

IQTISODIYOT
va
TARAQQIYOT

Ijtimoiy, iqtisodiy, siyosiy, ilmiy, ommabop jurnal



- 08.00.01 Iqtisodiyot nazariyasi
- 08.00.02 Makroiqtisodiyot
- 08.00.03 Sanoat iqtisodiyoti
- 08.00.04 Qishloq xo'jaligi iqtisodiyoti
- 08.00.05 Xizmat ko'rsatish tarmoqlari iqtisodiyoti
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- 08.00.15 Tadbirkorlik va kichik biznes iqtisodiyoti
- 08.00.16 Raqamli iqtisodiyot va xalqaro raqamli integratsiya
- 08.00.17 Turizm va mehmonxona faoliyati



Yashil

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QUALITATIVE FUNCTIONAL DEVELOPMENT IN INDUSTRIAL PRODUCTION

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Abstract: Logistics in agriculture is gaining more importance as it deals mainly with the smooth supply of food and other agricultural products from the producer to the final consumer. It is important to take account of the principles that apply in other subsystems of logistics, the right merchandise in the right place, intact, in the agreed amount on the agreed place at the lowest possible cost. Scope of agricultural supply chains and logistics are unlike the supply chain and logistics in the production currently under-researched. The aim of this research is to review the definitions in an agriculture logistics and to provide a comprehensive definition. Using dynamic and heterogeneous consumers demand regularly includes different supply chain types with their different perspectives. In the case of agricultural products, consumers just request for a qualitative product (Parasuraman et al., 1985), and only recently for discrepancy in quality levels, whereas producers tend to be interested in restraining biological variation (Grunert, 2003). Sensorial aspects, but also health and the place of origin are also significant when selecting agri-related products. In the case of poultry meat, constraints that affect quality are multifaceted and can be controlled. This study examines some of the methodological aspects of agricultural food production and related possibilities by applying Qualitative Function Deployment (QFD). This study applies related techniques in order to create a methodological aspects of the quality function deployment in order to create a product and service design in the agricultural production.

Annotatsiya: qishloq xo'jaligida logistika ahamiyati ortib bormoqda, chunki u asosan oziq-ovqat va boshqa qishloq xo'jaligi mahsulotlarini ishlab chiqaruvchidan to yakuniy iste'molchigacha uzluksiz yetkazib berish bilan shug'ullanadi. Logistikaning boshqa quyi tizimlarida qo'llaniladigan printsiplarni hisobga olish muhim, jumladan, tovarni kerakli joyda, sifati buzilmagan holda, kelishilgan miqdorda arzon narxda etkazib berishi muhim ahamiyatga ega. Qishloq xo'jaligini mahsulotlarini etkazib berish zanjirlari va logistika ko'lamini hozirda yetarlicha o'rganilmagan, bois ishlab chiqarishdagi ta'minot zanjiri logistikadan farq qiladi. Ushbu tadqiqotning maqsadi qishloq xo'jaligi logistikasidagi ta'riflarni ko'rib chiqish va keng qamrovli tahlil qilishdir. Faol iste'molchilar talabidan foydalanish muntazam ravishda turli nuqtai nazarga ega bo'lgan ta'minot zanjirilarini o'z ichiga oladi. Qishloq xo'jaligi mahsulotlariga kelsak, iste'molchilar faqat sifatli mahsulotni so'rashadi va sifat darajasidagi nomuvofiqlik uchun, ishlab chiqaruvchilar biologik o'zgaruvchanlikni cheklashdan manfaatdor (Grunert, 2003). Qishloq xo'jaligi mahsulotlarini tanlashda hissiy jihatlar, shuningdek, sog'liq va kelib chiqish joyi ham muhimdir. Masalan, parranda go'shti holatida sifatga ta'sir qiluvchi cheklovlar ko'p qirrali bo'lib, ularni nazorat qilish mumkin. Ushbu tadqiqot qishloq xo'jaligida oziq-ovqat mahsulotlarini ishlab chiqarishning ba'zi uslubiy jihatlarini va tegishli imkoniyatlarni sifatli funksiyani joylashtirishni (QFD) qo'llash orqali o'rganadi. Ushbu maqolada qishloq xo'jaligi ishlab chiqarishida mahsulot va xizmatlar dizaynini yaratish uchun sifat funksiyasini rivojlantirishning uslubiy jihatlarini yaratish uchun tegishli usullarni qo'llash ilgari suriladi.

Аннотация: логистика в сельском хозяйстве приобретает все большее значение, так как занимается в основном бесперебойной поставкой продуктов питания и другой сельскохозяйственной продукции от производителя к конечному потребителю. Важно учитывать принципы, действующие в других подсистемах логистики, нужный товар в нужном месте, в целости, в оговоренном количестве в оговоренном месте по минимально возможной цене. Сфера применения сельскохозяйственных цепочек поставок и логистики в отличие от цепочек поставок и логистики в производстве в настоящее время недостаточно изучена. Целью данного исследования является обзор определенных в сельскохозяйственной логистике и предоставление всеобъемлющего определения. Использование динамичного и разнородного потребительского спроса регулярно включает в себя различные типы цепочек поставок с их различными перспективами. В случае с сельскохозяйственной продукцией потребители запрашивают только качественный продукт (Parasuraman et al., 1985) и лишь в последнее время – несоответствие уровней качества, в то время как производители, как правило, заинтересованы в сдерживании биологического разнообразия (Grunert, 2003). Органолептические аспекты, а также здоровье и место происхождения также важны при выборе сельскохозяйственных продуктов. В случае с мясом птицы ограничения, влияющие на качество, многогранны и поддаются контролю. В этом исследовании рассматриваются некоторые методологические аспекты сельскохозяйственного производства продуктов питания и связанные с ними возможности с применением качественного развертывания функций (QFD). В этом исследовании применяются соответствующие методы для создания методологических аспектов развертывания функции качества для создания дизайна продуктов и услуг в сельскохозяйственном производстве.



INTRODUCTION

Introduction In The Art of War, published in France in 1836, Baron Antoine Henri de Jomini (de Jomini, 2007) defined the word “logistics” and defined it as “Logistics comprises the means and provisions which work out the policies of strategy and tactics. Strategy chooses where to act; logistics takes the troops to this point.” At the time, “strategy” was military strategy and “flows” recognized all goods, from food to weaponry considered to be transported to, or close to, the battlefield. In our current situation, logistics not only becomes a major concern in any military operation, but has also appeared as a major tool in company management. Based on the development, in October 1998 the Council of Supply Chain Management (CSCMP) announced the subsequent description, which proclaims that logistics management was exclusively a part of SCM: Logistics is considered as a part of the supply chain development that plans, implements and controls an capable flow of goods and warehousing, services and relevant information from the point of origin to the point of consumption (CSCMP, 2013). Zhang and Li (2012) defined agri-food supply chain as a network of business enterprises that are referred to food, through which the food is “moving” from production to consumption, comprising the activities of pre-production and consumption. But where in this definition lies the logistics? There are a number of modifications in agri-food industry focusing on a re-orientation of food companies in terms of their roles, activities as well as strategies. For instance, demand and supply are no longer limited to nations or regions but have converted into international processes. Moreover, product assortments have extended expressively and market requirements on product quality, traceability, delivery services and sustainability are still growing. The EU’s common agricultural policy focuses on quality not quantity. It helps farmers not just to produce food, but also to protect the environment, improve animal welfare and sustain viable rural communities. The research on agricultural logistics is of great significance to speeding up the process of agriculture modernization and improving the competition ability of agriculture (Qi, Yang, Tang, 2008).

Quality function deployment (QFD) is a general notion that delivers a means of interpreting customer necessities into the suitable technical requirements for each phase of product development and production (i.e., marketing strategies, planning, product design and engineering, prototype evaluation, production process development, production, sales). QFD was established in Japan in 1972 as a design instrument for the expansion of electronics, computer software, defence and health care. More lately it is also being practical for agricultural product development. In this paper, it is tried to analyze a literature review of QFD relied on the above-mentioned position bank. This paper grants a literature review on the subject of the request of quality function deployment (QFD) in the agricultural industry. This review is prolonged with a thorough account of the approaches complicated in the practice of QFD within agricultural companies. The literature about application of QFD in the agricultural industry is limited. The few findings that have been published claim that QFD is a appropriate and encouraging application to simplify the food product development process. On the other hand, it has been stated that QFD still wants a lot of expansion and accepting before the method can be applied (Costa, Dekker, & Jongen, 2001; Dekker & Linnemann, 1998). In spite of the claimed benefits of QFD for the expansion of food products only limited examples are recognized. Temporarily, many authors have promoted it as a preparation instrument to benefit in the management of food product/process development, subject to some variation to satisfy the specific requirements of the agricultural industry. To become a widely practical methodology in the agricultural industry, more knowledge is compulsory on associations between needs (like sensory attributes) and technological measurements, to fulfil these consumer needs properly (Luning et al., 2002). Costa et al. (2001) made a comprehensive assessment of the occasions and bottlenecks for QFD requests in the agricultural industry.

Understanding transport segments in smallholder agriculture

The organization of the first stage of transport is critically important to the performance of the whole agricultural supply chain – from farmer to final consumer. This affects not only the immediate transport costs from farm to the primary roads, but also the profitability of various enterprises along the supply chain, starting with the farmers. Transport efficiency is also very important for improving financial and time costs in the delivery of inputs and produce and in reducing post-harvest losses. Many crops such as tomatoes, vegetables, soft fruit, green vegetables, and even crops like onions can be bruised and lose value as they are mishandled and transported over rough roads. Other crops will experience value decline through time delays in getting to the market.

There is an emerging structure to the way transport services for smallholder agriculture is organized. Typically, it involves several transport segments each with its own characteristics, distinct challenges and associated costs. They can be described as follows:

- A primary transport (first mile) segment from the farm to a collection/consolidation point typically found at the key junctions of a motorable (low volume) road. Key actors in the transport system are the farmers who use their own (household) means of transport such as headloading/backloading, animal carts, bicycles and sometimes motorcycles.



- An intermediate transport segment, that is, from the primary collection points to an intermediate trader's market. Key actors in this segment are the better off farmers (also doubling up as traders) and transporters.
- Transport to big urban markets through main arterial road networks. Key actors here are transporters and traders.

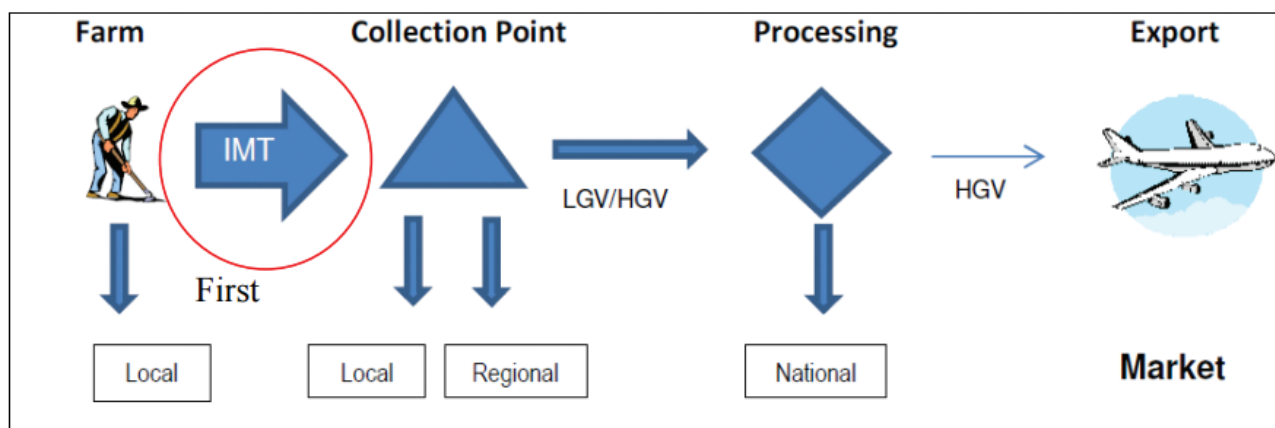


Figure 1: Structure of emerging agricultural value chains

Source: Agricultural Logistics Management, 2014

METHODOLOGY

The QFD method, by concentrating on the interactions between the different phases of the production process, encourages communication along the supply chain besides between the chain members (Benner et al., 2003). It supports using active and diverse clients demand for food quality. In our study, we apply the QFD technique for the expansion of poultry meat quality, from a supply chain standpoint. The structure process started with the House of Quality (HoQ) or Product Planning Matrix. The procedure method contains of essential the house proportions: the consumer needs (the whats) as well as the position of the consumer essentials on the left side, the treating features necessities (the hows) on the top, and the correlation matrix where the status rankings for each how (the how much) are to be defined (Benner et al., 2003). The consumer wants were obtained by expending our own capability of consumer research, while the comparative position were strong-minded over a choice experiment, requesting the consumer when the poultry meat was selected at the point of purchase. Respondents were asked to choose between two hypothetical cuts of chicken breast with a different combination of the six product attributes. Then, the preference data (elicitation of attribute attendance) were investigated (Zanoli et al., 2013) by asking the consumers to self declare the frequency of the selection of each quality cue during their choice experiment. Respondents were asked to designate on a 9-point Likert scale (never = 1 to always = 9) how much they touched they attended to each attribute in their sequence of responses. The normalized average value of each attribute is reported in the Product Weight (PW) column of the HoQ (Fig. 1, left side) (Vatthanakul et al., 2010). shelves (Pink -red/Pink -yellow); Fat: the yellow fat presence on the chicken breast sold (Visible/Invisible);

Farming system: the set of farming techniques accepted to increase the chickens (Organic/Conventional); Animal welfare: chance for the chickens to have outdoor access (outdoor access/no-outdoor access); Origin: the country of origin for the poultry ; Price: selling price in kg. The management of farming processes is presently speedily altering to a system perspective assimilating the surroundings in terms of environmental impact, public entities and documentation of quality and growing conditions. The latest advances in Information and Communication Technologies and the predominant lack of interoperability in the sphere of agricultural products, implements other features which contributes to the development of international standard for securing a more real communication between these entities. Therefore the concept of QFD is presented to interpret customer wants or needs into design requirements consequently into appearances of parts, then to practice plans and eventually in to production requirements. With the purpose of creating these relationships, QFD typically necessitates four matrices: product planning, parts planning, process planning and production planning matrices, respectively. Four phases of matrices (Figure2) are applied to transmit the input from the customer The product planning matrix similarly termed the house of quality (HOQ), translates customer need into product design requirements and it classify customer requirements (CRs) and begin priorities of design requirements (DRs) to fulfill the CRs (Hauser and Clausing, 1988).

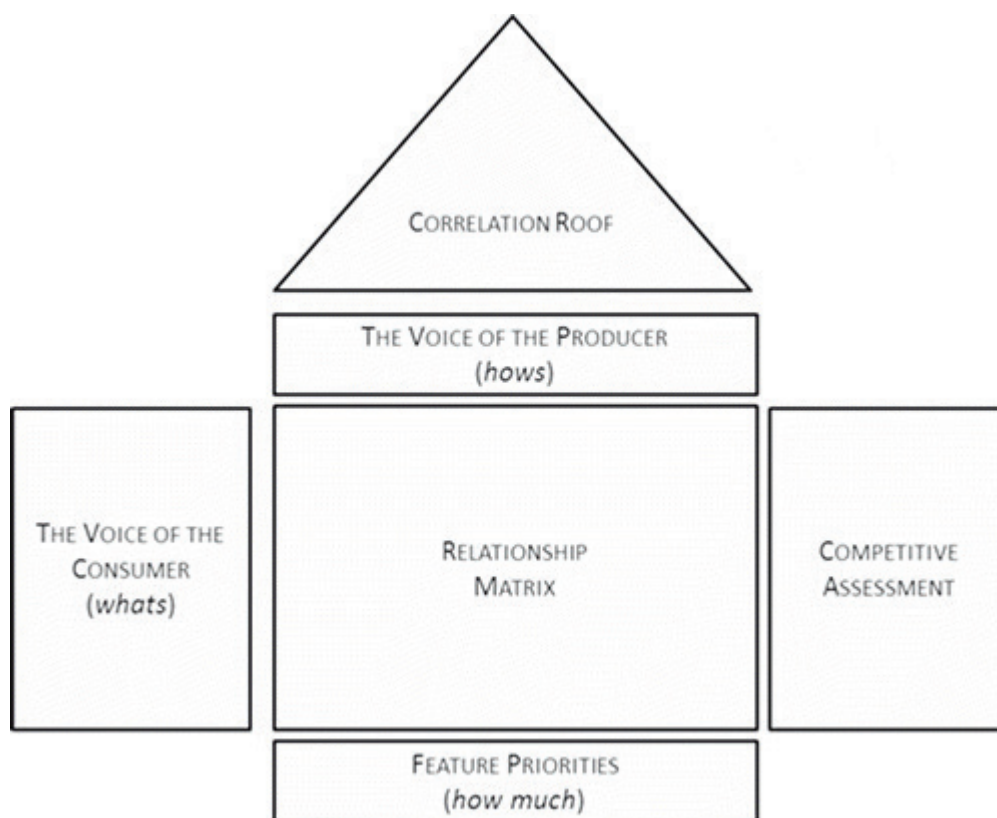


Figure 1: QFD Functions

Source: Benner et al., 2019

There are four stages in construction an HOQ, defines as follows:

Step 1: CRs are also known as the voice of the customers. Customer needs can be collected by focus groups and articulated in customer own phrase. Quality deployment is comprised in this step to simplify customer specifications;

Step 2: Drs are also considered as the design needs or engineering specifications. Product features are defined in the language of the engineer; referred to consumer as voice of the strategy team. The Drs are applied to designate how well the project team has fulfilled the demands from the customers;

Step 3. Relationship matrixes. The relationship matrix designates how much each DR disturbs each CR. The rating scale can be organized in the score (5; 3; 1) or signs (α strong; ö Medium; Λ Weak). A cell (I, j) in the relation matrix is allocated (α strong = 5; ö Medium = 3; Λ Weak = 1) to notice a strong, medium or weak connection between the I th CR and j th DR, correspondingly;

Step 4. Significances of the DR. the results found from scheduled stages are applied to show a final rank order of DRs. The entire and comparative weighting of CRs and the relation ratings. For each DR, the complete weighting rating is calculated by the following relation.

$$AI_j = \sum_{i=1}^m R_{ij} W_i, 1 \leq m \quad (1)$$

The AI_j is absolute weight age rating of DR_j , $j = 1 \dots n$, W_i = Degree of weightage of R_i , $i = 1 \dots m$, and R_{ij} = Relationship rating,, representing the strength of the relation between CR_i and DR_j . The absolute weightage rating can be translated in to the relative weightage rating, RI_j , by.

$$R_j = AI_j / \sum_{i=1}^m AI_k, 1 \leq n \quad (2)$$

CONCLUSION

A quality function deployment can be positively used in the design and collection of agricultural product along with market analysis. From this perspective, it can be concluded that, major group of farmers can utilize different techniques in the case of supporting production of agricultural products. At the same time, there should be a strong focus on determinants of both whats and hows.



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