perception is an essential factor that affects how individuals assess risk, make decisions and their behavior. The degree of risk perception affects the intention to buy food products online (Ngyen *et al.*, 2021) and depends on the level of consumer involvement in online buying behavior. This higher involvement will result in a greater awareness of possible negative consequences with an impact on consumer buying online products (Mehmeti & Luga, 2021).

There are several papers related to the significant impact of perceived risk and more specifically product performance risk on consumers' online shopping attitudes, which negatively affect their purchasing behavior (Zhang & Yu, 2020; Nguyen *et al.*, 2021). Perceived risk is considered in a subjective prediction of consumer behavior (Peter & Ryan, 1976), while it is affirmed that when the consumer experiences a high level of risk perception, they tend to avoid a purchase (Mitchell, 1995).

Among all types of risk, the risk of product performance mostly affects the consumer's perception in purchasing the product online (Kim & Forsythe, 2008; Kim & Lennon, 2008) and in online environment it appears to be more present due to the fear that the product does not function or perform as expected (Almousa, 2011), or because the lack of accurate product examination (Cases, 2002; Tan, 1999). For food products,

the examination relies on the sensory characteristics such as appearance, freshness, taste, color, smell. Prescott *et al.* (2002), pointed out that food safety and health, convenience, sensory characteristics, quality, price are important determinants affecting consumer purchase of food. This leads to the fact that sensorial characteristics are essential motivating factors that drive consumers towards purchasing and consuming food products and they play a pivotal role in consumer perception, purchase decision, consumption and satisfaction towards foods (Wang *et al.*, 2015; Braghieri *et al.*, 2016; Tan *et al.*, 2017; Imtiyaz *et al.*, 2021). Most consumers are not willing to buy food products online because they are not able to physically check the quality of products, especially fresh products (Sam & Sharma, 2015) and some consumers prefer to interact directly with products and people while shopping (Van Droogenbroeck & Van Hove, 2017). Based on these findings, we propose the following hypothesis:

H1: Product performance risk negatively affect the consumers' intention to buy food products online.

Risk Reduction

Due to the risk perception, consumers rely on risk reduction strategies (Chu *et al.*, 2014). Fear of taking risks by users will increase their expectations of negative results and reducing intentions to behave. Consumers develop beliefs toward risk reduction strategies and purchase intention (Chu *et al.*, 2014). It was analyzed that beliefs are demonstrated as self-efficacy and response efficacy respectively as one's confidence to perform a recommended behavior and behavior's perceived value (Thrasher *et al.*, 2016). While efficacy belief is powerful in predicting behavior (Hichang, 2010).

According to Vos (2014) there are several risk mitigation strategies which include access control policies, physical security and remote access policies and methodologies.

Sensitivity to risk perception has led early in the literature to find that consumers may gather information from formal and informal sources, use brand image/reputation or price as a quality guide, or shop only in stores with a good image (Akaah & Korgaonkar, 1988). This was also supported as well by Mitchell & McGolddrick (1996) that assume that the risk reduction strategies include consulting with family or friends, past experiences, warranty, price information, consulting a salesperson, buying known brands, and obtaining information from advertisements.

Marketers have used tools such as money-back guarantees, warranties, and free trials to influence consumers' risk perception (Schiffman & Kanuk,

1987) and the consumer tries to find instruments to avoid the risk and create more security (Imtiyaz *et al.*, 2021).

Roselius (1971) identifies risk reduction strategies focusing in money- back guarantees, the image of brand or store, self-experience, word of mouth or relying on expensive models. The opinion of other consumers, a retailer with an established reputation, a well-established brand name, and a money-back guarantee is effective in reducing risk perception of consumers in online shopping (Tan, 1999).

The literature suggests risk reduction strategies related to purchasing products online, not specifically focused on food products. Several authors have investigated consumer attitudes towards food fraud (Liu & Niyongira, 2017; Zhu *et al.*, 2017; Kendall *et al.*, 2019) as the concept of the deliberate changes of food ingredients or its packaging for economic benefits (Spink & Moyer, 2011). Although Kendall *et al.*, (2019) studied ways to mitigate the perceived risk of food fraud, but they did not consider the online channels of purchasing the product.

In online shopping literature the concept of sensory marketing, which is defined as: "marketing that engages the senses of consumers and affects their perception, judgment and behavior" Krishna (2012), affects the attitude and purchasing behavior of consumers towards products (Hamacher & Buchkremer, 2022). According to Hamacher (2022) companies in the food industry should engage in the application of online sensory marketing index to increase the multisensory engagement of consumers from food product presentation websites on the internet. This would improve consumer perception for food products and providing a solution to the consumer's multisensory appeal. Based on these findings, we propose the following hypothesis:

H2: Risk reduction alternatives positively affect the intention of consumers to buy food products online.

Distance

Another factor that will predict consumer intention to buy product online is the distance, described as spatial shopping behavior, part of retail geography that attempts to analyze the drivers of consumer store choice (Timmermans, 1993). These theories try to explain consumer choice which develops favorable attitudes for short distances while long distances tend to be underestimated by consumers (Timmermans, 1993; Marjanen, 2001; Wieland, 2021). The distance between places is subjective and create perception depending on the degree of familiarity with the points of origin and destination. The development of a spatial image is a person's model

of objective reality (Marjanen, 2001). The physical surroundings (distance to store, access to grocery websites, crowdedness, weather, and in-store environment) are divided into geographical and institutional locations, in which the consumer choice occurs (Kvalsvik, 2022).

The access to food is an important factor that influences consumer behavior towards food, food safety and diversity of consumer choice (Kvalsvik, 2022). Food access refers to the location of the facility from which the consumer obtains food (e.g., food stores) and the ease of getting to that location (Caspi *et al*., 2012).

From 1970, geographical studies of shopping products questioned the classical theory of the central place. The theory states that shoppers will visit the nearest retail center that provides them with the goods or services. Shopping is indeed a complex process which provides much wider assortments of products. The consumer can buy in local stores or in malls. The mall attracts consumers from a large distance. This behavior that seems to be irrational expresses the individual's need for uniqueness (Marjanen, 2001). The low number and small concentration of stores and supermarkets increase the time spent by consumers to secure food products.

The traditional theory of retail location has not been included in the analysis the development of online purchases (Reigadinha *et al*., 2017). Online shopping offers the customer many options for choosing products and services, as well as the opportunity to compare them with other sellers (Sivanesan, 2017). It has been found that the likelihood of consumers engaging in online shopping is related to travel effort to reach physical stores (the less effort, the more physical stores are preferred) and delivery effort (Wieland, 2021).

It also seems that consumers who work and those who are at home spend the same amount of time, but change in the frequency of purchase and the possibility of having fresh products (Hamrick & Hopkins, 2012). The impact of residential environment and shop accessibility varies for the different stages of the internet shopping process and for the type of product (Farag *et al*., 2006).

According to Kvalsvik (2022) the distance from the nearest store triggers the consumer towards choosing online grocery shopping, but without having any experiences yet. Increased distance from stores means that consumers are more likely to choose online food shopping.

The association of spatial accessibility assessment with the low tendency to buy food products online has been confirmed by (Chocarro *et al*., 2013; Clarke *et al*., 2015; Zhai *et al*., 2017; Zhen *et al*., 2018). Schmid & Axhausen (2019) also showed the relationship between travel time and the likelihood of making a purchase in-store and the time of order arrival with online shopping. These authors also take into consideration the simultaneous

influence of factors such as the risks of online shopping, which influenced the development of a subjective attitude of the consumer. Based on these findings, we propose the following hypothesis:

H3: The long distance of food stores from the place of residence positively affect the intention of consumers to buy food products online.

Trust

In the context of online shopping, trust is seen as a factor that directly influences and contributes to the formation of consumer attitudes, because the consumer is unable to protect himself from the power of the seller in the online space (Gefen, 2003). Online trust is "an attitude of confident expectation in an online risk situation that one's vulnerabilities will not be exploited." (Stewart, 1999). Trust in general but also trust in online transactions, implying the degree to which one can trust the promises made by others, encourages consumers to use the seller's value as a precursor to their future actions to create trust (Tang, 2021). Trust can be conceptualized as the degree to which one can trust and rely on promises made by others (De Fine Licht, & Brülde, 2021). In this way, it can be conceptualized as the attitude to which the extent to which the individual creates a favorable or unfavorable evaluation of the behavior of interest affects the propensity to buy online (Tang, 2021).

Early in literature it was underlined that the consumer creates trust in the form of feeling or expectation about the intention, integrity or competence of the trading partner (Moorman *et al*., 1992). It also reinforced by Li *et al*., (2021) who stated that the trust in actors of the food chain is influenced by the beliefs of consumers about the trustworthily of these actors.

D'Alessandro *et al*. (2012), interpreted trust as the buyer's confidence to buy online, buyers' expectations of the reliability and integrity of the seller's promises based on online sellers' guarantees. According to Karpik (2010) the problem that the consumer faces in relation to trust is not only against the seller but also the quality of the product offered. The risk of seller fraud worries buyers about the trustworthiness of online sellers. This is related to the fact that product information does not reflect its actual quality and the difficulty of finding a place to resolve disputes that arise during online purchases. Salespeople may provide false promotional information, or will not fulfill their customer service promises (McCorkle, 1990).

Kendall *et al*. (2019) and Psomiadis (2021) argue that consumers perceive food fraud as a risk to food safety. The risk of food safety and fraud depends in part on whether purchasing and quality control mechanisms are controlled by suppliers. Without touching the product, people hesitate to buy from

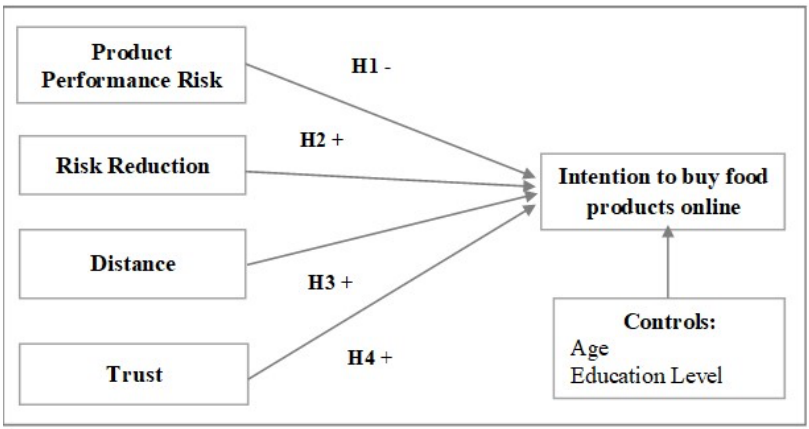
online stores (Daroch *et al*., 2020) which increases the role of trust in the relationship between the consumer and the sellers.

Grocery shoppers prefer to visit stores in person due to distrust in online channels (Gomes & Lopes, 2022). Lack of trust is also related to the fact that consumers are reluctant to provide their personal data, as they believe that online shopping is riskier than traditional shopping. Based on these findings, we propose the following hypothesis:

H4: Trust in the seller positively affect the intention of consumers to buy food products online.

The proposed conceptual framework with research hypotheses directions are presented in Figure 1. Also, in the model two control variables were introduced: age and education level.

Figure 1 - Conceptual framework of the study



2. Materials and methods

Data Collection and sample characteristics

Data was collected during 2023 in Tirana, the capital city of Albania, via a questionnaire with close-ended questions. Tirana was selected because it represents the region with the largest and most heterogeneous population in terms of age, education, lifestyle, and income (Luga *et al*., 2022).

The questionnaire was divided into four sections. The first section was designed to collect general information of consumers such as: socio-

demographic characteristics, use of the internet, time spent on the internet, social networks used, self-assessment of skills for using information technology etc. The second section of the questionnaire was designed to gather data regarding the purchasing pattern for food products, especially the place of purchase, the frequency and time spent to reach the store. The third part of the questionnaire was framed to gather information about consumers' online shopping experience. The questions focused on discovering the products purchased most often through online channels and the reason for not using online shopping for food products. The last section addressed the assessment of the factors that influence the intention of consumers to buy food products online, using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The reason why this type of question was used is related to the fact that they provide the highest certainty that the answers correctly reflect the opinion of the respondent (Burns & Bush, 2002; Wong, 1999; Zikmund, 2000). As for the scale used for these questions, there are no special rules, but various researchers emphasize that in order to get the respondents' opinion more accurately, the scale should be from five to seven (Aaker *et al*., 2000; Malhotra, 1999).

A total of 473 questionnaires were completed with the consumers which were randomly selected and interviewed. The face-to-face method was used for data collection. Of these, 250 questionnaires were filtered to those who had experience in online shopping, but not in online food shopping. In order to do this, the questionnaire began with a dichotomous variable, asking the respondent whether they had previously purchased products online. The questionnaire is then followed by another dichotomous variable asking respondents if they had previously made an online food purchase. From this group, only those who are not involved in the online food purchase were selected for the study. This distinction is made to avoid the bias of lack of experience with online shopping. Then, the collected data were processed through SPSS and AMOS software.

Table 1 shows a summary of the socio-demographic characteristics of the sample. The participants comprised of 69.9% females and 30.4% males with ages ranging from 18-65 years (average age 30.37 years). Food shopping has been considered in many studies as the domain of women, despite the agreement on the changes in the role of gender in family purchases (Mortimer, 2011). Regarding age, the 26-35 years' group had the largest number of respondents 36.8%, followed by the under 25 years old group with 25.6%. Overall, 76.4%, had undertaken undergraduate education.

Table 1 - Socio-demographic characteristics of the sample

Socio-Demographic Characteristics	Groups	Number of Participants	Number of Participants
Gender	Male	76	30.4%
	Female	174	69.6%
	Total	250	100.0%
Age (years)	< 25	64	25.6%
	26-35	92	36.8%
	36-45	47	18.8%
	46-55	30	12.0%
	> 55	17	6.8%
	Total	250	100.0%
Education Level	Primary education	9	3.6%
	Secondary education	50	20.0%
	University	95	38.0%
	Master Degree	96	38.4%
	Total	250	100.0%

Measurement development

Before testing the hypotheses, measurement reliability and validity were evaluated. Cronbach's α provided strong evidence of measurement reliability. According to Nunnally (1981) the minimum acceptable value for α is 0.70. The results of Exploratory Factor Analysis (EFA) (see Table A1 in the Appendix A) shows that each construct has Cronbach's α greater than the suggested threshold value of 0.70, giving evidence of constructs reliability. Also, it is shown that each of the factor loadings are grouped under one factor in values greater than 0.40 (Stevens, 2002) providing evidence of constructs convergent validity.

EFA generated 5 factors by using principal components analysis, accounting for 71.6% of the total variance. KMO test of sampling adequacy (.801) and Barlett's test of sphericity (χ^2 = 3735.977, df = 253, p = .000) confirm the appropriateness of the factor analysis (Field, 2009).

Following the results of EFA, Confirmatory Factor Analysis (CFA) was performed in AMOS. The result showed that the model has a good level of goodness of fit (Chi-square = 291.696; df = 211; p=.000; CMIN/DF = 1.382; CFI = 0.978, RMSEA = 0.039; TLI = 0.973).

Table 2 - Validity/Reliability and factor correlation matrix with square root of the AVE on the diagonal

	CR	AVE	MSV	MaxR(H)	Product performance risk	Intention to buy	Lack of Trust	Risk Reduction	Distance
Product performance risk	0.827	0.549	0.120	0.870	**0.741**				
Intention to buy	0.921	0.627	0.022	0.937	–0.112	**0.792**			
Lack of Trust	0.907	0.709	0.120	0.907	0.346	0.116	**0.842**		
Risk Reduction	0.857	0.610	0.022	0.906	0.032	0.148	0.032	**0.781**	
Distance	0.846	0.578	0.095	0.849	0.308	–0.021	0.139	0.056	**0.761**

Note: CR - Composite Reliability, AVE - Average Variance Extracted, MSV - Maximum Shared Variance, MaxR - Maximum Reliability.

Composite reliability (CR) was used to analyze the reliability. According to Bagozzi *et al*. (1991), the minimum CR value should be 0.6. Table 2, shows that reliability is achieved, given that each construct has CR greater than the suggested threshold value.

Convergent validity will be analyzed through Average Variance Extracted (AVE), as much more conservative measure of convergent validity than CR (Malhotra & Dash, 2011). Table 2 shows that each construct has an AVE greater than the suggested threshold value of 0.5 (Hair *et al*., 2010), therefore the constructs meet the condition of convergent validity.

Regarding discriminant validity, Hair *et al*. (2010), suggests that the three threshold values to prove discriminant validity are: a) AVE > MSV, b) AVE > ASV, c) square root of AVE greater than correlations inter-constructive. As it is showed in Table 2, the threshold values are reached, the constructs fulfill the condition of discriminant validity.

3. Results and discussion

Given the good fit of the structural model, (Chi-square = 335.761; df = 248; p = .000; CMIN/DF = 1.354; CFI = 0.976, RMSEA = 0.038; TLI = 0.971), the hypotheses were evaluated by analyzing the structural coefficients presented in Table 3.

Hypothesis one (H1) regarding Product Performance Risk is supported. The result shows that Product Performance Risk negatively affects the intention to buy food products online. This is consistent with the literature which suggests that Product Performance Risk drive consumers to not buy food products online. The perceived risk of online shopping is assessed as a loss and perceived subjectively by consumers (Zhang & Yu, 2020). Also Product Performance Risk is perceived differently by consumers who buy beyond physical stores (Ngyen *et al*., 2021). Most studies in the field of consumer behavior in terms of online shopping accept that the risk of product performance affects the consumer's intention to buy online. The customers believe that since they cannot have physical contact with the product they tend to perceive high level of risk. This is in the same line with Li *et al*., (2020) who states that products bought online do not guarantee the consumer their origins and this is also reinforced by negative experiences with perceived risk and food safety.

Hypotheses two (H2) on Risk Reduction has a significant positive effect on intention to buy online food products. Based on the analyses, the results indicate that the alternatives of risk reduction seem to positively affect the intention to buy online food products. A risk reduction is an instrument or action, initiated by the buyer or seller, to relieve risk perception which have

Table 3 - Structural model results

Hypothesis (H)		Estimate	Std-Estimate	S.E.	C.R.	P	Results
H1	Intention to buy ← Product Performance Risk	–.147	–.183	.061	–2.416	.016	√
H2	Intention to buy ← Risk Reduction	.127	.134	.063	2.018	.044	√
H3	Intention to buy ← Distance	.010	.008	.060	.164	.869	×
H4	Intention to buy ← Trust	.148	.177	.059	2.525	.012	√
Control	Intention to buy ← Age	.003	.096	.002	1.543	.123	×
Control	Intention to buy ← Education Level	.035	.123	.018	1.979	.048	√

been widely accepted by many authors as being endorsement, brand loyalty, major brand image, private testing, store image, free sample, money-back guarantee, government testing, shopping, expensive model, word of mouth (Roselius, 1971). The responders affirmed that these instruments encourage them to buy food products online. This is in line with several authors in literature. The use of brand trust as risk aversion is identified by Ha (2004); Matzler (2008); Konuk (2018). Good online experience, security, word-of-mouth, quality of information and privacy are identified as risk relievers (Ha, 2004). The application of the Online Sensory Marketing Index (OSMI) concept is used as an instrument that can improve the communication of the retailer to improve the communication with the online consumer regardless of the limitation of the application of this index in the case of the sale of food products (Hamacher, 2022).

Hypotheses three (H3) regarding Distance is not supported, this factors have an insignificant effect on intention to buy food products online. The result can be explained by the fact that consumers despite the distances, want to choose the product themselves. According to Monsuwé *et al.* (2004), in spite of the consumers' positive attitude toward shopping on the internet, the physical proximity of a traditional store that sells the same products available online, can lead consumers to shop in the brick and mortar.

The results of the study (Wieland, 2021) show that online shopping in food retailing slightly supports the distance effect compared to other products. This is supported by Marjanen (2001) who states that still in-store grocery shopping is preferable to online shopping because consumers increasingly associate shopping with their other activities, and this further reduces the explanatory power of distance *per se* in store choice patterns. This result can be explained as well as the daily lifestyle. Hansen (2005) showed that shoppers of grocery products in brick-and-mortar stores consider online grocery shopping to be less compatible with their daily lives. This is also reinforced by Dudziak *et al.* (2023), who underlines the fact that consumers shop at the nearest store when factors such as price and availability are kept unchanged. This model is seen as more convenient for consumers. Since food purchases are considered impulse purchases, interaction with environmental stimuli plays a major role in choice (Belk, 1975). Sounds, aromas, sight serve as stimulants that increase the desire to buy products (Kwan, 2016). The influence of lifestyle on consumer purchasing behavior has also been proven by Fatmawati (2020).

The result of the fourth hypothesis (H4) shows that Trust has a significant positive effect on intention to buy online food products. The respondents clearly state that they experience uncertainty as to whether the seller picks their products, whether he respects the rules of hygiene, or whether he is scrupulous with the weight of the products. Our results are in line with Xiao

et al. (2015), that state that a consumer's trust in vendor positively affects the consumer's intention to purchase online food. These results are reinforced by Daroch *et al.* (2020), that state that lack of trust leads some people to hesitation to use online shopping and they believe that online shopping is riskier than traditional shopping. An online retailer must pay attention to product quality, variety, design and brands they are offering to generate consumer trust. This is supported by Wu *et al.* (2021), who states that food system actors are responsible for building consumer trust.

Online retailers feel that there are still many challenges in the transition from a traditional store to an online one (Sarkovská & Chytková, 2019). Retailers' knowledge should help them to understand the differences between online and brick-and-mortar customer motivations to achieve their goal (Seidel, 2021).

Referring to Table 3, of the two control variables used in this model, only education level has a significant effect on intention to buy online food products, while age does not significantly affect intention to buy food products online.

4. Conclusion

Consumer behavior towards online purchases is undergoing rapid changes, also accelerated by the widespread use of technology and the internet. Buying food products online attracts discussions because buying through the internet is one of the most dynamically developing forms of trade (Ramus & Nielsen, 2005).

Food purchases include many types of products and consumers develop different behaviors and attitudes towards them (Hanus, 2016). The study of online shopping channels for food products is less studied than that for other products, such as clothing or electronic devices. Previous studies focusing on food products have taken into consideration the motivating factors that lead consumers to use online shopping channels. There are also some works focused on the limiting factors of online purchases, but there seems to be a gap in analyzing factors such as the perception of distance in the use of online channels for food products with some exceptions that focus on the purchase of shelf-life products.

This study revealed that product performance risk limits the consumer to engage in online shopping of food products. This result has a greater importance knowing that the consumer is concerned about quality and healthy food. In recent years, concerns for a quality and safe product has been an important driver for consumers (Imtiyaz *et al.*, 2021). Different researchers have proven that nutritional quality attributes positively influence

the purchase intention, consumption and consumer satisfaction. Product features and complexity seem to be negatively related to online shopping (Lu *et al.*, 2021). The need to experience contact with the product, especially with the food product that is categorized as an impulse purchase is driven by the interactivity with the market and the retailers. The choice of offline products over online ones is closely related to the lack of trust in the provision of fresh products and their quality. The experience of touching and solving food products, which is missing in online shopping, discourages consumers from using this form of channel. Also, the lack of variety in choices experienced by the consumer in online shopping drives them away from these forms of product insurance.

Whereas risk reduction results as an incentive factor for online shopping. This means that consumers look for reliable strategies to mitigate the risk to show a clear intention to buy online. Investment by retailers could help drive consumer awareness, propensity to consider online food shopping, and subsequent online purchase execution. The few experiences that are noticed in this market are related to consumers who buy a very limited number of food products online such as bottled water and with low frequency. These experiences can be used to start a communication to increase the online shopping food basket.

The results of the study show that the perception of the distance to the place of purchase of food products does not affect the intention to buy online. This will require further studies on the influence of lifestyle, the need for greater interaction of the buyer with the product and the seller, as well as in some cases the price differentiation between purchase channels.

The fourth factor studied, which was trust in retailers, has a positive effect on the intention to buy online. Consumers build a complementarity of trust in products and trust in sellers. The retailer's reputation and experience can be seen as predictors of future consumer behavior towards the online channel.

Online shopping in food retail is seen as a potential alternative for the future, but in developing countries it exists as a complementary alternative alongside physical stores.

This study provides several academic contributions. The first is the contribution to the literature on online consumer behavior for food products. This topic, from a consumer perspective, has been less explored in developing countries. The second contribution focuses on the factors that prevent consumers from shopping online for food products, offering faster interventions by retailers to increase consumer satisfaction. The third contribution is the result obtained from the combination of factors such as: product performance risk, which in the case of food products is the main driver of perception; risk reduction; distance and trust in the seller.

As managerial implications, the results can help strategic marketing managers focus on how they should analyze the consumer decision-making process in order to find and implement techniques that increase interactivity with the customer, building reverse channels in the case of an unsatisfied customer. To address the need for sensory appeal, retailers should enhance information by emphasizing natural appearance and product origin information for food products. Evidence from this paper related to consumer trust also shows the importance of improving online platforms in terms of ease of use and security of data. To build trust and reduce the perception of product risk, retailers should offer real images of the food products they sell.

Easy access to a large number of stores selling food products make the factor of distance unimportant to the consumer. However, more research is required to further understand consumer needs because the online food channels have been adopted less by consumers.

Regardless of the obtained results, a limitation of the study is the generalization of the research object to food products as a whole. Conducting the study of specific categories of food products can contribute to more accurate results.

Therefore, future research can investigate the online consumer behavior of different generations of consumers with different lifestyles, towards the tendency to adapt to technology and online shopping, as well as focusing on consumer segmentation for online food products.

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Appendix A

Table A1 - Exploratory Factor Analysis

Rotated Component Matrix	**Component**					
	α	**F1**	**F2**	**F3**	**F4**	**F5**
Intention to buy	**.927**					
I intend to buy food products online if the sales units are far from where I live		.787				
I intend to buy food products online if it would save me time		.811				
I intend to buy food products online if I could assess the freshness and the appearance of the products I want to buy		.859				
I intend to buy food products online if I had more confidence in the seller		.876				
I intend to buy food products online if the seller offers me more guarantees about product quality		.848				
I intend to buy food products online if I had more information about how the seller selects the products I have ordered		.889				
I intend to buy food products online if the seller does not charge for delivery		.740				
Trust	**.907**					
I trust the seller for product selection I ordered			.875			
I trust the seller that I will get the right weight and quality of the product I ordered			.845			
I trust the seller follows the hygienic conditions			.876			
I trust the service offered by the seller			.889			
Risk Reduction	**.863**					
I build trust through label information				.884		
I build trust by buying brands with a good image				.886		
I build trust through personal experience created				.882		
I build trust through the experience of others				.695		
Product Performance Risk	**.841**					
I may not get the right product quality					.816	
Size description may not be accurate					.755	
It is difficult for me to compare the quality of a similar product					.803	
I cannot try the product online					.838	
Distance	**.841**					
The shops where I buy food products are close and easily accessible						.830
The time I spend going to the shop is short						.783
There are different types of food shops near where I live						.809
There are a large number of food shops near where I live						.847

Note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

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