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Hedonic Pricing Model of Parboiled Rice

Authors : Roengchai Tansuchat, Wassanai Wattanutchariya, Aree Wiboonpongse

Abstract : Parboiled rice is one of the most important food grains and classified in cereal and cereal product. In 2015, parboiled rice was traded more than 14.34 % of total rice trade. The major parboiled rice export countries are Thailand and India, while many countries in Africa and the Middle East such as Nigeria, South Africa, United Arab Emirates, and Saudi Arabia, are parboiled rice import countries. In the global rice market, parboiled rice pricing differs from white rice pricing because parboiled rice is semi-processing product, (soaking, steaming and drying) which affects to their color and texture. Therefore, parboiled rice export pricing does not depend only on the trade volume, length of grain, and percentage of broken rice or purity but also depend on their rice seed attributes such as color, whiteness, consistency of color and whiteness, and their texture. In addition, the parboiled rice price may depend on the country of origin, and other attributes, such as certification mark, label, packaging, and sales locations. The objectives of this paper are to study the attributes of parboiled rice sold in different countries and to evaluate the relationship between parboiled rice price in different countries and their attributes by using hedonic pricing model. These results are useful for product development, and marketing strategies development. The 141 samples of parboiled rice were collected from 5 major parboiled rice consumption countries, namely Nigeria, South Africa, Saudi Arabia, United Arab Emirates and Spain. The physicochemical properties and optical properties, namely size and shape of seed, colour (L*, a*, and b*), parboiled rice texture (hardness, adhesiveness, cohesiveness, springiness, gumminess, and chewiness), nutrition (moisture, protein, carbohydrate, fat, and ash), amylose, package, country of origin, label are considered as explanatory variables. The results from parboiled rice analysis revealed that most of samples are classified as long grain and slender. The highest average whiteness value is the parboiled rice sold in South Africa. The amylose value analysis shows that most of parboiled rice is non-glutinous rice, classified in intermediate amylose content range, and the maximum value was found in United Arab Emirates. The hedonic pricing model showed that size and shape are the key factors to determine parboiled rice price statistically significant. In parts of colour, brightness value (L*) and red-green value (a*) are statistically significant, but the yellow-blue value (b*) is insignificant. In addition, the texture attributes that significantly affect to the parboiled rice price are hardness, adhesiveness, cohesiveness, and gumminess. The findings could help both parboiled rice miller, exporter and retailers formulate better production and marketing strategies by focusing on these attributes.

Keywords : hedonic pricing model, optical properties, parboiled rice, physicochemical properties
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