

Trustworthiness of Organic Produces in Urban Market: Innovation through Quick Response (QR) Code

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Abstract:

Considering the risks associated with food consumption, several risk reduction strategies are used by consumers, all linked to brand loyalty, store image or label references that build trust in the product. A food product can be labeled organic if it complies with the principles for organic production, processing, labeling and control. Previous researchers have identified that organic certification logo have significant impact on consumption of organic products in urban markets. Organic logo increases trustworthiness of urban consumers about organic produces. Previous studies further observed that high price has deep connotation with trustworthiness about organic produces and urban buyers have ability to pay high price. The urban buyers though they have ability to pay high price for organic produces, they do not get them from trustworthy sources due to lack of believable information about organic produces. The urban organic consumers mostly come from affluent part of the society who have access to technology and have access to smartphone for available information about sources of organic produces. Quick response code (QR code) is a type of 2D bar code that is used to provide easy access to information using free application with smartphone or QR scanner. The information (authentication code, grower code, name, location, contact number, Facebook URL, production date, expiry date and regulatory authority URL) about authentic organic growers can be embedded on QR code that can track easily at no cost. This paper addresses the model of adopting QR code based labeling mechanism for organic produces that dramatically will improve trustworthiness among organic consumers. This authentication process will eliminate fake organic growers also. The QR code based mechanism may increase brand loyalty, store image and can be used as a tool to replace the traditional organic labeling for urban markets.

Key words: Authentication, Credence quality, Organic food, QR code, Trustworthiness

Introduction:

The global market of organic foods has grown by more than 4.7 times since 1999 from 15.2 billion US dollar to 72 billion US dollar in 2013 (Sahota, 2015). This new market for organic food is a niche segment, has been evolving in the urban area in favor of organic food. The new market segment is searching for healthy and safer sources of food and they could believe that organic foods are the solution to it (Mukul *et al.*, 2013). This niche segment is extremely skeptical about conventional commercially produced agricultural produces and its methods because these were poorly developed and had serious negative health and ecological impact.

The urban organic niche consumers mostly come from affluent part of the society who have access to technology and have access to smartphone for available information about sources of organic produces. It is proven that the consumers who are inclined to organic foods are putting more priority on organoleptic characteristics, health concern and environmental concern. But often this niche consumers when try to buy organic food don't have any reliable mechanism to verify the authenticity of organic foods. Due to the credence nature of organic food, consumers are likely to be more cautious and skeptical about the genuineness of organic food labels and their benefits (Voon, 2011). Customers typically cannot judge the technical quality of some products even after they have received and consumed them which are typically know as products with high in credence qualities. So organic product is basically a product with high credence quality (Kotler & Keller, 2012). Organic farmers or marketers should have to conceptualize this issue of trustworthiness to overcome the skepticism of their consumer. Positive attitude related to product labeling, believability of advertising and certification from opinion leaders builds trust and confidence while choosing products (Perrini et al., 2010). Michaelidou & Hassan (2008) revealed that "belief" about the consequences (better taste, healthier, environmentally friendly) is instrumental in leading consumers toward organic food consumption.

In case of organic food, niche consumers expect more benefits from organic food than conventional commercially produced agricultural produces and willing to incur additional perceived bundle of costs in evaluating, obtaining, and using organic foods, including monetary, time, energy, distance traveled to acquire the organic food, volume of activity required to perform to acquire the organic food and psychological costs. Typically consumers are willing to pay price premium at the time of buying organic food as they are getting more value than non-organic food. A study revealed that 80% of UK households were willing to pay at least some positive amount for the organic goods. The same study also found on average organic bacon rashers are 85% more expensive than non-organic (Grieth & Nesheim, 2008). Sarker & Itohara (2008) showed that 90% of the organic consumers are interested to pay price premium for certified organic food in Bangladesh. Another news reporting shared the similar view where organic foods cost more than the average products and are still not within the reach of the common people (Parveen, 2008).

Mere size of the Global organic market which is a US\$ 72 billion market attracted a lot of greedy and unethical business organization throughout the world and opening up the door for potential abuses. Under-the-table financial contributions to politicians in Washington have allowed Big Food companies to hijack the organic industry by selling products blatantly in violation of strict organic standards set by the U.S. Department of Agriculture (USDA). The USDA fails to prosecute violators due to giant corporations' lobbyists pressuring the agency to "favor their preferred industrial model of food production," according to Mark Kastel, the Senior Farm Policy Analyst at The Cornucopia Institute (Wilson, 2014). Because organic food can fetch prices often twice as high as conventionally produced food, the risk for fraudulent labeling has grown just as fast (Hohmann, et al., 2014). Many companies, do the various fraudulent greenwashing activities (Greenwashing is when a company tries to use eco-friendly, or in this case, organic terms or traits, to market and sell products when in reality the product is not honestly organic) to make extra profit: a) Labeling their products with organic wording even if their products aren't organic, b) Using terms on their packaging that people often confuse with organic, such as natural or free-range, and c) Trying to

confuse consumers by designing the packaging that resembles the organic packaging (Chait, n d). One in six farm shops, delicatessens and restaurants that claim to offer “organic,” “fresh” or “handmade” food are cheating their customers, an investigation has found (Blake, 2011). Much of the organic foods available in the markets are fake, Assistant Food Safety Commissioner, A.K. Mini has said. (“Most organic food in market”, 2015). From the above discussion it is clear that fraudulent activities are rampant in supply side which will finally put the authentic organic farmers’ existence in stake. On the other hand due to these kind of unchecked fraudulent activities customers will be highly discouraged. Here the core area is to ensure the trust between the consumers and authentic growers. This study contributes to the trustworthiness in two ways:

- 1) to enable consumers to verify the authentic growers at the time of purchasing the organic food
- 2) to enable authentic growers by the user friendly mechanism of authentication to gain the trust of consumers of organic food

Methodology:

Here a conceptual model has been developed by considering the current market condition of organic food where lack of trust and fraudulent activities are rampant. The theoretical base of this paper is founded by thoroughly reviewing the literature relevant to purchase issue of organic food and its consumers. Model tried to include the mitigating mechanism of lack of trust inside the mind of consumers of organic product. This model also included the mechanism of eliminating the fake organic growers which will ensure the sustainability of future organic industry. Here, the application of QR code is shown for authentication purpose. This authentication process can be applicable for both small and large organic growers.

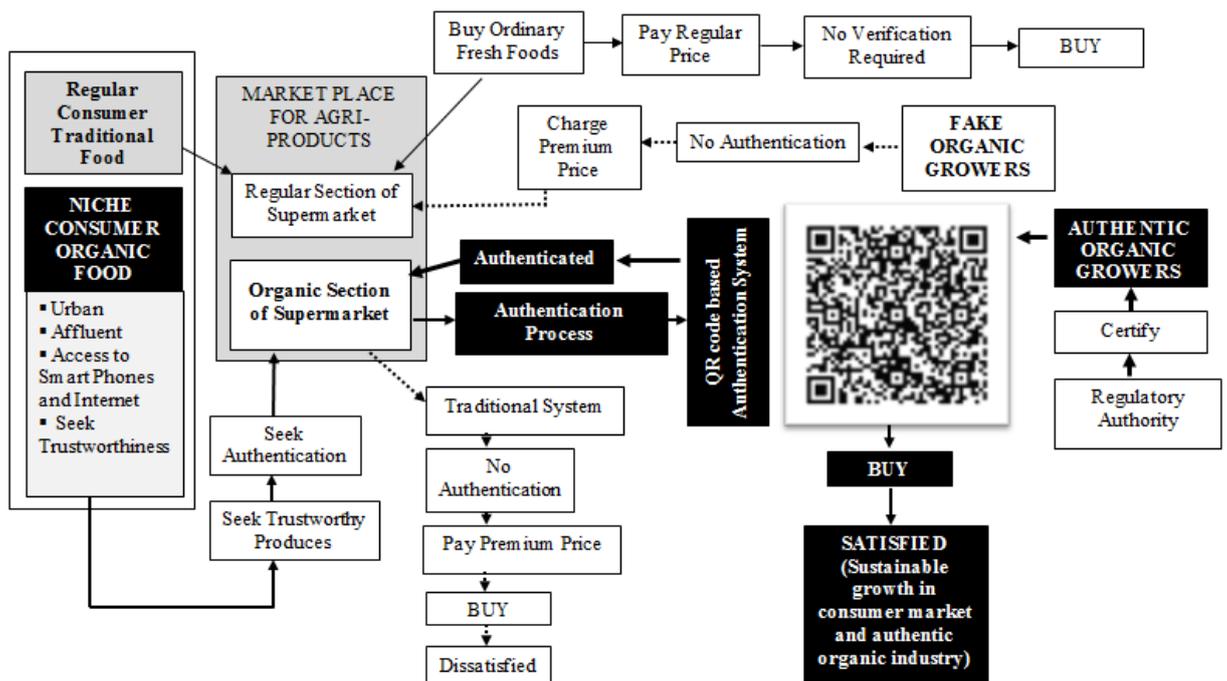


Figure 1: Authentication through QR code-Innovation in Organic Market

Proposed Model:

Organic consumers are niche urban consumers who are affluent and tech savvy and do not mind to pay high price if the products come from trustworthy sources. On the contrary, regular consumers are price conscious and they usually buy ordinary fresh foods from the supermarket with regular price. In the supply side of organic produces, there are two types of suppliers: fake organic growers and authentic organic growers. Due the presence of fake organic growers in the market, the authentic organic growers lose market share due to low profitability or loss and lack of trustworthiness. They do not have any instrument to gain trust of the consumers. The fake growers have nothing to lose from the market as they charge premium price by incurring lower production cost. It is very urgent to safeguard the authentic producers as well the niche urban organic consumers.

QR code based trustworthiness model (Please see Figure 1) could be a good solution for that. The model emphasizes on protecting the urban consumers in demand side and organic agri-products grower in supply side. In the supply side, authentic organic growers should have certification from regulatory authority that will acknowledge the grower code, name and location of authentic growers. This information will be available at regulatory authority's that can be tracked by using QR code. Urban consumers can access the information (authentication code, grower code, name, location, contact number, Facebook URL, production date, expiry date and regulatory authority URL) by scanning the QR code using smart phone or handheld devices. Here the model emphasizes on one of the components of QR code that is authentication code. This unique code will ensure trustworthiness in the transaction mechanism enormously. Because, for every batch of product, the authentic grower can generate six digit authentication code which will be disclosed in their Facebook page when that specific batch will be available at supermarket shelf. This QR code will enable the organic consumer to authenticate the organic grower by cross checking the authentication code disclosed in the Facebook page. Moreover, the supermarket will be able to know about the authentic growers by scanning the QR code using their QR scanner or Smartphone. This mechanism will increase trustworthiness of authentic organic grower and supermarket will be able to enhance the image of organic products to the consumers.

In the traditional organic products selling approach, urban consumers buy organic produces with premium price without any authentication which put them in dilemma and mistrust about sources. As they do not have any alternative they have to believe the logo or packaging which is declared by the organic growers. The QR code based system possesses cross checking mechanism from both from supply side and demand side. Moreover, the QR code generation procedure is not incurring any additional cost and extremely user friendly. That's why any authentic organic grower who has smartphone enable with internet access can generate QR code even for every delivery that can be printed on package or as sticker while delivering the items. The model assumes that as the organic products are high value product,, producers should be educated enough to deal with the technological knowledge of QR code.

Conclusion:

Organic farming and consumption which is spreading worldwide and near 170 countries are now practicing this organic farming. Now organic consumption and farming both have relatively a narrow focus and still global food consumption is conventional

commercially agriculture centric. But now the organic movement needs to widen its focus and start to target beyond current territory. Considering this, Organic 3.0 was launched at Biofach Nuremberg 2014. In this strategic journey, we need to find out the bugs in our existing value chain system and eliminate those bugs. Still lack of trust is one of the stupid bugs obstructing to create the interface between consumers and organic growers. Proposed authentication mechanism will eliminate this bug and will establish strong ecosystem where we will find a strong trustworthy relationship between organic farmers and consumers.

References:

- Blake, H. (2011, March 6). One sixth of 'fresh', 'organic' or 'handmade' food is fake. The Telegraph. Retrieved June 4, 2015, from <http://www.telegraph.co.uk/foodanddrink/foodanddrinknews/8364731/One-sixth-of-fresh-organic-or-handmade-food-is-fake.html>
- Chait, J. (n d). Consumer guide: How to shop for real organic products. Retrieved June, 29, 2015, from <http://organic.about.com/od/organic-tips/tp/Shopping-For-Organics-Real-Organic-Products-For-Consumers.htm>
- Grieth, R., & Nesheim, L., (2008). Consumers' willingness to pay for organic products. UCL. Retrieved July 04, 2015, from <http://www.econ.ucla.edu/workshops/papers/econometrics/nesheim.pdf>
- Hohmann, M., Christoph, N., Wachter H., & Holzgrabe, U. (2014). 1H NMR profiling as an approach to differentiate conventionally and organically grown tomatoes. *Journal of Agriculture and Food Chemistry*, 62 (33), 8530–8540.
- Kotler, P., & Keller, K. L. (2012). *Marketing Management*. New Jersey: Prentice Hall.
- Michaelidou, N., & Hassan, L.M. (2008). The role of health consciousness, food safety concern and ethical identity on attitudes and intentions towards organic food. *International Journal of Consumer Studies*, 32(1), 163-170.
- Most organic food in market is fake: food safety official. (2015, March 1). The Hindu. Retrieved July 15, 2015 from <http://www.thehindu.com/news/national/kerala/most-organic-food-in-market-is-fake-food-safety-official/article6947909.ece>
- Mukul, A. Z. A., Afrin, S., & Hassan, M. M. (2013). Factors affecting consumers' perception about organic food and their prevalence in Bangladeshi organic preference. *Journal of Business Management Science*, 1(5), 112-118.
- Parveen, S (2008, March 2). Organic food getting popular as toxic chemicals pose danger. The Daily Star, Retrieved June 27, 2015, from <http://archive.thedailystar.net/newDesign/story.php?nid=25655>
- Perrini, F.S., Castaldo, N.M., & Tencati, A. (2010). The impact of corporate social responsibility associations on trust in organic products marketed by mainstream retailers: a study of Italian consumers. *Business Strategy and the Environment*, 19(8), 512-526.
- Sahota, A. (2015). The world of organic agriculture. statistics and emerging trends 2015. H. Willer & J Lernoud (Eds). FiBL-IFOAM Report. Research Institute of Organic Agriculture (FiBL): Frick, and IFOAM-Organics International: Bonn. Retrieved June 04, 2015, from <https://www.fibl.org/fileadmin/documents/shop/1663-organic-world-2015.pdf>
- Sarker, M. A., & Itohara, Y. (2008). Organic farming and poverty elimination: a suggested model for Bangladesh. *Journal of Organic Systems*, 3(1), 68-79.
- Voon, J. P., Ngui, K. S. & Agrawal, A. (2011). Determinants of willingness to purchase organic food: an exploratory study using structural equation modeling. *International Food and Agribusiness Management Review*, 14(2), 103-120.
- Wilson, J. (2014, December 17). Big food corporations committing massive organic fraud investigation. Natural News. Retrieved June 17, 2015 from http://www.naturalnews.com/048024_organic_industry_factory_farms_food_fraud.html#