

Products brand marketing strategy based on environmental friendliness agricultural innovation: China-Ukraine's case

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Abstract. This research focuses on the influence of modern agricultural innovation on brand strategy, analysing the trends and characteristics of modern agricultural innovation in Ukraine and China, describe differences between countries. The situation in agriculture show – the same background of enterprises can have different results with profit or loss. Therefore, important to establish a commitment of customers to build an agricultural products brand marketing strategy and, as result, increase the profitability of the enterprise. Analyses the development trend of modern agricultural innovation, the characteristics of modern agricultural innovation, and the status of agricultural product brand marketing using literary analysis and case analysis methods, explains the impact of modern agricultural innovation on agricultural product brand marketing, and proposes agricultural product brand marketing strategies for building a good reputation for the brand. A model of the dependence of the purchase intention of consumers of agricultural products on the environmental friendliness of the brand is proposed, which is based on the analysis of the direct effect of public awareness of the environmental friendliness of the brand on the intention of consumers to purchase the products of an agricultural enterprise and the mediating effect of trust in the brand on the intention of the consumer to purchase the products of an agricultural enterprise.

1. Introduction

Since the 1980s, the issue of achieving the goals of sustainable development has been inextricably linked to raising the level of the population's well-being. The creation of marketing strategies and roadmaps for the development of agriculture at the regional, national, and international levels is a cornerstone of the development of Ukraine, especially in times of pandemic and martial law.

According to the KSE Institute, which together with the Ministry of Agrarian Policy and Food of Ukraine conducted an analysis of the state of the agricultural industry because of the full-scale invasion of the Russian Federation [1], the total amount of losses is 4.29 billion US dollars (as of June 14, 2022).



The first “five affected industries” are as follows (millions of US dollars): agricultural land and unharvested harvest of winter crops – 2135; machine equipment – 926.1; stored products – 613; warehouses – 272.4; animal husbandry – 136.4. As is clear from these data, 64% of losses are directly related to the harvest, which, in particular, is exported.

In such conditions, the question of sustainability of the agricultural sector is a national challenge. In response to these challenges, the state proposed the following mechanisms [2]:

- simplifying access to fuel, pesticides and agrochemicals;
- partial guarantee of loans from commercial banks for sowing;
- investment loans for the purchase of agricultural machinery or credit for replenishment of working capital for the purchase of seeds, fertilizers, etc.;
- reduction of tax pressure, simplification and improvement of tax rules for the period of martial law;
- relaxation of requirements for obtaining and checking permission documents (licenses);
- business relocation.

The proposed mechanisms should be taken into account when developing marketing strategies.

The requirements for agricultural enterprises regarding their successful functioning, and as a result, the appropriate level of profitability, are becoming more and more strict, especially in the conditions of war 2022. In addition to the need to comply with the norms of ecological cultivation and production, the need for customer orientation of agricultural enterprises is being formed. Analysis of the agricultural sector of Ukraine and China shows that despite the great differences in the economies of these countries, the agricultural sector occupies the same share in the GDP of the countries (approximately 13%). Among the main trends in the development of modern agricultural marketing innovations, you can pay attention to the following: the scale of modern agriculture, the branding of modern agriculture, the trend of big data in modern agriculture, trends in bio agriculture, trends in agricultural equipment.

Achieving a state of balance between society and the environment is the basis for the sustainable development of agribusiness enterprises and the achievement of a stable positive effect of activity. However, the achievement of stable indicators is possible only if the rational use of natural resources, the improvement of technologies, the introduction of environmentally oriented strategies for the development of agricultural production and innovation, as well as the ability to respond in a timely manner to rapidly changing factors in the external and internal environment. To reduce the negative impact of external factors, it is necessary to form an effective mechanism for managing agribusiness enterprises based on greening with further transfer to a marketing strategy.

It must be stated that at the current stage of development of economic relations, environmentally friendly marketing and branding is a powerful tool for promoting a company to the market. It shows the active position of the company in preserving the environment and taking care of it. An environmentally responsible company finds it easier to maintain a trusting relationship with consumers, increase brand awareness and increase sales profitability. At the same time, it should be noted that there are dishonorable producers who use unclean means of struggle for the consumer.

2. Related works

Ukraine and China support the development trend of the scale of modern agriculture. Since China's poverty alleviation state encourages collective, cooperative, and enterprise operation, and liberalizes the right to manage land, so that land can be effectively used, thus promoting the development of agriculture on a large scale. According to analysts of the Ukrainian Club of Agricultural Business Association, from 2013 to 2019 the number of agricultural enterprises decreased, at the same time total area of agricultural land is increased [3; 4].

In recent years, China and Ukraine have made significant progress in cooperation in various fields, which have been actively covered by the Chinese and Ukrainian media. The results of this cooperation can be assessed and summarized as a transition to a new level. In 2013 the One Belt, One Road initiative was launched, which has been a great success throughout this time, becoming a platform for international cooperation in which all countries take an active part, as well as a popular public good [5].

Agrarian enterprises are one of the most successful areas of trade and economic cooperation between China and Ukraine, the pace of development of which is the most dynamic, and the achievements are the most significant. It was in this industry that there were large Chinese investments, from which mutual benefits were obtained. During the five-year period from 2013 to 2021, grain exports from Ukraine to China increased rapidly from 38 million to 851 million US dollars (Figure 1). A huge amount of Chinese investment has been made in many sectors of Ukraine's agriculture: cultivation, processing, storage, and export. And there are many such successful examples.

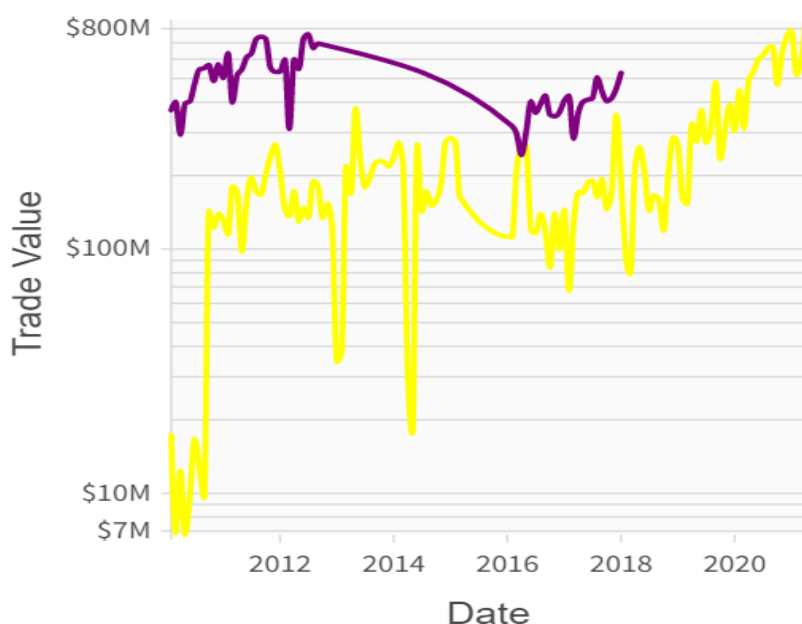


Figure 1. Trade between Ukraine (yellow) and China (violet)
Source: [6]

Chinese companies that have succeeded in Ukraine have common features: localization of management methods and conduct of business, strict compliance with the current legislation of Ukraine, targeting the Chinese and Ukrainian, as well as international markets [7; 8]. Under the influence of online media, people begin to pay attention to health and improve the quality of life, and gradually pay attention to brand quality and food safety. Therefore, the branding of agricultural products has entered a new journey, which is also the inevitable product of consumption upgrading under the development of the new era. The intelligent development of the Internet, smart agriculture, and cloud technology has swept across every industry, which indicates that the level of agricultural information will continue to improve, and the key role will be played by collecting agricultural big data for production and investing in agricultural projects [5].

Agricultural enterprises have a special status in the general economic, social, and environmental situation of the country, characterized as sustainable development [9]. Due to several problems, especially in the environmental sphere, more and more people are paying attention to the state of environmental ecology [10]. Ukraine has a rich heritage of chernozem, which has a positive impact on the possibility of forming environmentally friendly agricultural products. Analyzing the statistics, it should be noted that almost two-thirds of land can be used in the ecological economy, which in the long run can bring positive changes not only in the socio-ethical concept of a marketing strategy but also strengthen market position and improve financial performance. The technical level of modern agricultural equipment is constantly improving, and the limitation of agricultural resources is obvious [11]. Modern agriculture begins to appear artificial intelligence, high efficiency, precision, energy conservation, and service, which makes traditional farming gradually transform to technology [8].

The strategy for promoting agricultural products also has other important applications in the national economy [12], banking [13; 14; 15], and social [16; 17; 18] sectors, creating a green brand and security [19; 20; 21], innovations in education, achieving sustainable development goals [22; 23; 24], etc. All the above factors determine the relevance of this article.

The innovative model of sustainable development of entrepreneurship in agriculture has a greater focus on the realization of the entire potential of agriculture and effective provision of the country's food security process. It will also contribute to the formation of eco-oriented brands in agriculture [25; 26; 27] and includes economic levers, methods of state regulation, normative method of financial support, factors of market infrastructure development, information provision and achievement of social stabilization and ecological balance.

The formation of competitive entrepreneurship in the world market in agriculture and its development according to the scenario of sustainable development requires the reproduction of resource-production potential based on resource-saving and resource-reproducing technologies.

3. Results

The growing demand for high-quality agricultural products determines the intensification of competition in the agricultural market. Competent agro-companies understand the importance of introducing innovations not only in the fields but also in management and marketing. The company's brand development allows it to take a stable position and as a result, increase customer loyalty and increase profitability. The analysis of customer commitment impact on the application of a particular innovation in production, as well as the comparative nature of the two countries (China and Ukraine), showed that the operating environment of agricultural companies of the two countries is significantly different. The environment of the two countries differs in different planes. The strength of China's agro-market is government support and investment. What sways Ukraine – most of the investment comes from other countries (more than 70%) (Analysis of the market of organic products in Ukraine). The Ukrainian agricultural market is attracted by the low cost of local assets. The proof is the capitalization of domestic agro-companies whose shares are quoted on international markets. The competitive advantage of the Ukrainian agricultural industry in the world market is low costs and high land productivity. Also, the demand for agro-products of Ukraine with each city is growing in the world market, especially for organic products (natural selection).

In 2022 Ukraine will lose its position in the European market of organic products by reducing production in the country. Accordingly, the countries of the first and second clusters need to look for options to replace Ukrainian imports today. At the end of 2019, the European Green Course was adopted in the EU, which, in particular, provides for the expansion of land used for organic production. Despite the growing food crisis in the world due to hostilities in Ukraine and blocked exports, the EU remains a supporter of the green course. There is an understanding that without Ukraine it will be difficult to achieve the exchange rate indicators and strategies adopted for it, because Ukrainian organic producers were one of the key suppliers of organic feed in animal husbandry.

As for the weaknesses, a common characteristic is the lack of manufacturability. But it can be noted that every year the growth in the use of innovations increases significantly. An insufficient legislative framework (lack of necessary norms, standards, and instructions) is also the reason for the inhibition of some segments of the agribusiness.

The figures that display the attractiveness and disadvantages of innovation for manufacturers and consumers are shown below (Table 1). Each implemented technology has its own positive effects on consumers and manufacturers. And there are also difficulties in their implementation, for all they are different, but we can distinguish two main ones – the need to attract large capital for the introduction of innovation and the search for qualified employees who can clearly manage it. As for the positive aspects, this is an increase in the quality of products, lower production costs, and, as a result, increased competitiveness. The introduction of innovations affects the brand image in different ways. A larger name for innovation helps to reduce the cost of production as well as increase customer focus, which leads to customer loyalty.

Table 1. Comparing advantages and disadvantages between China and Ukraine

Country	Advantages	Disadvantages
Ukraine	<ul style="list-style-type: none"> • Fertile chernozem soil • Good climatic conditions • The presence of historical experience in agro-business • Attractive area for investors • Growing demand for quality products from Europe 	<ul style="list-style-type: none"> • Invalid legislative framework (lack of necessary norms and standards) • Insufficient support from the government to produce environmentally friendly products • War conditions 2022
China	<ul style="list-style-type: none"> • Abundant agricultural resources • Good climatic conditions • Strong government support • High-quality investment environment • The world’s growing demand for quality products 	<ul style="list-style-type: none"> • Small agricultural enterprises • Low corporate concentration • Lack of core competitiveness agricultural technology • Low return on investment

Source: compiled by authors

Introduction biotechnology has significant potential for all areas of the agriculture sector of the economy and can provide rapid technological and productive progress if farmers are given access to such technologies. The use of biotechnology in agricultural production will also help solve environmental problems associated with the decline of soil fertility, man-made pollution, salinization.

For a more accurate analysis of the impact of modern agricultural innovation on the agricultural products brand marketing strategy, we interviewed 80 respondents in order to rank the importance of innovation for the consumer himself. During the survey, we found out that positioning and introducing innovations influenced the brand image differently, and as a conclusion on the accent buyer’s decision.

After conducting a survey in China and Ukraine, we see that consumer attitudes toward innovation are different. In Ukraine, the preference for biotechnology is given to a smaller number of consumers surveyed, this is probably due to the negative experience with the introduction of GMO products and their prohibitions in the future (Figure 2).

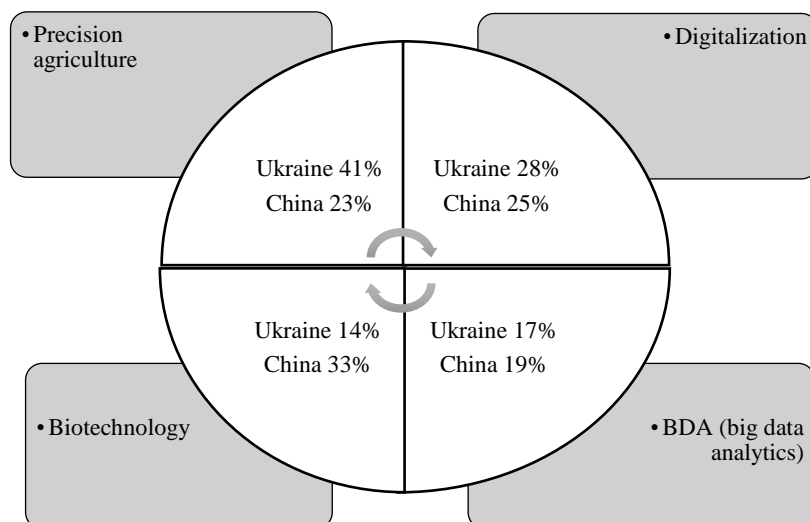


Figure 2. Rating of the importance of innovation for the consumer (Ukraine vs. China)
Source: compiled by authors

For China, this innovation comes to the fore. A peculiarity of China is the statement of the problem of providing food to many people, and the presence or absence of modifications in products is put on the back burner. Ukraine has a large area of agricultural land, which contributes to the provision of food to a relatively small population of Ukraine. For comparison, the area of China equals – 9597000 km², the area of Ukraine – 603628 km². The population of China is 1.393 billion; the population of Ukraine is 41.98 million. Thus, the area of China exceeds the area of Ukraine by 15.89 times and the population by 33.18 times. It turns out that the population density of China is two times higher than in Ukraine, and also in China, there are large land areas that cannot be used for agricultural production (mountains, deserts, northern regions) [24; 25].

Digital technologies are the key to ensuring the necessary growth in world food production without expanding agricultural land and reducing biodiversity. It should be noted that those companies that use modern agricultural innovations are engaged in strengthening the brand's marketing strategy – will have an increasingly stable position due to global warming. Some regions will become unsuitable for agricultural production. Based on the population growth rate, it is possible to predict a population of up to 10 billion by 2050, which will lead to an increase in demand for agricultural products (Table 2). And as an additional factor, it affects the competitiveness of the company, strengthening its marketing strategy and improving the brand position.

Table 2. Comparing analysis of the impact of innovation for consumers and manufacturers

Innovation	Enterprise	Consumers
Precision agriculture	<ul style="list-style-type: none"> + Reduction in the cost of production (seeds, materials, oil is saved). - Need to invest serious money for implement a comprehensive system of precision farming. + Soil properties are improving. + Increased yields and profits. + Agricultural management receives and accumulates a lot of useful information. 	<ul style="list-style-type: none"> + Quality of products become better. + Price for product is reduced. + Reduced negative impact of production on the environment.
Bio-technology	<ul style="list-style-type: none"> + Yield increase. + Reduced stasis of herbicide. + Ban on the use of GMOs in Ukraine. + Easy to put into practice. 	<ul style="list-style-type: none"> + Cost reduction - Possible climate change. - Fears of buyers due to insufficient study of the consequences. + Presentable type of product.
Digitalization	<ul style="list-style-type: none"> + Reduction of production costs. + Possibility to use artificial intelligence. - Difficult to find good specialists in the countryside. 	<ul style="list-style-type: none"> + Easier to control product quality. + Environmentally friendly use.
BDA (big data analytics)	<ul style="list-style-type: none"> + Create strategic value. + Offer new possibilities for service innovation. 	<ul style="list-style-type: none"> + Provides individualization of service. + The ability to provide better customer service and more accurate customer orientation. - Data accumulation and the possibility of its dissemination to third parties.
Implement brand strategy	<ul style="list-style-type: none"> + Differentiated marketing strategies. - Insufficient brand management staff. + Expand brand sales channels. 	<ul style="list-style-type: none"> + Experience the added value of agricultural product brands.

	- Increased management difficulty. + Comprehensively enhance the brand value of agricultural products. - Increased investment in technology and advertising costs.	+ More convenient channels for purchasing products. - Product prices may increase.
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Source: compiled by authors

Positioning the use of biotechnology is more beneficial for the Chinese market, while for Ukraine it will be beneficial to build a brand reputation using innovations such as precision farming and digitalization. This is also connected with the orientation of the Ukrainian market to the European market. The commitment of consumers to the products used by technological innovations is due to increased confidence in the quality of such products, as well as the introduction of new norms and standards for high-quality goods.

Summarizing the well-founded opinions of scientists regarding the factors that influence the brands of agricultural enterprises, it should be noted that scientists focus on the image, environment, and price of agricultural products. However, there are no studies aimed at identifying the relationships between the environmental friendliness of the brand, trust in the brand and the intention to purchase brands of agricultural enterprises.

The results of the test are presented in Table 3 and indicate that the standardized coefficients of the latent variables – public awareness of the environmental friendliness of the brand and trust in the brand were 0.584 and 0.197, respectively.

Table 3. Results of analysis of model coefficients

Influence	Std.	Unstd.	SE	t-value	p-level	Conclusion
Public awareness of a brand's environmental friendliness has a positive effect on trust in the brand.	0,584	0,477	0,045	16,311	0,000	confirmed
Brand trust has a positive effect on purchase intention.	0,708	0,677	0,038	20,466	0,000	confirmed
Public awareness of a brand's environmental friendliness has a positive effect on the intention to make a purchase.	0,197	0,149	0,028	7,420	0,000	confirmed

Source: compiled by authors

Thus, public awareness of environmental sustainability had a significant positive effect on purchase intention and brand trust, and had the greatest effect on brand trust. The standardized coefficient from brand trust to purchase intention was 0.708. As a mediating variable, brand trust can enhance the effect of public environmental awareness on consumers' purchase intention.

4. Conclusion

Comparative analysis of modern agricultural innovation and their impact on agricultural products brand marketing strategy conclude that for each country (for China and Ukraine), different innovations will have different effects on the brand image, and therefore the marketing strategy should be different. Thus, given the development trends of Ukrainian and Chinese enterprises in the agricultural sector of the economy, and given the urgent need to reorient them to innovative development, in our opinion, it seems appropriate to use an innovative approach to marketing strategy. Because the introduction of marketing innovations allows you to adjust management decisions depending on the compatibility of internal and external factors of enterprise development, change the direction of innovative development of the enterprise in accordance with market conditions, and flexibly use competitive advantages of enterprises to strengthen their market position.

For the Ukrainian agricultural sector, some methods and techniques are generally new, and some remain without proper attention in the context of practical application. Ukraine has sufficient scientific potential and relevant knowledge in this area. Therefore, to ensure the effectiveness of the introduction of innovation in the agricultural sector of Ukraine, it is necessary to develop an appropriate one-state policy on the formation of a favorable innovation climate. Ukraine products brand marketing strategy should be based on the technical re-equipment of enterprises and strive to increase customer loyalty by transferring those properties of goods that are important to the client. In general, we can say that the consumer market is loyal to agricultural innovation, subject to the environmental friendliness of production.

The conducted study of the attitude of consumers to the environmental friendliness of the brand showed a significant connection between this indicator and the desire to purchase the product. This indicates the formation of an eco-oriented cluster of consumers concerned about the environment. Accordingly, producers of agricultural products should take this fact into account when forming their brand.

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