CONSUMER´S PREFERENCES FOR NEWNESS AND INNOVATION IN FRESH BEEF IN ARGENTINE

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ABSTRACT

The livestock agricultural policy is a relevant factor for increasing competition in food producing countries. Even though consumer attitudes have an influence over the success of innovation, changes have been guided by a focus on structure and behavior of livestock and of industrial process. This article explores the novelty concept, from a specific case, to contribute evidence about reciprocal relations between elements of the subsystems. A general hypothesis is constructed: if in a group of consumers of fresh beef, preferences for new product co-evolves with several associated productive strategies, the changes in production practices will need to include new abilities (agreements, systems of capturing ideas, communication patterns, cooperation, technological reorganization, strategic alliances), whose scope will transform incremental innovations into radical ones. A set of data about consumers from Buenos Aires was used from: (1) a random sample of 690 household concerning meal selection and preferences; 2)studies about differences in ways of supply and strategies that influence perceptions about quality; and 3) data from interviews and discussion groups. The concept of novelty shows several relations with added value system practices. In a convergent style (changes towards demand satisfaction) home meal preference, the quality perception, consumer attitudes, and the scope of subsystem changes needed to introduce novelties, reinforce the need for new organizational strategies.
Key words: Novelty, innovation, consumer, preferences, beef, Buenos Aires.

RÉSUMÉ

La politique d'élevage est un facteur significatif pour augmenter la compétitivité des pays qui produisent aliments. Bien que les attitudes des consommateurs aient influence sur le succès de l'innovation; les changements ont été guidés depuis une analyse sur la structure et le comportement du bétail et du processus industriel. Cet article explore quelques résultats sur le concept de nouveauté, depuis un cas spécifique, qui pourraient contribuer sur les relations réciproques entre sous-systèmes et leurs éléments. Propose une hypothèse générale: si dans un groupe de consommateurs de viande bovine, les préférences par des nouveautés de produit évoluent avec des stratégies productives associées, les changements dans les pratiques de production auront besoin d'inclure de nouvelles habilités (accords, systèmes de capture d'idées, patrons de communication, coopération, réorganisation technologique, alliances stratégiques, etc.) dont la portée transformera des innovations incrementaux dans radicaux. On considérera un ensemble de données de consommateurs de Buenos Aires : 1) Échantillon de 690 maisons sur les sélections et les préférences de repas dans des consommateurs, 2) Études sur les différences dans des formes d'approvisionnement et stratégies qui influencent la perception de la qualité ; et 3) Données obtenues dans des entrevues et des groupes de discussion. Le concept de nouveauté montre plusieurs relations avec les pratiques du système de valeur. Dans un style convergent (changements vers la satisfaction de la demande) les préférences, la perception de la qualité, les attitudes des consommateurs et la portée des changements dans les sous-systèmes nécessaires pour introduire des nouveautés renforcent l'idée d'introduire de nouvelles stratégies organisationnelles.
Mots Clés : nouveauté, innovation, consommateur, préférences, viande de bœuf, Buenos Aires.

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RESUMEN

La política agrícola ganadera es un factor relevante para incrementar la competitividad de los países que producen alimentos. A pesar de que las actitudes de los consumidores tienen influencia sobre el éxito de la innovación, los cambios han sido guiados por un enfoque que enfatiza la estructura y el comportamiento de la ganadería y del proceso industrial. Este artículo explora el concepto de novedad, desde un caso específico, para poner en evidencia relaciones recíprocas entre elementos de los subsistemas. Se construye una hipótesis general: si en un grupo de consumidores de carne bovina fresca, las preferencias por novedades de producto co-evoluciona con varias estrategias productivas asociadas, los cambios en las prácticas de producción necesitarán incluir nuevas habilidades (acuerdos, sistemas de captura de ideas, patrones de comunicación, cooperación, reorganización tecnológica, alianzas estratégicas), entre otras, cuyo alcance transformará innovaciones incrementales en radicales. Se utiliza un conjunto de datos de consumidores de Buenos Aires, a partir de: 1) Muestra de 690 hogares sobre selecciones y preferencias de comidas, 2) Estudios sobre diferencias en formas de suministro y estrategias que influyen la percepción de la calidad; y 3) Datos obtenidos en entrevistas y grupos de discusión. El concepto de novedad muestra varias relaciones con las prácticas del sistema de valor agregado. En un estilo convergente (cambios hacia la satisfacción de la demanda) las preferencias por comidas en el hogar, la percepción de la calidad, las actitudes de los consumidores y el alcance de los cambios en los subsistemas necesarios para introducir novedades refuerzan la idea de introducir nuevas estrategias organizacionales.
Palabras clave: novedad, innovación, consumidor, preferencias, carne de res, Buenos Aires.

1. INTRODUCTION

Agricultural policy is a relevant factor to increase competitiveness in countries that produce food. By one hand, in spite of the fact that consumer attitudes influence the success of food innovation, relatively little attention has been given to it. Agricultural changes have been guided with a focus on the farmer, structure and behavior in industrial process, or in conventional marketing. A general overview of the literature suggests that innovation success is closely linked to technological change (technology push). On the other hand, innovation is also regarded as consequence of market orientation (demand pull). Not many studies exist concerning the point of contact between the two main forces resulting in products not only rewarding successful but also fulfillment of needs and wants of customers.

Not many studies exist concerning the point of contact between the two main forces resulting in products not only rewarding and also fulfillment of needs and wants of customers. This paper tries to introduce a newness concept from specific cases and adds it to other related elements to accommodate a more realistic theoretical position about food innovation problems. Likewise, this article will present and explore some results about the newness concept as a starting point towards a hypothesis, which may be useful to improve specific policy framework. In the second section, will be discussed previous literature with implications about the research hypothesis formulation. The third section describes the methodology used in this research whose aim is to answer the questions: What is newness in fresh beef products to the consumer today? What is newness in fresh beef products to the consumer today? Are there some coordinated links between the newness concept by consumer and production systems that have some influence on innovation policy design? In the fourth section, we describe results and finally we present conclusions.

2. PREVIOUS LITERATURE: VIEWS AND FACTORS ON INNOVATION AND SUCCESS

Environmental factors and technology paths are relevant to introduce novelties. An institutional framework is critical for an economy to develop its innovativeness. Johnson *et al.* (1994) concluded that in the national innovation system there are two basic structures, productive and institutional, that have a direct effect on innovative conditions and, both of which constitute a holistic system. This system defines types of learning, communication style, innovation, mix of prevailing rationalities, and timesaving attitudes, among others. For instance, Combs *et al.* (1996) developed a conceptual model of a food system. It consisted of three sub-systems: *Food production* subsumes activities associated with land use; crop, livestock breeding and harvesting management; *Food acquisition* subsumes post activities (e.g., processing, transportation, storage, packaging and marketing) as well as activities relating to household and public food distribution; and *Food utilization*, that subsumes activities involved in processing practices at both home and community levels (e.g. preferences and access to energy and knowledge). The components of these sub-systems have substantial overlap and inter-linkage. In addition, food systems were seen as existing within a *bio-physical*; a *social,* an *economic,* a *public health* and a *policy* environment.

Despite the fact that this model is not specifically applied to beef, it includes similar terms, and consequently, may be appropriate for understanding levels of analysis and elements of added chain value.

On the other hand, Malerba (2001) proposed that demand by industrial or service users or by consumers has always proven to be a key element along various dimensions: a major factor in the redefinition of a segmented system, stimulus for innovation, factor shaping the organization of innovative and production activity. In addition, Padberg and Westgren (1979) have pointed out that food consumers are *incrementalist* because large changes are risky. Consumers cannot articulate their wants because of the complexity of their choices. They may be able to express the direction of their preferences but no more. Their wants are often the only determinate in groups: seeing themselves in a symbiotic relationship with food manufactures and advertisers.

Therefore, to study the confluence of supply and demand, products can be useful for performance competition, if we are able to know the consumer assessing criteria. Views about the newness concept in consumers segments could contribute to evidences on reciprocal behaviors among subsystem's element. We will define them as *co-evolutionary* and will propose that they will have influence in the progress of sectored system and then would need other innovations, in subsystem and environment. Ida (2002) has discussed the interaction between supply and demand developments of innovation, based on the framework of evolutionary ecology and shows that there are a variety of types of processes in which the quality of products and consumers preferences *coevolves*.

Moreover, fresh beef is a raw and perishable food. At first sight, these conditions can be irrelevant but the consumers consider the information about the entire production process and their interest (health, environmentalist, origin, breeding management, etc.), their wishes (timesaving, security) or their capabilities (technology household), when they choose beef. This may enable us to have insight into public perception of beef products, which will point out if there are needs or trends and where they are located.

According to the framework, we will make a general hypothesis: If in a group of fresh beef consumers, the preferences for newness product *coevolves* with several production strategies the changes in practices will need to include new organizational skills (agreements, systems to capture ideas, communication patterns, cooperation, technological re-organization, strategic alliance, among others) whose scope will transform incremental innovation into radical innovation. We will examine the suitability of the hypothesis through a set of data resulting from fresh beef consumers that were researched at Center for Agro-food System Studies (CEAGRO) in Argentina.

3. METHODOLOGY

The main approach for assessing the validity of the hypothesis was based on an analysis of three empirical data sources. They were: first, a random sample of 690 households in the city of Buenos Aires and surrounding areas; second, results from research about usually quality perception signals, both implicit or explicit, in the fresh beef product case; and finally, qualitative data collected through in-depth interviews and a focus group. During 1999, Aulicino *et al.* as well as McCormick *et al.* developed a complete inquiry on attitudes, habits and preferences about ways of feeding and cooking in 690 households. Housewives in charge of buying and who were responsible for the family meals were surveyed. All those surveyed had children of school are. The questionnaire was personal, took 35 minutes and registered weekly information (from Tuesday to Saturday). The answers were processed by Survey Analysis Software (SNAP, 1994) and System Portable Analysis Numeric Data (SPAD-N, 1996). Multivariate analysis (Johnson and Wichern, (1992) was carried out using Statistical Analysis System (SAS, 1993). As results of those inquiries, a ranking of plates was obtained. We found that the beef meals ranked first. We built a consumer profile for this particular style selection by sub-sample cluster analysis. Recent studies in the same location found some differences between supply ways and choice strategies, related to sheep meat and beef consumers (Moré, 2000; Lynch *et al.,* 2000; Viola and Traversa, 2001; Viola and Moré, 2002).

Between April through May of 2002, we carried out in-depth interviews (Valles, 1997) and focus groups (Foxall and Goldsmith, 1997) in order to determine why consumers included beef in their diet and which were the new needs or demands about what they could consider an original product. These interviews and focus group participants had a similar profile and location as a sub sample. The focus group included men and women, in charge of buying but with different family configurations, although each group was made up of persons of the same age segment. All the people had had «C expanded» economic level (see Argentinean Marketing Association, 1998 and Abbiati *et al.*, 1999). Meetings were held with a moderator and a non-participant observer that collected information on tape and by notes. While reviewing, the information was sorted by code responses. Using these three steps, interesting results about the newness consumer concept were obtained and lead the authors to postulate a hypothesis about beef innovation product

characteristics.

4. RESULTS AND DISCUSSION FROM A CASE STUDY

4.1. POSITION OF BEEF IN PREFERENCE RANKING

From the first data source (household random sample), it was shown that beef moved into the first five places (Tables 1 and 2). As food, this product was included as lean fast cook-cut or typical fragmentation (steaks or breaded cutlets -»*milanesas*», in Spanish-) or took part in braise casserole («*Guisado en olla*», in Spanish) in daily household meals. Burgers were ranked fifth place. Although analysis of the main people surveyed showed little differences related to some of their characteristics (job activity, educational level or family configuration), only the age of those surveyed appeared as relevant enough to influence their preferences without affecting the beef ranking. When the group of surveyed people who selected beef for lunch or dinner (sub sample of 409 households) was analyzed, we detected some characteristics that defined three clusters (Table 3).

Table 1

Frequency of chosen dishes taking into a account socioeconomic level

List of chosen plates	Socioeconomic level of the population			
	C1	C2	C3	D
Beef breaded cutlets	15	16	20	17
Beef steak / chop	11	14	17	15
Noodles	3	6	9	9
Casseroles with beef /stew	4	5	9	8
Burgers	11	9	3	5
Simple Casseroles	3	2	4	12
Chicken	4	5	7	4
"*Asado*" Barbecue	10	4	3	3
Chicken breaded cutlets	8	3	4	2
Sautéed vegetables with eggs	3	3	4	2
Rice	2	3	2	3
Others plates	26	30	18	20

Source: Mc. Cormick *et al.* (1999), in %, based on 690 households.

Table 2

Frequency of chosen dishes taking into account aging surveyed

List of chosen plates	Age of surveyed (years)		
	<34	35-50	>50
Beef breaded cutlets	14	21	11
Beef steak / chop	17	13	18
Noodles	9	7	7.5
Casseroles with beef /stew	7	8	5.5
Burgers	6	6	5.5
Chicken	5	5	8.5
Simple Casseroles	10	3	5.5
"*Asado*" Barbecue	3	4	5.5
Chicken breaded cutlets	3	4	3
Rice	3	3	2
Sautéed vegetables with eggs	3	2	5.5
Others plates	20	24	22.5

Source: Mc. Cormick *et al.* (1999), in %, based on 690 households.

Table 3

Brief description of cluster analysis (characterization based on 409 households) and Note about Logistic Procedure Effect of socioeconomic level (SEL)

Each cluster with % surveyed / total households	%categories/ cluster	% cluster/ categories	Category of the variable	Variable name
1 (%21.08)	100	39.5	**C1**	Socioeconomic level (SEL)
	60.6	43.02	4	Family configuration (n° adults)
	100	18.6	**UG**	University graduate
	46.3	52.3	46-65	age
	100	12.79	UGI	University graduate incomplete
	32.05	58.14	**Hiper/super**	Place of purchase
2 (%71.32)	89.39	40.55	**C3**	Socioeconomic level
	85.96	33.68	P	Primary study
	80,1	56.70	2	Family configuration (n° adults)
	80.10	52,58	35-45	Age
	76.64	56.36	**Butcher's**	Place of purchase
3 (%07.60)	100	58.06	PI	Primary study incomplete
	100	35.48	**E**	Socioeconomic level
	91.67	35.48	>65	Age
Note: Main results with Logistic Procedure (Wald)				
Effect SEL Chi-Square 23.0559 Pr > ChiSq 0.0003				
Contrast Test Results	**Contrast**	**DF**	**Chi-Square**	**Pr > ChiSq**
	C1 vs. C2	1	0.0960	0.7567
	C3 vs. D1	1	0.0088	0.9252
	C3 vs. E	1	0.0033	0.9541
	D1 vs. E	1	0.0030	0.9566

Source: own calculations.

4.2. THE CONSUMERS TAKE IN ACCOUNT TWO MAIN INTERMINGLED ORIENTATIONS RELATED TO BEEF

4.2.1. HABITS ORIENTED

Beef appears most adequate with schedules requires the least culinary labor and may be stored. During focus group the participants say, for example, «Beef is very practical»; «Other food demands more preparation»; «Beef can be cooked quickly and reheated, it is better in unexpected schedules».

4.2.2. RELIABLE ORIENTED

Beef appears to be related to health, retailers, place of purchase or product conditions. All these factors were regarded as signs of reliability (consumers pointed out behaviors like «I decreased beef consumption on my doctor's advice»; «In the supermarket I don't trust the refrigeration»; «The cleanliness of the store is very important»; «I wouldn't like canned beef»). Even if the place of purchase was always relevant, there were some differences when analyzing the data of those surveyed in the sub sample of 409 households where the consumers ate beef at lunch or at dinner. Shopping is therefore a way of selecting beef that has strong influence but whose meaning to the consumers is diverse. Buying beef at supermarket was usual only in cluster 1; on the other hand, buying at a butcher's shop appeared clearly in cluster 2. We used a logistic procedure (see Table 3) that proven socioeconomic level is an important variable category that defines a cluster. As result of this cluster analysis, socioeconomic level and place of purchase were two main significant variables frequent in the sub-sample cluster. Also other variable categories could define each cluster, e.g., age, education level and family configuration (see Table 3). The opportunity of meals also influenced consumer behavior; the clusters at lunch time were different clusters at dinner time. We think that these differences may be related to storage capacity and other attitudes such as taste or the idea of the quality of beef storage. Other research points out the existence of consumer attitudes related to conservation of food (see Moré *et al.,* 2001).

4.2.3. FACTORS THAT HAVE INFLUENCED CONSUMER PERCEPTION OF QUALITY

In the case of beef, the confluence of product characteristics and message is evident. Some ways to communicate quality products have been summarized in Table 4 and show their effects on consumer behavior. Usually, the consumers use product attractiveness or appearance signals in different combinations, also consider orienting factors (health, convenience, information) and extrinsic attributes (Viola and Moré, 2002).

Table 4

Some ways to communicating quality products connected to consumer behavior

Ways of communicating in beef	Behavior consumers during the purchase
In butcher's shops or supermarket that should have frozen , packaging or advise device.	Shopping conditions like hygiene, cleanness, friendly atmosphere, etc., are very relevant
Offer by complete cut or fragmentations in individual packaging with specific	Oriented by health idea, ways of cooking.
Product without instructions	Use appearance, aspectual cues.
Branded or label product. Ready meals beef.	Use extrinsic quality attributes like reliability on in the retailer.

Source: own calculations, based on research findings.

4.3. KIND OF PRODUCT INNOVATION IN DEMAND

During the in-depth interview and focus groups, the moderator asked if they were able to describe some changes that improved beef products, and then why these changes could be considered novelties. Finally, with the list of changes, the moderator asked reasons to justify each one. We collected eighteen main changes but not all of them took place alone, many of them should be considered holistically. Newness suggested by consumers can be located on packaging, information and design. The main reasons are described as follows: 1) *Packaging*: consumers requested: new materials, new shape, to solve drainage accumulation losses and to use security sealing; 2) *Information*: consumers requested slaughtering, origin and breeding system data and requested customer services; 3; *Design*: consumers requested almost-ready fresh meal , frozen indicator device, new cuts and single portions. Most of newness pointed out by consumers (about 18 of them were related with fresh beef products) needed other changes in different areas of the added value chain. Table 5 shows the list of suggested product innovations placed in groups according to types with indications about other subsystem changes.

4.4. THE ROLE OF CONSUMER RESEARCH ON FOOD PRODUCT INNOVATION

In 1979, Padberg and Westgreen suggested that the conventional hypothesis about product competition and consumer buying behavior are inappropriate to examine these processes in the modern food system. Consequently, they present some hypotheses in the interface between product development and consumer behavior. Apart from this, Harmsen *et al.* (2000), based on a series of case of studies, indicated that both product and process orientation lead to success only when the company is able to undertake actions valued by the market.

Despite García and Calantone (2002) pointing out that a product's innovativeness classification is never dependent on the customer's viewpoint but the customer's

Table 5

The newness by consumers sorted to types according focus group results

Suggested newness	Consumer's argues to justify the newness in demand	Scope of this change in chain value subsystem		
		F.	I.	R.
1. Geographic origin of the animals	To know breeding system	x	x	x
2. Breeding style in label	To guarantee of free hormone, anabolic or other intoxicating elements	x	x	
3. Weight of slaughtering	To know age of animals	x	x	x
4. Slaughtering date in label	To know storage time	x	x	x
5. Slaughtering plant identification	To be reliable		x	x
6. Packaging with frozen indicator device	To be sure that the frozen chain didn't cut		x	x
7. Packaging with security sealing	To be sure that it wasn't opened		x	x
8. Packaging in individuals portions	More practical.		x	x
9. Packaging with drainage device	Fluid in packaging accelerates decomposition process of meat		x	x
10. To sieve the package without to introduce absorbent materials.	To allow best drainage. Absorbent elements are undesirable.		x	x
11. To see the complete piece.	Easy choice.		x	x
12. To pocket with freezer materials.	Easy storage at home.		x	x
13. To package in box	Best storage.		x	x
14. To include instructions and recipes.	To improve culinary results.			x
15. To give suggest about ways of cooking.	To improve culinary results.			x
16. To offer ready meals.	More practical. Timesaving.		x	x
17. Packaging date.	To know sale rhythm in supermarket.		x	x
18.To offer requested customer services	To make questions or complaints	x	x	x

References: F: farmers, I: industries, R: retailers.

Source: own calculations, based on research findings.

perspective and shows that a positive relationship between product innovativeness and newness to the customer exists, we think that this is an important controversy. According to our empirical findings, even if all decisions are individual, in order to explain the character of the action, it is necessary to refer to subjective fields created from particular groups of people. Traversa (2002) showed that feeding behavior of the population is different from other behaviors. However, there is not a complete idea about all the causes influencing it. He also suggested that even if there is a behavior course characterized by inertia, nevertheless, there may be at times, discontinuity. The nature of a discontinuous course is relevant in global market strategies and when considered as consequence

of market behavior, will be a misleading concept. Since the 1990 decade, the movement in beef demand, the recent diverse behavior in Europe and Asiatic countries, the demographic trends (such as were presented in Rastoin, 2003), as well as traceability management in complex and large chain as Argentinean beef chain following Green and Hy (2002), lead us to think a successful innovation product problem is how to offer one new product included within a feasible selection. In the study case, consumers with a preference for beef have been oriented not only by quality intrinsic product attributes, but also have made their decision based on the idea of health, place of purchase, and communication system. We have the following evidence to connect newness with household practices and upstream processes.

Newness, household practices and upstream processes: In the course of examining the consumer's argument, it was noted that their concerns were linked to: 1) several processes (breeding, slaughtering, packaging, and so on); 2) security devices added to give more protection to the product than habitual (sealing, frozen indicator); and 3) also with friendly design (ready, single portion, drainage). These suggestions might be associated, on the one hand, to consumer's views about processes adopted by producers, slaughters, manufacturers and retailers; on the other hand, to the services and reliability that they provide.

4.5. THE FUNCTION OF NEWNESS CONCEPT BY CONSUMERS IN THE CHARACTER INNOVATION

According Orihata and Watanabe (2000), product concept is not merely a matter of linkage between technology and market needs, nor a simple reciprocal relationship between engineers and marketers. Rather, product concept is the value or meaning that crystallizes, or emerges, from the interplay between suppliers and the institutional system of market. The first function of product concept is «integrity». Integrity is not just about the combination of technologies inside of a product, nor about the adjustment between product performance and user expectations, but also the free integration of both these dimensions.

In the case of beef, a critical look at the newness concept, even if it is an ideal product that could not exist, has the capacity to take place in a subjective field where each individual preference is included. The exploration of these issues might enable the coordination of several subsystem changes and the prediction of new trends.

Newness and association with organizational innovation: The product innovation, connected with information, implies adopting organizational innovation (cooperation, integration, logistic system, communication path, and so on) in management production (breeding system), in industrial processing and also system retailing. Communication paths among areas of added value chain need logistic, technical code and speed output flow. Several food companies could have limitations in their own stock of skills/knowledge, as well as a low degree of development in their suppliers. Additionally, some livestock breeding systems include some food, pesticide, anabolic or another technology that improve productivity. When ever there is technology that will be left aside, the «ways of negotiation» should be more sophisticated, even more so if integration biases are weak.

4.6. TOWARDS A BETTER UNDERSTANDING OF THE INTERACTIONS AMONG SUBSYSTEM

At first sight, the main force that has integration capability in an agro-food system could be a technology drive. But if the newness concept of consumers *coevolves* the glance innovation food matter should be changed, because moving towards a new analysis field it is necessary. Defining product innovation in this new analysis field will undergo a dynamic path, finding points of balance among the product assembling, consumer's needs and system or subsystem performance. A better competitive position will be held with the prospect of creating two sorts of barriers: commercials and technological. Good environmental innovativeness will be a policy design that can be adapted according to each dynamic *evolutionary* circumstance.

Food producer strategies, food industrial companies and food retailers: If the ways of perceiving quality of consumers are not homogenous, it might be right to revise the sketches to improve ways of producing beef food. If the scope of the newness suggested (Table 5) involves actions from more than one enterprise or subsystem, their individual or isolated competences might be insufficient. This implies that the development of some innovations would be limited unless the communication system was clearly specified and new cooperation or association network mechanisms were used within the system, subsystem or among firms.

CONCLUSION

In the case study, newness suggestions for consumer shows, several relations with added value system practices. A first group of newness in demand was connected to ways of producing and processes that can assure conditions and quality attributes that have been considered relevant included those that rescue past ways of breeding animals. A second group of newness was related to improve the reliability, habitual usages and ways of operating with the food. The former could be associated with system practice perceptions and the latter with new trends in alimentary behaviors. All would indicate that if beef newness were put into practice, simultaneous

associated changes in more of than one food production subsystem and in each environment would be needed. Thus the changes, as a whole, should not be considered incremental.

If fresh beef sectored system drives changes towards demand satisfaction (*convergent*) or in other directions (*divergent*) the hypothesis that has been presented will be acceptable. In a *convergent style* the selection of meat meals chosen at home, the quality perception, the preferences and the scope of changes in order to introduce novelties reinforce the need for new global organizational strategies in each subsystem. We wish to admit that we lack time variables which would enable us to show tendencies in order to define *co-evolution types* that can be used to design policies. These will be the object of our future research. In addition, during the course of analysis, new research questions have appeared, they include: What mechanisms would balance the combination among technology, innovation product and competitiveness barriers in the case of beef production if the quality perceived by consumers introduces a discontinuous behavior?

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