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Consumer preferences regarding quality rice in Thailand

Do changing lifestyles of the urbanized population change the purchase decision for rice?

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ABSTRACT

A consumer survey in the grater area of Bangkok based on Best-Worst Scaling derives the rice preference structure of the urbanized population with regard to product and process attributes in the light of changing retail and production systems as well as increasingly globalized diets. Health and safety as well as a soft texture and Thai origin are stated as the most important purchase criteria for rice. Super- and Hypermarkets are revealed to occupy the biggest share of the sample's rice purchase channels. The confirmed valuation of certain attributes of Thailand's premium rice Hom Mali suggests to include quality concerns in any policy or program for the Thai rice market to come. The preference development towards sustainable and healthy products is concluded to have potential for communication strategies for certain consumer segments on the one hand and to impose additional requirements to downstream supply chains actors on the other hand. Vertical integration which is sensitive towards smallholder needs and information networks including all supply chain partners are recommended to be able to meet the preferences of Thailand's high quality consumer segment and to trigger sustainable agricultural practices. The successful implementation is suggested to depend on the incorporation of modern retail chains which increasingly hold a key role in Thai supply chains.

CONTENT

1 PROBLEM BACKGROUND AND OBJECTIVE

Rice is the primary staple crop for more than half of the world's population and accounts for estimated 20% of the world's daily caloric intake (USDA 2014; IRRI 2013). Around 90% of the world's rice production and consumption takes place within Asia. Therefore, meeting rice demand in terms of quantity is an important step to poverty alleviation, national food security and economic development (FAO 2004).

Thailand has been the world largest rice exporter for the last 30 years with a share of 30% of rice trade volumes. It has been referred to as "kitchen of the world" because the country moved beyond self-sufficiency and thereby contributes to feeding a growing population within and outside Asia (FAO 2011). A rice pledging scheme, in place between 2011 and 2014 created artificially higher prices for domestic consumed and export rice from Thailand. The lead trade position got lost[1] and farmers had an incentive to target their production to nothing but quantity (GFK 2013; SEIDEL & ADAM 2013; THAIGOV 2013).

But in order to ensure long-term economic viability it becomes important to not only focus on rice productivity but also on increasing demands towards the quality of the produce (UNNEVEHR et al. 1992). Thailand, like many Asian countries shows rapid growth in prosperity and urbanization levels which lead to diversifications of the diet composition, of consumption habits as well as to a growing demand for high quality products among the increasing middle and upper class. Rice consumption in particular is even beginning to decrease among affluent consumers due to a westernization of their diets (TIMMER 2012; KELLY et al. 2010; PINGALI 2006). The shopping behaviour shifts away from wet markets to supermarkets (GORTON et al. 2011; SCHAFFNER et al. 2005). The growing share of modern retail chains has a higher sensitivity for high income consumer demands and is able to translate those desires into standardized requirements which have to be met by the downward supply chain (GORTON et al. 2011; SCHIPPMANN & QUAIM 2011; REARDON et al. 2004).

On the one hand the rapid transformation of diets and the changes in food systems at all levels (production, processing and distribution/retail) pose a number of additional challenges to food security, food policy, smallholder welfare and development policy priorities. On the other hand it opens opportunities for a market orientation throughout the

[1] Price increase of 40-50% and export decrease of 40% between 2011 and 2013 (FAOSTAT 2014; SEIDEL & ADAM 2013).

supply chain which basis is formed by an understanding of preferences of the respective consumer segments.

What influences the rice purchase decision of urbanized consumers of the upper-middle income country of Thailand, classical quality attributes or more recent developed product trends? A consumer survey in the greater area of Bangkok meets the need for an up to date insight into current and possible future demand trends with regard to the nation's staple crop. Metropolitan areas are acknowledged to hold a leading role in food and nutrition transformations for the rest of a country (PINGALI 2006; SILAYOI & SPEECE 2007) and urban demand is predicted to play a dominant role for the future of Thailand (GFK 2013). An investigation of the relative importance of different quality criteria and preferences can allow inferences with respect to the acceptance of product alterations and innovations and subsequently lead to conclusions for potentials at the production and retail stage.

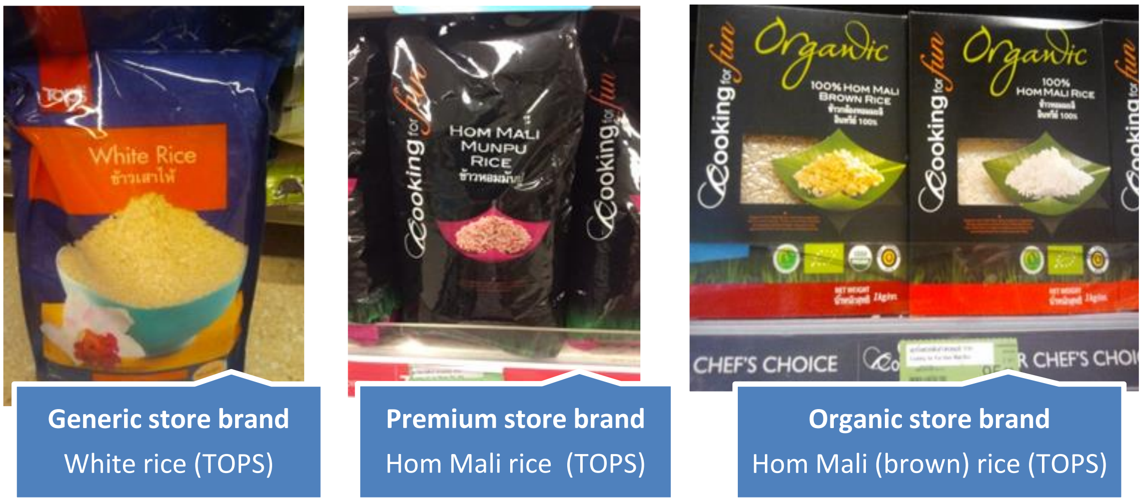
In cooperation with the *Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH* and in the framework of its *Better Rice Initiative Asia (BRIA)*, the research contributes to the basis for demand-oriented, nutrition sensitive interventions that shall ensure the sustainability of value chain optimizations, which aim at improving the rice sector and rice-based nutrition in Southeast Asia.

2 RICE CONSUMPTION IN THE LIGHT OF A CHANGING RETAIL STRUCTURE

Roughly half of Thailand's overall rice supply is consumed domestically (40% according to FAOSTAT 2014). The annual per capita consumption is ranging from 80 kg for city households to around 115 kg for rural households and up to 125 kg for low-income households (USDA 2014). The urban population of the greater area of Bangkok spends around 24% of their household expenditures on food and beverages (NSO 2011). Cereals, mainly rice, are reported to contribute about 47% (urban 38%, rural 51%) to the Thai Dietary Composition (FAOSTAT 2014) but are relatively cheap compared to other food items (see food price index by MINISTRY OF COMMERCE 2013). Despite a diversification towards more meat and horticultural products and a growing wheat consumption (PINGALI 2006; USDA 2014), rice is rooted deeply in Thailand's diet and culture and acknowledged as an energy source of high nutritional value (KWANCHAI 2001; KELLY et al. 2010).

With a population of around 67 million and a GDP of 5,480 US dollars (growth rate 6.5%) (WORLDBANK 2013; FAOSTAT 2014) Thailand is a country where rapid economic and lifestyle transitions have taken place in mutual reinforcement with a "supermarket revolution" (REARDON et al. 2010; ISVILANONDA 2005). As a result, for the growing urban population the food choice increasingly takes place in a context "where availability is substantially influenced by the food industry and food retailer" (KEARNEY 2010) as well as a growing spread of fast food chains, both foreign and domestic (PINGALI 2006).

At the expense of traditional retail the modern formats gained high popularity[2] by providing standardized quality at highly competitive prices (GORTON et al. 2011 JONGADSAYAKUL 2012). Strategies of highly differentiated store concepts, product ranges and ready-to-eat counters and buffets address the needs of the diverse consumer segments. Moreover opening hours, parking areas, loyalty programs and delivery services increase their appeal (JONGADSAYAKUL 2012). A range of rice varieties are offered under a trilogy of private store brands: A generic product at the entry-price level accompanied by a premium product and an organic version.



Source: own pictures taken in May 2014 at TOPS, Bangkok, Thailand.

A number of labels and slogans promoting safety, health, sustainability, organic agriculture, origin, sensual aspects, packaging issues and certain lifestyles can be found to characterize the current on-package communication for rice. Health issues include the promotion of vitamin and mineral contents, the prevention of several diseases and the absence of diverse toxic residuals. Plenty safety labels inform on international as well as domestic standards. Some products even employ cause-related marketing.

[2] Market share of approximately 65% in 2012.

Rice packaging communication examples from different retail chains

Source: own pictures taken in May 2014 at different markets in Bangkok, Thailand.

3 RICE PREFERENCES – CLASSICAL AND TRENDS

Two areas of characteristics can be differentiated in order to define rice quality and its current meaning for Thai consumers.

The first group are “classical” quality characteristics that predominantly refer to physical and chemical aspects which determine shape, texture and sensual properties like taste and scent of rice. It can be noted that mostly non-glutinous, long grain rice in form of Thailand’s traditional fragrant variety “Hom Mali” is addressed as high quality produce. Many of the classical rice attributes are influenced by the milling practices as well as the variety. The Thai rice standard (B.E. 2540) of the MINISTRY OF COMMERCE (1997) informs on a range of allowances for negative impacts that determine quality categories.

The second group addresses reported trends which refer to consumption transitions and preferences mainly due to growth in prosperity and urbanization. Different studies from Asia and Thailand in particular determine food safety (GORTON et al. 2011; LIPPE et al. 2010), health or nutritional value aspects (KELLY et al. 2010, GFK 2013), packaging (GFK 2013) and the consideration of origin (SEETISARN 2011; DE VRIES 2013) to represent recent and most important developments among the urbanised Thai population. The awareness for brands as well as sustainability is reported to be still low but some indications for an increase of these issues exist (DE VRIES 2013; GFK 2013).

4 SURVEY: RICE PURCHASE DECISION

In order to test the relative importance of 20 rice attributes for the rice purchase decision across classical and trend characteristics, a street survey in the grater area of Bangkok was conducted between April and May 2014. The method of *Best-Worst Scaling* (BWS)

(LOUVIERE et al. 2013) forced the respondents to make choices that indicated the most and least important attribute among 15 choice sets, each displaying 4 different attributes. For the total sample of 300 respondents which represent the socio demographic structure of the urban population to a sufficient degree, the aggregated analysis revealed health, safety, origin and texture to be most influencing:

Position	Rice attribute	Importance for purchase decision Average rescaled Score (0-100)
1	high vitamin and mineral content	11.218
2	Thai origin	10.926
3	free of chemical residuals (pesticides)	10.811
4	free of toxic metals (arsenic, etc.)	9.978
5	smooth texture after cooking	9.569
6	whole grains without damages	6.521
7	high fiber content	5.971
8	environment friendly production	5.947
9	favourite brand	4.743
10	organic	4.046
11	volume expansion	3.934
12	honest price for producers	3.392
13	long and slender grains	2.514
14	long shelf life	2.506
15	nice fragrance after cooking	2.126
16	short cooking time	1.948
17	white colour of the uncooked grain	1.509
18	low price	0.931
19	small packaging of 5 kg or less	0.734
20	sweet taste	0.677

Source: Own depiction, analysis via Hierarchical Bayes with Sawtooth Software.

In a second step a segmentation of consumers via Latent class analysis is supposed to account for differences across consumers. Even though the within class rankings differ only slightly from the aggregate level and emphasize its relevance, the relative evaluation of certain attributes between classes discriminates three consumer groups from each other:

36.5% trust in Thai quality and brands

- Thai origin and brands of outstanding importance
- smooth texture, whole grains and nutritional value as quality parameters
- sustainability and safety relatively unimportant
  - middle age (>80% between 24 and 45)
  - middle to higher income
  - mixed educational levels

23.5% value buyer, rice as a staple crop

- most price sensitive
- volume expansion and shelf life relatively important
- favor a number of classical quality parameters
  - young consumers (>60% between 16 and 35)
  - lower to middle income
  - mixed educational levels

40.0% health and sustainability lovers

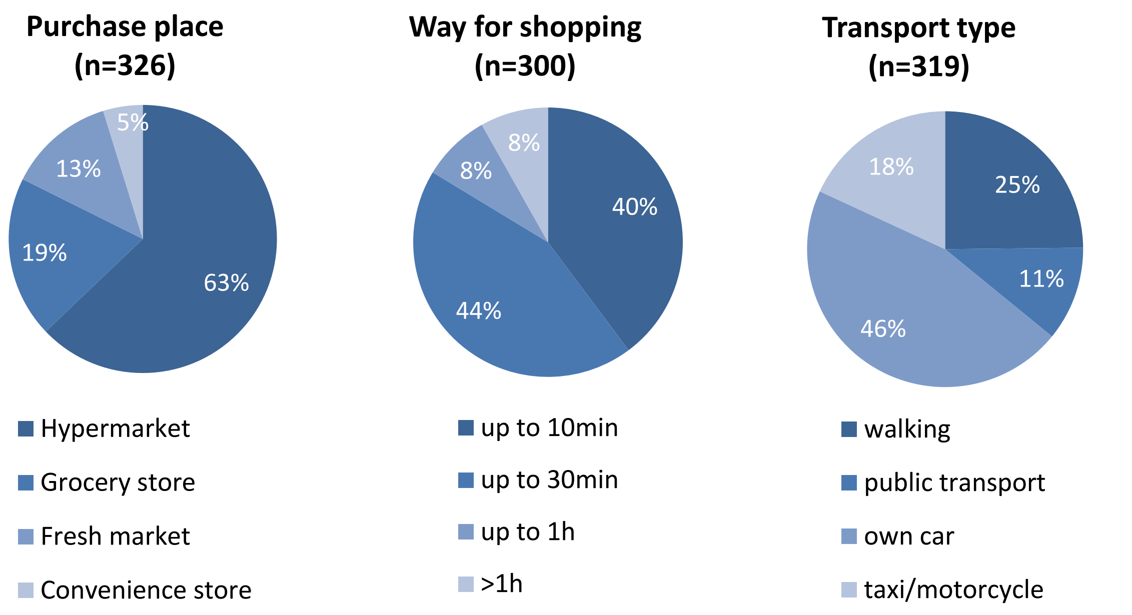
- highly concerned with vitamins/minerals, fiber and absence of residuals
- highest scores for environment friendly production and organic rice
- Thai origin and texture as quality parameters
- price and brand relatively unimportant
  - mixed age and educational levels
  - highest prevalence of women
  - middle to higher income

Source: Own depiction, analysis via Latent Class with Sawtooth Software.

The preferences on the aggregated as well as on the segment level are in line with current market observations and reports on a health paradigm to evolve which targets positive aspects of food. This awareness is not only associated with a sufficient supply with nutrients but also the prevention of diet related chronic diseases later in life (KONSULWAT 2002; KEARNEY 2010). Thus, the nutritional value as well as the safety of rice are assigned with a high awareness among urban Thai consumers. Regarding classical quality attributes the soft texture of non-glutinous rice is the one outstanding attribute indicating higher quality to the consumers.

The segmentation shows a differing evaluation especially regarding a Thai origin and branded rice products across consumers. Those who highly prefer brands or a Thai origin care relatively less about other attributes (e.g. safety), possibly because they trust these signals to be quality guarantees. Furthermore, the degree of price sensitivity discriminates different consumer groups, with a higher sensitivity being related to higher importance of the value attributes of rice as a staple crop and a lower importance of sustainability related attributes.

The shopping habits of the respondents confirm the modern retail channels to have gained the highest share in the choice of purchase places for rice. The high density allows the way for shopping to be short even though a car or taxi is affordable for most of the urban consumers:



5 VALUE CHAIN IMPLICATIONS

The research at hand on consumer preferences gives important insights into a positive attitude towards healthy and sustainable consumption patterns of the growing urbanized population of Thailand with regard to the staple crop rice. Preference statements are acknowledged to be a good predictor for behavioural intentions and subsequent purchase decisions (LANGEN 2013; AYZEN 1991). Yet, the actual purchase behaviour can be influenced by a number of exogenous variables or perceptual biases as well as different decision making strategies which can lead to an attitude-behaviour gap (LANGEN 2013; VERMEIER & VERBEKE 2006). Consequently, the importance scores should foremost be interpreted as indicator for a rising awareness and benefit for those who can afford the premiums. Nevertheless, the total sample of urban consumers was found to be able to make concrete differentiations regarding rice preferences through their choices. Thus, quality concerns, especially the valuation of Thailand’s Hom Mali rice, on both, the export and the domestic market, should be part of any future policy or program to come (in line with GFK 2013). The observed preference transitions must be considered within the framework of changing retail structures which affect the entire food economy from farm to fork (KEARNEY 2010).

On the demand side and for low income groups in developing and emerging countries a “supermarketization” often triggers a dual burden which describes the paradox situation of a simultaneous lack in micronutrients (malnutrition) and oversupply with energy (obesity) (PINGALI 2006; KEARNEY 2010; KONSULWAT 2002). Through their choices, the urban consumers of Thailand show to have already reached a tipping point, where they become aware of the adverse health effect of a globalized diet (KELLY et al. 2010) and fear residuals due to a number of food safety incidents with brought media coverage (e.g. KANTAMATURAPOJ 2013). Across preference segments and socio-demographics, they highly value nutritional, health, safety or environmental aspects as well as a Thai origin and state a low price to be a minor concern for their rice purchase. These are food aspects, which play major roles nowadays in the marketing within western societies. An effective communication through the establishment of reliable labelling and certification could help the consumers in making a food choice which matches their preferences (LIPPE et al. 2010). Currently an uncontrolled flood of labels hinders a functioning signalling mechanism in Thailand (ROITNER-SCHOBESBERGER et al. 2008; ANANVORANICH 2012).

For the supply side the developments can impose additional challenges especially for the persistent high number of small scale farmers which have to comply with the new quality demands (BOSELIE et.al 2003; GAIHA & THAPA 2007; REARDON et al. 2010). Despite the fact that Thai rice farmers are reported to have overcome the phase and threats of a subsistence agriculture, they now face a competitive market economy with the tasks of cost reductions, quality and quantity improvements and supply diversifications (SEIDEL & ADAM 2013). But the findings also trigger and justify good agricultural (sustainable) practices which avoid an overuse of chemical fertilizers and pesticides. As modern retail chains could be observed to react rapidly to changes in different consumer segment preferences and even boost consumption developments (e.g. KANTAMATURAPOJ 2013), they are likely to make these safety attributes to basis standards fulfilled through vertical integration. Contract farming and long term relationships with the modern retail chains are acknowledged to be the prerequisite in order to use the potential of the knowledge on consumer demands and to enable smallholders to participate in the dynamic new value chains (BOSELIE et al. 2003; GAIHA & THAPA 2007). Important in ensuring mutually beneficial partnerships is a macropolicy framework that protects the economic interests of the farmers (BOSELIE et al. 2003; GAIHA & THAPA 2007; REARDON et al. 2010). The supply of standardized food may not take on the form of a multitude of expensive certification processes which the farmers bear (ANANVORANICH 2012; KANTAMATURAPOJ 2013). Thus, the supermarket chains should be addressed through policy or programs in their role of gatekeepers. They increasingly hold the position to influence customer responses towards innovative products by deciding on product ranges (availability) and positioning (visibility) (KANTAMATURAPOJ 2013). Regulation of them besides cooperations can become crucial. Moreover the direct linkage of the farmers as well as the processing stages (milling) to the market by providing information networks that also include consumer information might improve the farmers' position in negotiations regarding trading relations (BOSELIE et al. 2003) or encourage to find marketing niches for special values. An accurate targeting of niche markets could also help the shrinking number of traditional retail stores to face the new competitive retail environment (KELLY et al. 2014; KANTAMATURAPOJ 2013).

Summarizing and considering the preference rankings to be obtained based on stated preferences about the relative importance of rice attributes dependant on the choice at hand they still provide important information for the rice market in Thailand. They can help to prepare the market actors for supply chain requirements that might evolve in the future as well as to identify possible opportunities. A response to positive and negative effects of the Thai retail developments need to be handled as priority due to their special pace (KELLY et al. 2014). The high awareness of the consumers for health and safety is an opportunity for diet as well as environmental campaigns promoting traditional diets and sustainable rice cultivation. The combination of financial and technical support with demand sensitive capacity building for the farmers can build a basis for a transformation of the supply chain that enables Thailand to cope with increasing international competition and ecological burdens. The convergence of western and Thai preference structures makes efforts to match demand and supply beneficial for the production for the domestic as well as the export market. On the domestic market the incorporation of retailers in programs for the rice sector will be a key factor for its success. The results more specific suggest in the short term, the demand for healthy rice to be more likely to grow than for sustainable rice.

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