Psychological Factors Predicting Organic Food Consumption in Social Commerce

Kim Cuong Vo
University of Eastern Finland
vokim@student.uef.fi

Tommi Laukkanen
University of Eastern Finland
tommi.laukkanen@uef.fi

Abstract

This paper examines consumer perceptions of the purchase of organic food in social commerce. We extend the Theory of Planned Behavior to perceived information usefulness and the perceived consequences of s-commerce use. We empirically test our hypothesized conceptual model among 261 consumers in market conditions with limited access to organic food products via conventional grocery stores. The results show that the perceived usefulness of organic food information in s-commerce has a highly significant effect both on the consumer attitude to using s-commerce and on the subjective norm. Perceived consequences influence the subjective norm and perceived behavioral control, but not on attitude. Attitude and the subjective norm significantly predict the consumer's intention to use s-commerce for organic food purchases; perceived behavioral control does not. Our results highlight the importance of information in social commerce as a driver of purchasing, especially in markets offering little product information and availability in conventional channels.

1. Introduction

Social commerce (s-commerce), a subset of e-commerce that includes activities and transactions delivered via the social media environment [1] and its platforms such as Facebook and YouTube, has steadily developed its influence in online business [2]. Indeed, various social media platforms have rapidly become imperative channels for global marketing communications, attracting company leaders and academic researchers [3].

These platforms enhance a two-way interaction at personal level between companies and their customers, and therefore strengthen the attachment between customers and brands, support the search for

information, interactivity, and promotion, and affect consumer buying behavior [4]. The platforms enable individuals to express attitudes and personal opinions in reviews about a product or service, and to search for the opinions of other users [5]. The online interaction between companies and their customers, combined with the available information (reviews, posts, comments about products, product descriptions, etc.), has created an enormous opportunity for marketing planners, and has enhanced effective electronic word-of-mouth (eWOM) and directly influenced consumer decision making [3,6].

It therefore appears that social media platforms are important information sources for consumers looking for support for their purchase intention. Previous research suggests that users' reviews, opinions, and feedback on social media significantly predict consumers' behavior and perceptions [4].

The organic food trend is becoming a permanent phenomenon. Consumers are increasingly buying products produced with natural substances and processes. Organic food consumption is described as "a way of life", with motives derived from perceived healthiness, better taste, environmental concerns, food safety, animal welfare, and support for the local economy [7]. Recent research evidence shows that the motive of status also drives consumers in choosing organic food, and that the "going green to be seen" effect is genuinely present in consumers' food consumption behavior [8].

Undeniably, organic food is no longer a niche market. This is especially the case in the US and EU, which dominate the organic food markets. However, Asian countries, especially developing countries like Vietnam, are lagging far behind. This appears to be largely a distribution channel issue, as consumers in these markets can hardly ever find organic food on the supermarket shelves [9]. At the same time, international studies have shown that availability is one of the key factors affecting organic food consumption [10]. Consumers today are more aware of the existence of organic food products than they were because of

major concerns related to food safety and health, and to the sustainability of production and society at large [11]. For example, the Vietnamese are desperately seeking ways to improve the quality of their food because of a series of scandals stemming from the misuse of agrochemicals and the low level of trust in the ability of local government to control food safety standards [43]. In large urban areas like Hanoi and Ho Chi Minh City, citizens develop their own gardens on rooftops and balconies, and acquire their cultivation knowledge from social media platforms [43]. The young population is especially concerned about food safety issues, creating great market potential for green products [12].

Compared to Western countries, Vietnam is a young country (with a median age of 30.9). Its population spends an average of more than two hours daily surfing social media [13]. According to the *Financial Times*, Vietnam has 35 million digital consumers, with an increase of 63 percent between 2016 and 2017 [14]. Accordingly, the number of consumers engaging with firms on their websites and social media platforms has also grown dramatically, encouraging small retailers to establish virtual stores on social media platforms to attract local consumers [15]. Indeed, s-commerce offers great potential for a competitive advantage, especially for small and medium-sized organic firms, which may find it difficult to enter consumer markets via conventional channels.

Although e-commerce is already an established research area, and s-commerce as a sub-area is beginning to emerge, little is known about organic food consumption in these channels. As consumption today is largely a psychologically driven activity, we study how psychological incentives drive consumers to purchase organic food in the s-commerce environment. We study developing Vietnamese markets, where the availability of organic food in brick-and-mortar stores is limited, while the young population, especially, is showing great potential for green consumption and healthy food.

We rely on the Theory of Planned Behavior to explain the consumer's intention to use s-commerce for organic food purchases. Moreover, we test if the perceived usefulness of social media information and the expected consequences of s-commerce influence consumer attitude, the perceived subjective norm, and the perceived behavioral control for buying organic food in s-commerce.

2. Literature review and hypothesis development

2.1. The Theory of Planned Behavior

The Theory of Planned Behavior (TPB) [16] is probably the most applied theoretical model used for consumer intention and behavior research. The central assumption of the TPB model is that an individual's intention to perform (or not to perform) a behavior is the most important immediate determinant of that action [16]. Ajzen [16] explains that human beings behave sensibly – an individual implicitly or explicitly considers the available information to make judgments for different actions. The model suggests three psychological determinants to predict behavioral intention: the attitude to behavior; the subjective norm; and perceived behavioral control [16]. Attitude stands for the individual's positive or negative evaluation in performing the behavior of interest, while the subjective norm (SN) is a personal perception of social pressure to perform (or not to perform) the given behavior. Finally, perceived behavioral control (PBC) is the sense of self-efficacy or the ability to perform the behavior of interest. Each determinant of TPB has different effects on the behavioral purpose, and the actual behavior depends on an individual's existing beliefs.

The Theory of Planned Behavior applies in multiple settings, and it has been adapted to predict behavior and intention in a wide range of contexts [17]. TPB is widely utilized in studies testing the consumer's intention and actual behavior in Internet shopping: for example, their willingness to buy groceries online [18] and the influence of trustworthiness factors on the intention in online shopping behavior [19]. In addition, TPB is extended to examine specific cases, such as the influence of Facebook advertising on the intention to purchase weight-loss products online [20], the intention to purchase organic food online among consumers with different food-related lifestyles [21], or the importance of trust in Thai consumers' perceptions of green products [22].

2.2. Food online

The Internet facilitates transactions for all kinds of product, including food. Indeed, the Internet is lifting the food industry to significant success, and is increasing consumer awareness and interest in purchasing food via online stores [23]. This is logical, as a large element of the consumption process relates to information searches about product characteristics

and an evaluation of alternatives. In Vietnam, e-commerce penetration (the total online purchase against the total population) is promising, with 46 million active social media platform users [13]. However, the online environment differs greatly from the conventional retail environment, and product attributes play a major role when consumers decide whether or not to purchase online.

Consumers use intrinsic and extrinsic cues in their food purchases. An intrinsic attribute is a quality that the product has “in itself,” like taste, texture, color, flavor, smell, and appearance. Extrinsic attributes are those that are not features of the core product [24]. Extrinsic attributes, like price, brand name, packaging, country of origin, and product information, are attributes which are powerful tools in the hands of marketers [25, 26]. While internal cues are completely missing or exist only to a very limited degree when buying food online, external cues on the Internet can be an advantage, because it is possible to convey a large amount of information tailored to the needs of individual consumers [27].

Organic food products are mainly marketed by their health benefits, which are invisible to consumers, making it necessary to offer a precise explanation to win a purchasing decision [23]. This is a critical factor in the organic food market, because the characteristics of the product need to be clarified to enhance consumer awareness and boost demand. The information can be related to certified labeling, the non-chemical production process, and animal welfare certification, for example [23]. The requirement for such information is more easily satisfied nowadays by search functions available on the Internet. Early adopters’ judgments and reviews of the product are important for consumers less knowledgeable about the product and its potential benefits [28]. Consequently, the information on social media platforms can be essential for consumers considering organic food options.

In addition to the amount of general product information and targeted marketing messages, the online environment may add an element of convenience to consumer’s shopping activity. With online shopping, consumers can, for example, save time compared to a physical trip to the grocery store, avoid carrying a heavy basket by ordering a home delivery service, and compare price information between sellers [23]. These factors are associated with the perceived consequences of online shopping in general.

2.3. Perceived usefulness of social media information

In their study, Grunert and Ramus [23] suggest that the formation of beliefs concerning food shopping via the Internet follows a classical effect hierarchy, with a sequence of exposure to relevant information, the conscious attention paid to it, an understanding based on the existing knowledge and experience, and finally commitment to memory. Online consumers can adopt information about organic food from reviews, expert blogs, basic knowledge from official websites and fan pages, or by referring to other shoppers’ experiences. Specifically, an empirical study has shown that Vietnamese consumers lack knowledge and understanding of organic food, production process regulation, and certification systems, creating a lack of confidence in consumption [11]. Consumers therefore often search for posts and reviews of products from other users to increase their confidence about their decision before purchasing a product or service [29].

Because of social structure and tradition, the Vietnamese usually establish their food safety trust at the vendor level. They purchase food from the vendors they know at traditional markets or outlets, and trust the information these vendors provide [43]. Although the government authorities established the national basic standard for organic products as early as 2006, the regulatory system, policies for developing and monitoring the market, and quality certification system remain incomplete [43].

Concerns about food safety and green products have led to the development of social media forums, which are important information channels especially for young consumers, who already have some awareness of food safety and online shopping [43]. Certification information about organic food is critical in the virtual environment because consumers cannot technically distinguish between conventional and organic food without certified labels [22]. E-commerce and social commerce may be the solution not only for providing information such as product descriptions, reviews, and recommendations posted by other users and organic food experts, but also for providing a new distribution channel for organic food products.

In the previous literature, the relationship between users’ reviews and purchase intention has been examined widely. For example, recommendations posted by users significantly influence potential consumers [29,30]. An online product review is perceived as an endorsement from a previous user who is willing to help [31]. We anticipate that if the information provided on social media platforms is perceived as useful by the consumer, it is likely to

influence the consumer's attitude, subjective norm, and perceived behavioral control. Moreover, we expect perceived information usefulness (PIU) to directly affect purchase intention. We hypothesize that:

- H1a: Perceived information usefulness has a positive effect on consumer's attitude to organic food purchase intention in s-commerce.
- H1b: Perceived information usefulness has a positive effect on the subjective norm.
- H1c: Perceived information usefulness has a positive effect on consumer's perceived behavioral control.
- H1d: Perceived information usefulness has a positive effect on consumer's organic food purchase intention in s-commerce.

2.4. Perceived consequences of s-commerce

The study by Limayem, Khalifa, and Frini [32] extended the Theory of Planned Behavior with the new psychological determinant "perceived consequences" (PC) to investigate the specific consequences of online shopping that drive Internet users' behavior [32]. By specific consequences, they refer, for example, to consumer perceptions of time saving, shopping convenience, and customer service. Given the scarcity of time on weekdays and the fact that the number of conventional grocery stores with organic food options may be limited, online shopping may become an attractive alternative to traditional brick-and-mortar grocery stores. Apart from time savings, the tendency to order safe food online is expected to grow among younger Vietnamese [43]. We hypothesize that:

- H2a: Perceived consequences have a positive effect on consumer's attitude to organic food purchase intention in s-commerce.
- H2b: Perceived consequences have a positive effect on the subjective norm.
- H2c: Perceived consequences have a positive effect on consumer's perceived behavioral control.
- H2d: Perceived consequences have a positive effect on consumer's organic food purchase intention in s-commerce.

2.5. Attitude to s-commerce

Attitude refers to the degree to which a person favorably or unfavorably evaluates the behavior of interest [16]. Previous research indicates that attitude has a strong capacity to predict purchase intention in

the virtual world and on social media [33]. This is also the case with food products. For example, a study by Hansen et al. [18] shows that attitude is the most significant predictor of intention to purchase groceries online. Attitude also plays a significant role in predicting organic food consumption [34]. We therefore hypothesize that:

- H3: The attitude to shopping for organic food using s-commerce has a positive effect on the consumer's intention to purchase organic food products in s-commerce.

2.6. Subjective norm

The subjective norm (SN) is a function of normative beliefs which refers to the individual's perception of socially normative pressure to behave in a particular way [16]. It relates to a person's beliefs about whether significant others think he or she should engage in the behavior. The subjective norm has a significant effect on the individual's behavioral intention and actual behavior [35]. According to social impact theory, the importance and proximity of the group relationship determine whether an individual acts in accordance with the normative pressure of the group [36]. Consequently, normative beliefs about the opinions of significant others create the subjective norm that pressures the individual to embrace or avoid the behavior [16].

Shoppers on social media are more exposed to the influence of significant others than shoppers in brick-and-mortar stores [37]. Indeed, the subjective norm may have a significant influence on purchase intention and actual behavior in s-commerce [35].

Food is not only for satisfying hunger but represents an instrument of communication between an individual and the group. The opinions of group members may therefore significantly affect the intention to perform or not perform a given behavior [21]. Liang [21] suggests that when consumers intend to purchase organic food online, the opinions of significant others are evaluated and considered in decision making [21]. In light of the previous literature, we hypothesize that:

- H4: The subjective norm positively affects the consumer's intention to purchase organic food products in s-commerce

2.7. Perceived behavioral control

Perceived behavioral control (PBC) refers to an individual's perceived ease or difficulty in performing

a particular behavior [16]. Conceptually, it relates to consumer self-efficacy, [37] as both constructs refer to the individual's belief that the particular behavior is under his or her control. However, perceived behavioral control is typically operationalized by the ease or difficulty of the behavior, while self-efficacy is operationalized by the individual's confidence in being able to carry it out. Although Ajzen [16] argues that perceived behavioral control significantly predicts behavioral intention, the effect on online grocery purchase intention seems marginal [18]. Nor does perceived behavioral control indicate significant effects on the intention to purchase weight-loss products [20]. However, studies on information technology and social media report strong effects [1,33]. It is suggested that perceived behavioral control is based on past experience, individual preference, and second-hand

information, [1] leading to an assumption that the impacts on intention and behavior may vary because of the research context.

We expect s-commerce users to possess more experience, skills, and self-confidence in using social media platforms than those unfamiliar with them. We also assume that consumers have a certain amount of knowledge and awareness of organic products in general, leading to a greater behavioral intention to shop for organic food in s-commerce. We therefore hypothesize that (Figure 1):

- H5: Perceived behavioral control has a positive effect on the consumer's intention to purchase organic food products in s-commerce.

Figure 1. Conceptual model and hypotheses

3. Data and methods

3.1. Questionnaire and data collection

Given the context and aims of the study, we used Facebook, the largest and most popular social media platform in Vietnam, for data collection. Facebook is a major social marketplace for users, small merchandisers, and companies in establishing their identities in the virtual world.

We designed a self-administered questionnaire with measures adapted from the previous literature on the Theory of Planned Behavior. We used a Likert scale for all the constructs except attitude, which was measured with a semantic differential scale. For our dependent variable, we used three observed variables [16,21,35,38] to measure the consumer's intention to use s-commerce for organic food purchases. We used

five items to measure attitude [16,18,21,39,40], three items for the subjective norm [18,21,35], and three items for perceived behavioral control [18,21,33]. We also used three [29] and four [32] items respectively to measure the perceived information usefulness in s-commerce and the perceived consequences.

We used a pilot test to validate the study instruments. The questionnaire was first constructed in English, then translated into Vietnamese and reviewed by local marketers. During the pilot phase, the questionnaire was distributed by email to 50 social network users interested in buying organic foods. They were asked to complete the survey and comment on the length, format, applied scales, content, and wording of the items. They were also encouraged to comment on content they did not understand to eliminate the possibility that they would complete the questionnaire

without precisely understanding it. Only minor changes to the original questionnaire were needed.

To ensure the data's representativeness, we used both offline and online data collection methods. We distributed the questionnaire online to the Facebook wall of five Vietnamese organic food community groups. Two hundred printed paper-and-pencil questionnaires were also distributed to local food shoppers at two large supermarkets. The supermarkets were chosen because of their crowded locations, and because they were the region's largest and most popular, distributing a variety of organic foods. Altogether, 261 valid responses, without missing values, were received.

3.2. Construct validation

We used partial least squares structural equation modeling (PLS-SEM) to test the hypothesized effects between constructs. All the observed variables of the constructs were built as reflective indicators in the model. All the factor loadings, except four, which were between 0.60 and 0.70, were greater than the general threshold of 0.70. We tested whether the deletion of the four items improved the model [41]. As it did not, we decided to retain them. Cronbach's alpha and composite reliability values exceeded 0.70, while AVE values exceeded 0.50, satisfying the internal consistency reliability and convergent validity (Table 1).

Following Hair et al. [41], we tested discriminant validity by examining the Heterotrait-Monotrait ratio (HTMT). Discriminant validity was achieved: All the HTMT values remained below the conservative threshold value of 0.85.

4. Results

The results of the structural model show that the independent variables explain more than 63 percent of the variance in the consumer's intention to use s-commerce for organic food purchases. This can be considered sufficiently high in consumer research [41]. Moreover, the results show that the perceived usefulness of organic food information and the perceived consequences of using s-commerce for searching for and purchasing organic food explain approximately 48 percent of the attitude to using social commerce in organic food shopping, 42 percent of the subjective norm, but only 20 percent of perceived behavioral control.

Latent constructs	Item	Factor loadings	Alpha	CR	AVE
PIU	1	0.791	0.811	0.810	0.587
	2	0.714			
	3	0.791			
PC	1	0.719	0.815	0.815	0.525
	2	0.711			
	3	0.779			
	4	0.687			
ATT	1	0.740	0.877	0.877	0.589
	2	0.730			
	3	0.828			
	4	0.822			
	5	0.708			
SN	1	0.856	0.876	0.876	0.702
	2	0.820			
	3	0.837			
PBC	1	0.906	0.782	0.776	0.544
	2	0.628			
	3	0.645			
PI	1	0.708	0.768	0.766	0.524
	2	0.635			
	3	0.818			

Note: PIU: perceived information usefulness; PC: perceived consequences; ATT: attitude; SN: subjective norm; PBC: perceived behavioral control; PI: purchase intention.

The results support H1a-c, because perceived information usefulness significantly affects attitude, the subjective norm, and perceived behavioral control. The effects on attitude and the subjective norm are highly significant; the effect on perceived behavioral control is only moderate. The results further show that the perceived consequences of s-commerce have no significant influence on attitude, and only moderate effects on the subjective norm and perceived behavioral control. The results therefore reject H2a and give only light support to H2b-c.

The results suggest that the attitude to using s-commerce in purchasing organic food is the strongest predictor of purchase intention, supporting H3. It also seems that the subjective norm, i.e. the views of significant others, has a moderate but statistically significant effect on behavioral intention to use s-commerce for organic food purchases. This supports Hypothesis H4. However, the results clearly reveal that perceived behavioral control has no influence on purchase intention in this context. Hypothesis H5 is therefore rejected (Figure 2).

Note: *** = $p < 0.001$; ** = $p < 0.01$; * = $p < 0.05$; ns = not significant

Figure 2. Direct effect results

According to the Theory of Planned Behavior (TPB), purchase intention is affected by the attitude to behavior, the subjective norm, and perceived behavioral control [16]. At the same time, previous research indicates other constructs that may significantly influence purchase intention either directly or via the three TPB constructs. Given the context of organic food in s-commerce, this study hypothesized that attitude, the subjective norm, and perceived behavioral control would mediate the effects of perceived information usefulness and perceived consequences on purchase intention [29,32,42]. We further tested if perceived information usefulness and perceived consequences directly affected purchase intention. As Figure 2 shows, the direct effects are both non-significant, rejecting H1d and H2d. This indicates that the TPB constructs are full mediators in the model. To examine the mediation effects, we performed a bootstrap test with 5,000 bootstrap samples. The results show that both indirect effects are indeed significant, since neither of the 95% confidence intervals includes zero, t-values are greater than 1.96, and p-values are less than 0.05 (Table 2).

Table 2. Total indirect effects

Path	Indirect effect	95% confidence interval	t-value	Sig. $p < 0.05$
PIU → PI	0.343	[0.197, 0.531]	3.856	Yes
PC → PI	0.147	[0.012, 0.273]	2.269	Yes

Note: PIU: perceived information usefulness; PC: perceived consequence; PI: purchase intention.

All proposed mediation effects were examined simultaneously to gain a more complete picture of the mechanisms through which exogenous and endogenous constructs interacted. The results indicated that only three indirect paths were statistically significant. Only these indirect effects can therefore be considered indirect effects of perceived information usefulness and perceived consequences on purchase intention (Hair et al. 2017).

Table 3. Specific indirect effects

Path	Indirect effect	95% confidence interval	Sig.
PIU → ATT → PI	0.238	[0.124, 0.412]	Yes
PIU → SN → PI	0.092	[0.021, 0.216]	Yes
PIU → PBC → PI	0.013	[-0.022, 0.078]	No
PC → ATT → PI	0.083	[-0.011, 0.198]	No
PC → SN → PI	0.050	[0.009, 0.132]	Yes
PC → PBC → PI	0.014	[-0.027, 0.081]	No

Note: PIU: perceived information usefulness; PC: perceived consequences; ATT: attitude; SN: subjective norm; PBC: perceived behavioral control; PI: purchase intention.

Concerning the indirect effects of perceived information usefulness, only those of PIU → ATT → PI and PIU → SN → PI are significant, the direct effect of PIU → PI is non-significant, and all paths point in the same direction. Concerning the perceived consequence construct, only the mediation path PC → SN → PI is significant, and the direct effect of PC → PI is non-significant. We therefore conclude that attitude represents a complementary mediator for the relationships from PIU to PI, and the subjective norm

represents a complementary mediator for both relationships from PIU to PI, and from PC to PI in this research context (Table 3).

5. Conclusions

Overall, the study's constructs predict the consumer's intention to use s-commerce in purchasing organic food relatively well. We demonstrate that attitude and the subjective norm are key psychological constructs for predicting purchase intention. These results are in line with previous studies of online purchase intention and food consumption [3,12,32]. Perceived information usefulness is an important and significant determinant for all three TPB constructs: attitude; the subjective norm; and perceived behavioral control. Moreover, perceived information usefulness indirectly affects the behavioral intention to use s-commerce in organic food purchasing via attitude and the subjective norm.

However, our results differ somewhat from previous research on the perceived consequences of behavior. Perceived consequences showed significant effects on the subjective norm and perceived behavioral control, but not on attitude. Moreover, perceived consequences have a significant indirect effect on purchase intention only via the subjective norm.

Some of the results may arise from the Vietnamese organic food market's relative lack of maturity. Traditional shopping methods still notably influence food purchasing habits – although consumption practice has developed to cover many different coexisting shopping methods in recent years [43]. We highlight the importance of online information and the consequences of awareness for organic food purchases in s-commerce, because they significantly influence consumer attitude and purchase intention.

Our study suggests great potential for s-commerce as a channel for organic food purchases, especially in countries like Vietnam, where organic food may be difficult to find in conventional brick-and-mortar grocery stores. Moreover, in s-commerce, organic food companies – even the smallest – have an opportunity to better aim their information at potential consumers and effectively spread information in peer-to-peer groups. However, although social media represents a prominent new purchasing channel, other online channels do exist. Future research should examine how consumers choose to purchase via s-commerce against other online channels.

We extended the Theory of Planned Behavior model using the perceived information usefulness and perceived consequences of s-commerce. Other factors are also worth considering which may directly or

indirectly influence the consumer's intention to purchase organic food in s-commerce. The culture associated with food consumption may offer a potential avenue for future research to investigate. Moreover, behavioral intention may vary with respect to different organic food subgroups (for example, vegetables, grains, or protein).

The current research only studies “organic food” in general, and future studies might analyze these subgroups more deeply to explore additional insights into specific organic food categories. This study focused only on Vietnamese consumers and organic food markets for the reasons already discussed. Future research might therefore study other countries similar in culture, economic development, and food distribution.

Organic food companies are not alone in benefiting from s-commerce. We believe all products favored by the online population will benefit from its rise. Trendy, niche market, and lifestyle products, as well as some luxury products not readily available from conventional stores, are likely to be popular in social channels. These products include clothing, accessories, household products, fitness products, and well-known branded health and beauty products; handmade products and unique manufactured items may also benefit from s-commerce. S-commerce therefore offers growth opportunities for large manufacturers, but it can especially provide a powerful medium for small handicraft workshops and retailers that might otherwise struggle to gain visibility. Future research should therefore examine the potential of these products and industrial sectors in s-commerce.

6. References

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