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TO STUDY AND EXPLORE THE CUSTOMER ATTITUDE TOWARDS SAFER NATURAL PRODUCTS QUALITATIVELY FOR FMCG FOODSECTOR ECO-BRANDINGIN INDIAN SCENARIO

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Abstract

As a minimum requirement people need and want to see clearly the food's description, the brand, the use by/ best before date, and the price. Respondents know that words lie, pictures mislead, and marketers tell stories. Consequently, the overriding principle of the product description and food packaging is to let the product offer direct sensory evidence of its appearance and qualities. In the super market, the sight of food is the primary indexical evidence available to the customer. Transparency/visibility becomes an overriding goal in food packaging because it enables direct, sensory product evidence; validation of benchmark claims; comparison to competitor product; and imagined consumption. The accompanied and eye-tracked shops demonstrated that respondents are very tactile with food where they can be -e.g. with fruit and vegetables - and the transparency of meat packaging was especially important and used by respondents as a shortcut for judging food benchmark. Price can eclipse other aspects of the Brand information, especially for lower income respondents. Those with high income displayed different attitudes to those with lower income in terms of the perceived options available. Respondents in lower paid jobs paid more attention to special price offers, and thus respectively paid less attention to food primary, secondary and tertiary packs directly. Individual dietary requirements are key in determining the use of and engagement with different elements of food Brand information. The level and extent of information required is often driven by specific dietary needs or underlying health conditions - e.g. health (allergies, high blood pressure), religion (kosher), or morals/choice/lifestyle (vegetarian, vegan, dieting), and thus a need to hone in on particular information. Respondents avoid reading the back of food packs by using words or symbols on the front as 'beacons' to quickly guide shopping. Any particular respondent has his or her own agenda and is unlikely to be interested in the totality of primary, secondary and tertiary packs. The respondent's goal is to exercise their selective attention, securing key elements of information, while ignoring the broad mass of material (i.e. they develop Short cut for information). Some participants reported struggling with the volume of information provided on food packages suggesting that there was simply too much. The challenge is that different respondents think that different elements are superfluous, and that different individual elements constitute overcrowding or overshadowing to different respondents. Because it serves, a range of descriptive tasks (e.g. detailing food ingredients and constituents, explaining how to cook the food) food primary, secondary and tertiary packs is a hybrid text, presenting a range of different vocabularies and sets of assumptions. Some of the component messages may be patronizingly simple whereas some descriptions of ingredients and constituents may presume a level of knowledge that the general respondent may lack. It has been found that particularly w.r.t. the food industry, there is relatively less involvement during purchasing and evidence shows what all information customers actually look for when they buy, vis-a-vis what they say they look at.

Introduction

Background

There is an overriding assumption that the supermarket 'brand' guarantees a level of food 'safety', alleviating respondents of the responsibility to review primary, secondary and tertiary packs to ensure their safety. It had been noted that Co-op stores put lot of individual assurance aspects under their general Co-op 'do-good'



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umbrella - everything is fairly sourced, bought, farmed,etc., sorespondents can buy what they want from one source. Respondents assume that well-known brands have reached and surpassed minimum standards with regard to the food's benchmark and safety. Respondents because of this inherent assumed trust that the product meets or surpasses an appropriate standard do not seek out information, or claims, about benchmark and safety provided on the packaging. The importance of food Brand information increases when buying for other people, particularly babies and young children. People spent the most time looking at baby food Brand information, and when buying for other people. Generally, participants tended to look out for reassurance of specific qualities such as no E numbers, no caffeine, and low fat (or most frequently 'lite'). 'Best before' and 'use by' are confused terms - Low understanding leads to relaxed attitudes towards date Brand information once in the home.People use a minimal amount of food primary, secondary and tertiary packs in the home when preparing familiar or routine meals, using familiar ingredients or cooking methods. The information people say is important to them when buying food was not necessarily supported by what is actually in their cupboards, or how they actually use the information once in the home - particularly with regardto date Brand information. There is a lack of understanding of the implication of the date Brand information with regard to using, freezing and storing food, especially for opened pre-sealed foods. There is less concern about date Brand information on canned and pre-frozen items, for example, respondents exert the attitude 'you can't go wrong with tins'.Country of origin information is not a priority when shopping in the supermarket.The majority of respondents are unaware that country of origin was defined according to location of last substantial change'. When shopping, respondents are steered by ingrained preconceptions about where foods come from, predisposing them to notice text and symbols, which reconfirm assumptions.

Country of origin

Safety is a universal priority for respondents, but they are easily reassured about safety. (i.e. supermarket umbrella assurances). The Brand information is an important benchmark, and country flag acts as a general umbrella assurance for food miles (referred to by respondents as air miles), farming standards, and even organic. This results in lots of blurring of meanings (e.g. animal welfare is implicit in organic) and low engagement with specific formal symbols denoting benchmark.Respondents were reassured by 'Country of manufacture', but engage more with terms such as 'organic', 'free range' if they are prioritizing animal welfare. Animal welfare can be important to people but is rarely a factor in choice as respondents feel they are not given the information. Respondents say they are concerned about food miles, but their behaviour suggests otherwise. Authenticity is important for products, which are, in respondents' minds strongly associated with a particular country.Country of origin information has greater influence in certain categories such as meat where some respondents feel more comfortable with locally sourced products. Some respondents say they prefer to buy meat from the local butchers or farmers markets rather than the supermarket due to the connotations of freshness. However not all respondents who expressed this preference actually purchase their meat from local butchers or farmers markets. In order to conduct a study to investigate what information people really look at on food Brand information, and why people look at particular pieces of information. Several recent research projects had been conducted, which investigated peoples' use and understanding of Brand information on food products. However, these projects all used relatively traditional methodologies such as focus groups and questionnaires, which, by their nature, explore what respondents say they do, rather than observing, and discussing, their actual behaviour. A study in May 2010 investigated the potential of eye-tracking technology as a way of discerning what food packaging information shoppers really look at in a real world setting, rather than relying on what they say they look at. The study concluded that eye tracking is feasible in the natural environment of the supermarket, and is capable of differentiating particular food Brand information amongst the wide range of information found on food packaging.Overall, the aim of the research was to find out what main shoppers think about and refer to when shopping for habitual and first time purchases, and how they behave according to the format and usability of Brand information. The present study aimed to develop insights based on more advanced technologies such as eve-tracking, to investigate actual behaviour and establish what information people really look at (as opposed to what they say they look at). In particular, the aim was to determine what information on food Brand information people refer to when shopping, how much the information is used and to what extent different types of primary, secondary and tertiary packs information effect purchase decisions. Whilst the primary focus was to study the use of non-nutritional primary, secondary and tertiary packs or information, the use of nutrition primary, secondary and tertiary packs was inevitably part

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of people's behaviour and so is included in the report where relevant, and especially where it helps to illustrate the interpretation of other elements of the Brand information. Particular focus was on country of origin primary, secondary and tertiary packs.

- Determine what information people refer to when shopping, and to what extent different types of primary, secondary and tertiary packs information effects purchase decisions
- To explore behaviour around Country of Origin information
- Highlight any issues regarding the user-friendliness of food Brand informations
- Investigate how people interact with Brand information in the home
- Develop insights based on advanced technologies such as eye-tracking

Objectives:

- 1. To understand and find out the type of packing, packaging and primary, secondary and tertiary packs information respondents' look for during purchase.
- 2. To know the extent of change in purchase decisions of customer's w.r.t. the various standard models of primary, secondary and tertiary packs used by the marketer.
- 3. To explore how the products information as in 'country of manufacturing' effects the buying decisions
- 4. To know if the clear and candid information displayed on the pack has an impact on the buying behaviour.
- 5. To investigate if packaging and primary, secondary and tertiary packs information brings a positive word of mouth in the peer-group.
- 6. To explore the usage of latest processes and technologies that are used to understand the impact of packaging and primary, secondary and tertiary packs on buyer's purchase pattern.

The research was planned to be executed in Six Steps across the population of Delhi-NCR in context of selected organized retail food stores. Using the method of direct and indirect observation to attain the above mentioned objectives in a 'natural environment', so that the differentiation in packaging and primary, secondary and tertiary packs at the point of purchase for a particular category of food products can be explored in real life perspective. Another important purpose was to know how the respondents use the food product's primary, secondary and tertiary packs information during their actual use of that product. The study tries to examine the impact of 'Made in Country', expiry and manufacturing dates, benchmark accreditations, brand value, as indicators of preferred purchase.

Research Questions

- How much time respondents spend referring to Brand Information (both thinking and reading)
- The order people look at certain pieces of information
- Whether people find food primary, secondary and tertiary packs information user-friendly e.g. in terms of font size, colour and layout and language
- Whether respondents find it difficult to use Brand information due to: small text; bad contrast between text and background; layout of the information; insufficient illumination in the shop, too much or confusing information
- Whether the type of product, in terms of its size, shape, or materials used, affects the usability of the Brand information, Understanding and interpretation of the information on Brand, Why certain information on the Brand is not used, Differences by the different types of shop/shopping occasion, Difference between first time and subsequent/habitual purchase on use of the Brand information

Eye tracking in Retail Mock Area

Focus in more detail on country of origin, expiry dates, and benchmark indicators - eye tracking allowed us to analyze the line of sight and to assess the role of the logo and colors, symbols and messages and explore literal vs. culturally influenced assumptions influencing choices. It was found that there was very low engagement with food Brand information for routine or habitual purchases. For example how-to-use instructions can seem simplistic and patronizing. On the pack, respondents were offered quantitative information about the nutritional properties of food in technical language they generally did not understand - e.g. the difference between 'kJ' and 'kcal'. Respondents displayed an awareness of basic nutritional issues - they knew they should reduce their



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intake of salt and fat, and increase their intake of fruit, vegetables and fiber - but very few respondents understood the differences between saturated, unsaturated and monounsaturated fats, grasped the basics of cholesterol, or could say what omega oils are. Ingredient lists naming preservatives, sweeteners, colorants and other complex organic compounds often exceeded the comprehension of most respondents. Non-regulated marketing claims and graphics can mislead, overshadow, clutter, or disengage respondents with mandatory legislation. Across different retailers and food manufacturers there are strong consistencies across food packaging, including the packaging solution, color choices for background and text, 'markers' showing variations within the type, types of promotional claim, imagery, and types of brand name. This exposes the apparent paradox of competing retailers and manufacturers sharing the same packaging conventions, and thus, to an extent, co-operating with each other. Food - primary, secondary and tertiary packs has become a collage of disparate, sometimes competing messages. It is a mixed-motive medium - some product messages are cautionary in intent, enforced by regulation. However, most are voluntary, exuberant, self-expressive and selfpromotional. Semiotic analysis offered some theoretical insight as to why the use of 'Country of manufacture' on a packet of chicken may not convey the country of origin to the respondent but may convey an implication of benchmark, and why 'local' can be understood to convey organic or high benchmark despite the actual definition of local differing from that of organic. The packaging materials and colors used can have a strong impact in the way messages were interpreted.

Methods

The research was conducted in Delhi-NCR, in main retail supermarkets, and covered a range of life stages - prefamily, family, post family, and different shopping missions. All participants were main household shoppers (a mix of men and women, although the sample was skewed towards women due to tendency for them to fulfil this role). Mix of urban and semi-rural locations was there. Split between pre-family (no children living at home), family (currently have children living at home and post family (no children currently at home). An age spread of between 18 - 60 fell out naturally. Within pre-family we recruited a mix of individuals and couples, Within families we recruited a mix of younger families (oldest child less than 12 years old) and older family (children in family aged between 12 and 18 years old). Mix of different stores across the sample (Reliance Retail, Big Bazaar, Spencer's, SPAR, Easy Day). Based on where we were able to obtain permissions for conducting research in the store, and minimizing the amount of within region travel between stores. Mix of different instore missions: main store shoppers, top up shoppers within main and smaller location top up shops.

Research was conducted in five phases, which built upon the work undertaken in the previous stage(s):

- 15 non eye-tracked accompanied shopping trips (in real life context)
- 36 eye-tracked shopping trips (in real life context)
- 15 filmed accompanied meals (ethnographic home visits and interviews)
- 20 eye-tracked tasked shops in Retail Lab
- 6 'follow-up' eye-tracked tasked purchases

Participants were recruited for each phase of the research and were not involved in more than one phase.

Non eye-tracked accompanied shops

Non eye-tracked accompanied shopping trips were conducted with individual respondents. During the accompanied shop, the accompanying researcher observed the respondent in real time, and where appropriate the respondent talked through their shopping process as they shopped. People can forget about or neglect to mention the small things that make a difference to their behaviour, and this 'commentary' with some more detailed probing helped to get inside the respondent's frame of mind and decision making throughout the shopping process. This 'broad brush' initial stage of the research acted as a useful steer for issues to develop in the subsequent eye-tracked shopping trips, and in framing the range of users. Non eye-tracked shops identified that respondents were influenced by price, use short cuts to information, and want to view meat products and handle fruit and vegetables. Following the shop the researcher would discuss with the participants their shopping behaviour and the reasons for that behaviour. The location for this de-brief varied, and depended upon participant preference with the majority taking place in a café or coffee shop near to, or in, the supermarket.



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Eye-tracked shopping trips

Eye tracking was used in stage 2 of the research. Each eye-tracked shop was unaccompanied and participants undertook their main or top up shop as normal.Eye tracking pinpoints and records precisely where shoppers are looking.Each participant wore a pair of eye tracking glasses which recorded onto a mini recorder the participant wore. Due care was taken to ensure that participants were able to shop as normally as possible and did not feel under time pressure to complete their shop. On returning from their shop the researcher talked through and explored their behaviour, whilst reviewing with the participants some of the eye tracking footage of the shopping trip they had just completed. This discussion and review of footage took place in a mobile viewing suite, parked in the supermarket's car park or near the supermarket.Eye-tracking footage and subsequent interviews provided information to allow the further development of the spectrum of users and the impact of habitual behaviour. This method also clarified understanding of respondents' interaction with country of origin information, and enabled a fuller analysis of the use of 'short cuts' and the impact of price and its ability to overshadow other aspects of primary, secondary and tertiary packs.

Ethnographic home visits

Accompanied meals were conducted with respondents in their homes at meal times to explore the use of food primary, secondary and tertiary packs when preparing food and at the meal table, and how this use of Brand information at home might impact upon subsequent behaviour at the next time of purchase. The researcher observed and filmed each family, couple or individual recruited for breakfast, lunch or their evening meal, and noted how food primary, secondary and tertiary packswas used (or not used) during the preparation and consumption of that meal. The researcher also made note of the contents of participants' cupboards and fridge – especially the contradictions between what people say is important to them when they buy food and what they have already bought. After the meal, the researcher asked questions about their observations. The 'seriousness' brought by the camera encouraged participants to let the researcher explore their homes. Accompanied meals identified when and how respondents put away shopping on return from the shop, provided further insight into the spectrum of Brand information users, and enabled exploration of the variation between actual and reported purchase behaviour, by means of examining cupboard contents following a discussion. Observations highlighted inconsistencies between the importance of date Brand information when purchasing food in the store and respondents' use of them once in the home.

Purchases in Mock Retail Lab

Participants were tasked with specific questions in the Retail Lab. The Retail Lab is a mock store which can be laid out to represent aisles within a variety of different types of outlets. The layout of the store can be changed for different scenarios to allow different types of tests. Whilst it is not a 'real' retail environment this method was chosen as it is an ideal tool to use to assist in analyzing more specific areas of food primary, secondary and tertiary packs. Individually, participants were tasked with making three selections from the shelves within the Retail Lab. Participants wore field of vision glasses(a less sophisticated version of eye-tracking which tracks the line of sight) and after the purchases were made, participants took part in an interview using the field of vision data to unpick, discuss, and explore their use of food Brand information in their selection process. The final six tasked purchases in the Retail Lab were eye-tracked, which enabled further and more detailed exploration regarding country of origin, best before dates, and wording/symbols perceived as denoting 'benchmark', which were highlighted throughout the progression of the study as areas requiring depth of exploration.

Questions in the Retail Lab were the following:

- 1. Find a product that you consider gives you information about its country of origin
- 2. Find a milk product you can use every day next week
- 3. Find a 'high benchmark' and a 'low benchmark' cereal

The tasked purchases allowed further development of the role of wider contextual issues and explore directly the actual impact this had on the use of primary, secondary and tertiary packs. The findings indicated that respondents often use preconceived assumptions about country of origin to guide their purchases, honing in on certain information such as country flags to reconfirm these assumptions. The final element of the project was a semiotic analysis of food Brand information, used to complete the picture with regard to the role and impact of



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food primary, secondary and tertiary packs at the final stage in this research. Semiotics is a desk based approach to the study of systems of communication and their meanings within the wider context - both in terms of society as a whole, individuals' own experiences, likes, dislikes, and their terms of reference. The individual elements of food Brand information are not only collections of text and images but they can be described as being signposts' or 'logo and colors'. These logo and colorsare formed through the society that creates them.By looking at different Brand informationit is possible to identify and analyze the relationship between the logo and colors and symbols and messages used and the cultural context in which it is operating. This can result in a much clearer understanding of the conventions that are in use in that particular market segment. It is also often the case that a semiotic analysis not only lays out existing conventions, but is able to point out where and how new opportunities exist to reach the same target audiences. The semiotic analysis 'frames' and places in context the issues previously identified from other elements of the research. It is a useful building block in that it allowed exploration into the primary, secondary and tertiary packs issues the research had identified within their cultural context rather than in isolation. Semiotic analysis had been used in the present study as a thread to pull together the analysis, and it helps frame the understanding of the ways in which respondents use food primary, secondary and tertiary packs. In broad terms the semiotic analysis is a development of the inquisitive thinking that has underpinned the research throughout this project looking for the meaning, importance and impact in the 'cues' that are picked up by respondents. For example, semiotic analysis indicated that text that is small and thus difficult to read may be being drowned out not only by physical means (i.e. the surrounding text being bigger) but by text that has a 'bigger' message; a message that is more relevant to that individual respondent. This may help to explain why the use of 'Country of manufacture' on a packet of chicken conveyed an implication of benchmark as well as the country of origin; and why 'local' can be understood to convey 'organic'or 'high benchmark'. Despite the actual definition of 'local' differing from that of 'organic' the bigger message is more relevant to the individual respondent and a non-literal meaning is inferred.

Non readers - Lack of time, interest or need

Respondents who spent the least time looking at food Brand information tended to feel they had particularly limited time for shopping, and therefore for reading food Brand informations. These respondents also showed a general disinterest in food, a lack of awareness of which foods are 'healthy', or the information which is available to them about food products. Some people said they perceived little need to seek information about food, describing instead a 'trial and error' approach to shopping based on their own and their families' taste preferences. These respondents tended not to be serious dieters, or suffer from allergies or other medical conditions which require special dietary considerations.

Price can eclipse other aspects of the Brand information

Some participants were observed making spontaneous purchases without looking at the food Brand information (particularly top-up shoppers or people buying lunch in smaller stores) – and their subsequent interviews revealed that these were most often motivated by a special price offer. In some cases, special price offers overshadowed information pertaining to health, benchmark, or usage information.Some respondents adopted an attitude where buying low priced food was the priority. These respondents genuinely knew very little about food and were not interested in reading Brand information – the offer was too much of a bargain for them to be concerned with what was in the food.Other respondents within the non-reader group displayed a rather more dismissive attitude towards reading Brand information explaining that this is their way of avoiding the 'guilt' of knowing toomuch about a suspected lower benchmark food, in order to justify buying the lower priced food. These respondents approached food Brand information with the attitude of 'what I don't know can't/won't hurt me'.

Word of mouth by friends negates the need for reading the Brand information

Advice and recommendations of friends, family, diet clubs, television, magazines and books were perceived as highly credible and negated the need for Brand information reading. The advice of a good friend was an acceptable 'short cut' for respondents with a perceived lack of time and interest. A dieter in the sample was advised by her dieting group to look out for low fat foods. Knowing also that she must avoid calorific foods, she formed the assumption that that 'low fat' must equate to low calories, subsequently glossing over indications of



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high calories on food Brand information (such as high sugar, high GI, portion sizes in relation to the amount of fat/calories etc).

'Common sense' approach

Most of the sample fell within this group. Very few people dismissed food Brand information completely and for most, shopping tended to be guided by their existing common sense or 'knowledge'(even if this knowledge is based on misconception) and by specific conditions, allergies, and other dietary requirements, which force them to be aware of certain food information.Respondents were happy with their choices although can be misguided. In most instances participants said they are satisfied with the information they obtain from food Brand informations, however not all were interpreting the meaning of information entirely correctly.For example; one participant bought particular bread because it stated 'brown bread' - mistakenly assuming 'brown bread' meant 'wholegrain'. Another participant picked up a yogurt marked 'reduced fat' assuming this meant low fat.Ingrained assumptions about food, and repeated purchase of food based on these assumptions, evidently influenced shoppers' engagement with and interpretation of particular information on food Brand informations.

Shoppers use 'beacons' to guide their shopping

Within the 'common sense' group participants used specific words or symbols to help them quickly identify 'approved' food items.Participants explained how they had come to associate certain symbols with the information they want to know, which then act as 'beacons' on subsequent shopping trips to make shopping more efficient. Specific wording or graphical images become 'short cuts' to information for the respondent encouraging habitual purchase, but also providing instant reassurance on the suitability of new products without the need for reading the Brand information in detail. A male respondentwas observed making a misguided assumption about a sandwich based on the description on the front of the packaging. The participant claimed he was allergic to mayonnaise but actually bought a 'cheese sandwich', which on close inspection, actually contained mayonnaise. He had assumed that because 'mayonnaise' was not specified in the description on the front of the packet the sandwich would not contain mayonnaise. The danger of relying on shortcuts to information is that the respondent may never assimilate the full picture because the short cut negates the perceived need to engage with other aspects of the food Brand information, especially the back of the pack. The result is that people may consume, avoid, prepare, or store incorrectly certain foods based on ingrained misconceptions. The present study also found that respondents draw assumptions about food products from stereotypes, which predisposes them to notice particular aspects of the Brand information. Selective visualization of the packaging serves to back up their assumptions - e.g. participants said it was logical to assume that pasta is made in Italy, therefore seeing an Italian flag on the packet complied with expectations and signified authenticity.

The impact of special dietary requirements

The majority of Brand information reading was driven by selective attention to specific information pertaining to a particular health condition or dietary requirement. Use of food primary, secondary and tertiary packs were largely driven by underlying health conditions / requirements, religious beliefs and lifestyle choices – e.g. allergies, high blood pressure, vegetarian / vegan, dieting. Health issues heighten knowledge and awareness of particular foods to consume or avoid, and the severity of the condition determines the sophistication of information sought. For example; a sufferer of high blood pressure wanted to know the actual salt content of the food and consulted the nutrition information chart; an individual of Muslim faith wanted to check the list of ingredients for gelatin; a less strict vegetarian was reassured on the suitability of a food product by simply seeing the green certified 'V' symbol.'I need to be mindful of the balance between protein and carbs at all times.

Detail Seekers - Food is central to well-being

Detail seekers were a small portion of the sample, and were differentiated from the majority by their passion for food, understanding of food Brand information, and stated need for a sophisticated level of information. These respondents stated a preference for buying food from farmers markets and local butchers, and mentioned various non-supermarket sources they interact with in order to find out about food, such as the internet, TV cookery/ documentary programs, nutrition and recipe books. Food plays an important role in their lives and are directly related to well-being, and during the purchase decision, price was secondary to the perceived benchmark.Of the



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detail seekers, some understood primary, secondary and tertiary packs thoroughly, almost to the point of questioning the authenticity of all packaged food and favoured local farmers markets or smaller independent sources (e.g. farm shops, butchers, growing their own vegetables). Consuming high benchmark food revolves around the sense of worth associated with considering animal welfare, supporting local farmers, and eating truly authentic food. Others within the detail seekers group were highly motivated to understand the information on food Brand information, with health and optimal nutrition as the focal point. For example, one participant reported browsing the detail on the Brand information of products to check for GM or artificial ingredients. Detail seekers were highly aware of food primary, secondary and tertiary packs, and gave detailed rationalizations of purchases, but Brand information reading was not always manifest in observed behaviour.

Legislation versus marketing

The supermarket shelf is a competitive environment and accordingly manufacturers are keen to present their product in the best possible light.Such marketing claims often supply quick reassurances without providing the full picture. These non-governed claims can either inform the respondent or can lead to misconceptions because respondents perceive that they negate the need to read the back of the Brand information. Forexample'farm fresh produce' provides a reassurance of benchmark or about how healthy the food is, without providing any specific information. Manufacturers must also comply with regulations, and respondents sometimes perceived that'unnecessary' information clutters the food Brand information. Because of the reassurance provided by the marketing claims, respondents consider mandatory information as unnecessary. This behaviour is at odds with the government view that this is important information, which the respondent needs to know.Respondents were very tactile when selecting food produce, and being able to see food through the packaging was very important and used by participants as a shortcut for judging food benchmark - especially for meat, fruit and vegetables. There is an overriding assumption that large supermarket 'brands' (e.g. Reliance Retail, Big Bazaar, Spencer's, SPAR, Easy Day), guarantee a level of food 'safety', alleviating respondents of the responsibility to review primary, secondary and tertiary packs to ensure the food's safety.Respondents assume that supermarkets have an obligation to, and a stake in, complying with government regulations regarding food primary, secondary and tertiary packs. 'The supermarket won't sell anything that's unsafe for you, they have to follow regulations. Thus, many respondents feel they can safely ignore the majority of food primary, secondary and tertiary packs information on food products in major supermarket chains, because the supermarket assures a certain level of benchmark. There is no need to worry about reading food Brand information as someone else is worrying about the benchmark/safety of the food for me'(Female, young, Noida). This attitude was reinforced by generally positive experiences with food products purchased by the majority of respondents - respondents see not paying attention to food primary, secondary and tertiary packs as having limited negative consequences.Umbrella instore signage quickly communicates several messages to the respondent pertaining to the benchmark of its offering at the same time - 'free range' equates to good animal welfare, good nutrition, and 'healthy', which all equate to high benchmark.Trusted brands can steer focus away from other Brand information, and evoke assumptions that familiar brands signify safe, good benchmark ingredients.Participants looked less closely at branded products in the tasked purchases in the Retail Lab, glossing over less healthy indications. Respondents tended to assume superior health value in branded products compared to own Brand information and Value equivalents. For example, when asked whether a branded high sugar and salty cereal with low fiber is better or worse benchmarkthan an own Brand information box of whole wheat flakes, participants still perceived the branded cereal to be of higher benchmark, despite being able to decipher higher and lower nutritional benchmark within a branded range of cereals. I assume branded products taste better and have been produced in a more controlled way'(Female, Retail Lab). Benchmark is also a learned behaviour, full of deep-rooted personal associations and emotional bonds. Trusted family favorites carry emotional ties - childhood memories, nostalgic moments like an anniversary, birthday, or holiday. Brand is very strong in this, offering a degree of constancy and standardization, which can be applied to other products under the same brand, and has a big impact on the perception of benchmark - eclipsing other messages about the benchmark.

For example branded cornflakes were chosen over retailer's own brand equivalent even though the respondent admitted the nutritional information said all the same things, and equally, branded chocolate cereal was chosen in preference to own brand bran flakes even though the participant knew that nutritionally the product is inferior.'My mum gave me Kellogg Rice Crispies when I was a kid, it must be good for you'(Male, Retail Lab)



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Pack materials and Colour

The packaging materials used and the colors used also had a strong impact on the perceived benchmark of a product. Whilst many respondents equated basic packing, thin unbleached cardboard (e.g. Tesco Value), lots of white space (e.g. Sainsbury's basics) with low benchmark goods, other respondents thought the use of more basic packaging signified a higher degree of eco-awareness and were thus higher benchmark products. Other respondents signified a masculine meaning from the use of basic packing reflecting the different cultural contexts of those different respondents. A case in Noida where the impact of text size was obvious encounter where an older shopper with poor eyesight and health complications limiting their intake of salt and saturated fat intake required a family assistant to shop with them who could navigate food primary, secondary and tertiary packs. The assistant accompanied the shopper, reading packing fine print to ensure the products purchased met with their dietary requirements.

Practical and Navigational difficulties

Whilst the use of small font sizes on packaging can be problematic from a practical point of view (i.e., respondents with poor eyesight having practical difficulty reading the information presented), the use of small font sizes also has an impact interms of the prominence of the. Logo and colors presented, and can increase the impact of overcrowding and the competition between competing logo and colors on the Brand information. Indeed, people are likely to acquire more health requirements as they age, but their ability to read the Brand information decreases as they age. Older shoppers within the sample reported needing assistance with obtaining important health information from the food primary, secondary and tertiary packs that they were using.Whilst the physical proximity of other logo and colors (text or pictures) may overshadow a food package and obscure the messages therein, the logo and colors present on a Brand information can also be obscured by elements that are added to the packet or shelf. The message presented is 'this is exceptional value' and this sign and its message overrides the other messages present (with the exception of the core description of the pack content and the date Brand information), and thus it can make other information (logo and colors) redundant. It would seem that there is a link between the impact of the special offer sign and the shelf primary, secondary and tertiary packsboth in terms of the price Brand information or the name it is assigned. Some respondents reported struggling with the volume of information provided on food packages suggesting that there was simply too much. Their response suggests some messages become confused by the multitude of information. Just as a road sign may be obscured by foliage or perhaps by another road sign, the messages on packets are being obscured by other information which is perceived as superfluous by respondents. As previously mentioned, the challenge is that different respondents think that different elements are superfluous - aspects of the food Brand information that are valued by one respondent might be considered useless by another. Unless the information is essential to the individual, it is deemed unnecessary. The cultural values, economic drivers, aspirations and levels of knowledge all influence the meaning assigned by respondents to each component of the Brand information, with each component working as a sign conveying a signified meaning.

Graphics

Pictures can have a dominant effect, sometimes creating a misleading impression of the product and disengaging respondents with other information. For example, a certain nutritional supplement drink was perceived (and dismissed) as a diet shake by one participant due to the graphical image of a pink liquid in a glass on the packaging. The respondent subsequently did not notice that the product stated it is endorsement by health care professionals next to the image, and turned their attention away from the Brand information (demonstrated by eye-tracking).Some respondents did not want to turn over certain products, preventing them from reading the back of the Brand information – particularly with ready meals, where several participants explained that they were avoiding getting the product on the cellophane.Having comparable measures are influential in the respondents' engagement with the claims on a food Brand information, and a lack of such measures can cause participants to ignore certain information.For example; one respondent during a tasked purchase in the Retail Lab stated that a'strength' indicator of '4' on a packet of tea was meaningless because there were no other reference points to offer sensory or indexical evidence of the tea and its qualities.Additionally, claims such as '30% less fat' were attractive to some shoppers whilst others remarked that without a measure of what came before, in order to compare the reduction, this information is meaningless. Claims such as '70 calories per bar' were received more positively.Such a huge diversity of food Brand information usage makes it difficult to



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generalize about ways in which to engage people with food Brand information. However, the research highlighted several common influences on purchase decisions. The shortcuts participants looked for during their shopping trips varied greatly, although all tended to be either in a large font, a recognizable symbol, or a familiar format. Large fonts had stopping power, and familiar brands / brand ranges deemed a 'safe bet'.'I know the varieties with less fat - I look for the things that say 'healthy choice'' (Female, empty nester, Belfast). 'I saw the green recycling triangle. I'm trying to reduce the amount I'm putting in my black bin, and I'm teaching my daughter about it. This is something she can look out for'(Male, young family, top-up, Belfast). In general, strong visual cues, such as ticks, endorsements (i.e. by organizations perceived by respondents to be independent and knowledgeable) influence purchases by providing instant positive reassurance, enhancing the credibility of the packaging message.'It caught my eye because it mentioned it won a slimming award'(Female, older family, Glasgow). Simplicity had a strong impact, because it allowed the information to stand out more prominently from the Brand information, giving it more stopping power. 'The [cereal bar] Brand information is good because it clearly lists in large print the ingredients. It makes me want to buy it'(Male, young family, Belfast).People spent a lot of time looking at Brand information on baby food - purchases were strongly influenced by: ages/stages, preparation, percentage of natural ingredients, and whether the product was organic. Respondents were highly influenced by advice from others, and looked for shortcuts to indicate the required information.'I want to see '70% apple, 30% pear' in really big font'(Male, young family, Belfast). Participants were also observed placing an increased importance on nutrition information when shopping for other people generally, and especially when buying for children. When buying for other people participants tended to look out for reassurance of specific qualities such as no E numbers, no caffeine, and low fat (or most frequently 'lite'). Information pertaining to organic, animal welfare, or food miles was deemed to be less important, and participants buying for large families (especially with teenagers) tended to state more emphasis on price than participants in other life stages. Country of origin information was generally not a priority when shopping in the supermarket, although the information had more of an impact on certain types of food.'The only thing I care about country of origin is where my beer comes from'(Male, pre-family, East Delhi)'I'm not bothered where it [bread] comes from, the look and feel is more important'(Female, older family, Greater Noida). 'The look and feel of fruit is more important than where it says it's come from' (Female, pre-family, Noida)'I'd never buy French beef'(Female, pre-family, Ghaziabad). The impact of country of origin information relates to respondents' attitudes towards elements of benchmark. The benchmark is the Red dot logo means a food has been made by a member of a food assurance scheme overseen by Assured Food Standards. This means it has had to meet certain standards when it was being made, not measured or considered in absolute terms but instead is a relative measure and suggests a higher benchmark than a similar product, which does not specify 'Country of manufacture'. This will not be the case for all respondents and is dependent upon the meanings they assign, whether they associate 'Country of manufacture' with benchmark, whether they are concerned about benchmark, or, if benchmark is an irrelevant detail when compared to value. The gap between the literal message and the conveyed message depends on the individuals own 'cultural context', i.e. their own set of individual values, associations and concerns. Thus, the gap between the literal meaning and the conveyed message may vary according to the individual who is reading the Brand information. Similarly, this can explain why 'local'can to convey 'organic' or 'high benchmark' despite the actual definition of local differing from that of organic.Organic also indicated a higher price to participants, which was another stated reason for not prioritizing it.

Retail Lab Mock purchase

Respondent had low interest in where food comes from, and did not look for this information on the Brand information. Previous knowledge directed choices in the task – she mentioned that coffee is from Colombia, tea is from India, and spaghetti is from Italy.I chose the 'Assam Teabags' because thought 'I know tea comes from India' then looked for the info on the packaging.China, India and Brazil were mentioned as having particularly strong links with tea and coffee and any reference to these countries made on the packaging of such products immediately clouded the reception of other country of origin information on the front of the Brand information.Additional words such as 'authentic' strengthened confirmations even further.'I saw 'Authentic Italian' on the pasta and thought 'it must be where it's from', although these things could be from Japan for all I know'(Female, Retail Lab). If a food is strongly associated with a particular countryrespondents unwittingly dismiss information which does not comply with their assumptions.In the absence of precursors to guide



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assumptions, country of origin information tended to have less impact. For example, the Fair Trade sign was noticed spontaneously when it was needed to confirm expectations that the product originates from a third world country (especially if there were no other obvious references to a particular third world country such as a country flag), but information such as 'packaged in the NCR' was very rarely spontaneously noticed.Participants assumed foods packaged in the NCR rather than reading information telling them this, occasionally over simplifying matters and equating country of origin with the nationality of the retailer.For processed / pre-packaged foods such as crisps and pre-prepared sauces, references to countries were mostly perceived as where the recipe originates from, and did not imply the individual ingredients were made/packaged/ or originated in that country. For example, 'Mexican' crisps communicated a convincing message about authenticity of the taste. Conducting accompanied meals in respondent's homes revealed that the information people say is important to them when buying food is not necessarily supported by what is actually in their cupboards. Actual purchases were influenced to a much lesser extent by food (air) miles and organic, despite respondents being aware of these issues. In reality people use a minimal amount of food primary, secondary and tertiary packs when in the home and when preparing familiar or routine meals, or using familiar ingredients or cooking methods. Food Brand information used more when cooking something unfamiliar or using new products. During the accompanied meals, the accompanied shopping trips, and the eye-tracking work, participants stated that the use by / best before date serves as a reassurance of the food's shelf life and helps them to plan how much food to buy, and which meals to cook. However, whilst essential in the store, there was little evidence of participants planning meals around date Brand information on food.For example; researchers observed weekly menus and shopping lists, which participants explained were based on family requests and what they themselves liked to cook, rather than on using up ingredients from the fridge.'Best before' and 'use by' are frequently confused terms, and low understanding leads to relaxed attitudes towards expiry dates once in the home.For example; many participants eat eggs past their best before date, and others throw away meat before the specified date if they believe it is showing logo and colors of going of f - e.g. browning, smelling bad.Most participants used the term 'use by' date, and made no differentiation to 'best before'. The exception to this usage was with fresh/perishable food, whereby most participants placed more importance on the 'use by' date. Their use of 'best before' and, in particular, 'use by' dates stemmed from a desire to maximize the food's value, both in terms of products lasting longer and, thus, providing better value for money, and to a lesser extent, maximizing the food's nutritional benchmark. Cooking instructions and storage information were low down on the priority list for participants when shopping. Generally, participants were not looking at instructions or freezer stars, and were unaware of how long they could freeze something.A large proportion of the sample did not understand the meaning of the date Brand information in terms of freezing, and said they would throw away something past the use by date despite it been frozen within the date. People were also observed freezing and reheating food such as rice, and were unaware of the potential risks to health of doing this. Many do not read or assimilate information regarding 'use within three days' and were observed storing opened jars in the cupboard or fridge for weeks, rather than following the storage instructions on the Brand information. Respondents explained that they did not look for date information on tinned and pre-frozen items, because they are less concerned about food Brand informationinformation in general for tinned items.'I don't look at the date on frozen or tinned food, unless it's kosher'(Female, empty nester, East Delhi).

Non eye-tracked shopping trips

For the initial stage of the research, non-eye-tracked accompanied shopping trips with individual respondents were conducted (Reliance Retail, Big Bazaar, Spencer's, SPAR, Easy Day). Overall as a research tool the accompanied shops worked very well, particularly as a first stage of research allowing broad-brush examination with some more detailed probing. In broad terms, shoppers' behaviour patterns were easily identified and could be followed, understood, appraised and dissected relatively easily. When different behaviors were apparent for different types of product, or produce, this could be explored with participants and helped thinking to develop accordingly. The ASTs allowed the research team to start developing the spectrum of shopper types and provided useful insight into all aspects of primary, secondary and tertiary packs use, in particular the use of short cuts and the role of pricing in overriding other primary, secondary and tertiary packs information. Effective observation is core to the success of this approach. All the researchers working on this project are experienced in observing participant behaviour. Although an essential component of this approach, observation alone presented only a partial picture; the de-brief questioning was a key complimentary component in order to



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gain a fuller picture. Two approaches to questioning were adopted during the accompanied shops. The first and most commonly used approach was to allow the shopper to conduct their shopping trip without any intervention from the accompanying researcher. The researcher followed the shopper around the store observing their behaviour, making notes. Questions were only asked after the shop had been completed, i.e. when loading the conveyor belt, or after payment for their shopping had been made. The shopper was asked why they had purchased certain items and for example, why a particular pack was chosen rather than another one they had considered. The researchers on occasions also took goods that had been rejected to the tills and asked participants to talk through why they had chosen one over the other. The location for questioning varied and depended upon participant preference, with the majority taking place in a cafe or coffee shop near to, or in, the supermarket. This approach, of reserving the questions until the end of the shop, was used as the basis to seek to minimize any possible research effect whereby the asking of questions raises the priority of particular issues within the participants mind and they may then alter their behaviour as a result. Some of the accompanied shops were longer full shops. If during these longer shops the researchers reached a point at which they were happy that they had identified the shoppers behaviour patterns (with regards to a variety of different goods) and they felt there was more to be gained by asking the participant to talk through their actions, then this was done during the latter stages of the shop. This occurred in a limited number of shops.

Participants were asked to commentate or answer questions for a proportion of the shop - once the researcher had had sufficient time with the participant to have a better feel for the issues being observed, and thus had a baseline of observed behaviour from which to judge and assess the reported behaviour. If described behaviour was at odds with the data obtained from observation, additional questions would be asked to try and work out what was out of place. In such a situation it may be that nothing was out of place but that actually behaviour simply differed for different food types. Whilst the posing of questions does risk the aforementioned research effect, the researchers in the field felt there was more to be gained from the comparative analysis of observed and reported behaviour. Thus, where appropriate, this approach was used. There was little regional variation in the non-eye tracked ASTs. Within, on average, 2-3 minutes of the accompanied shop commencing, participants quickly forgot about the researcher's presence, becoming subsumed by the routine of undertaking their shop. A limitation of the non-eye tracked approach is that an exploration of the fine detail of behaviour depends on detailed and targeted questioning by the researcher, who is identifying behaviour and then testing whether or not their hypothesis of the behaviour is correct by questioning the participant. The non-eye tracked accompanied shopping trips helped to identify issues to develop further in the subsequent eye tracked shopping trips.

Tasked shopping purchases in the Retail Lab were as follows:

- 1. Find a product that you consider gives you information about its country of origin
- 2. Find a milk product you can use every day next week
- 3. Find a 'high benchmark' and a 'low benchmark cereal

Conclusion

Respondents demonstrate very low engagement with food Brand information for habitual purchases. Individual dietary requirements are key in determining the use of and engagement with different elements of food Brand information. Respondents avoid reading the back of food Brand information and use words or symbols on the front as 'beacons' to quickly guide shopping. (Non-regulated) wording and graphics can mislead, overshadow, clutter, or disengage respondents from other information. Price can eclipse other aspects of the Brand information, especially for respondents with lower incomes. Large store brands provide assurance of high food benchmark. Well-known brands have a 'halo effect' – signifying benchmark and safety, and can distract from other information. The importance of food Brand information increases when buying for other people, especially babies/children. 'Best before' and 'use by' are confused terms - Low understanding leads to relaxed attitudes towards expiry dates once in the home. Country of origin information has impact on different levels: Safety, animal welfare, food miles, and authenticity. 'Country of manufacture' acts as a general hygiene factor. The main implication of the research is that all aspects of food primary, secondary and tertiary packs are important to 'someone', but no aspects are equally important to everyone. This means that it is virtually impossible to advice on improvements to the content and format of existing food primary, secondary and tertiary packs as respondents engage with different elements to varying degrees due to the different lifestyle factors involved in



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their motivations for purchasing different food products. Shoppers' use of shortcuts may result in information on food Brand information being pushed down the hierarchy of importance, even if there is information present on the Brand information that at, closer inspection, would give deeper, more relevant information. There is therefore room for more education on various health claims so people can make better-informed choices. The research demonstrated that shoppers rarely engage with food packs information, particularly for habitual purchases, with the exception of the description, the brand, the date and the price. Encouraging shoppers to engage with food primary, secondary and tertiary packs remains a significant challenge for the FSA. The respondents researched demonstrated a lack of awareness of the content, origin, and shelf life of their food; where they can find this information; why this information is important; and how dismissal of certain elements of food primary, secondary and tertiary packs may affect individuals.Within this report there are numerous case study examples demonstrating how specific aspects understood. These case study examples give insights into areas where there is room for further educating people to allow them to make better informed choices, specifically:Branded umbrella assurances are the most likely to persuade respondents to buy products from a single sourceThere is potential for high engagement with specific information pertaining only to animal welfare. There is potential for engaging people with food Brand information when they have young children. At present respondents are daunted by the back of the Brand information - separating out legislation from marketing claims would help shoppers navigate the Brand information.Respondents perceive food Brand information as overcrowded and important messages were being obscured by other information, which is perceived as superfluous by respondents. The challenge is that different respondents think that different elements are superfluous.Education on best before/use by dates could potentially help to reduce food wastage. There is a need for clearer, more eye-catching messages around storage and date Brand information on tinned and pre-frozen items, where respondents are less concerned about food Brand information.

Whilst the eye tracked shopping trips provided a valuable insight into respondents point of sale behaviour, participants were also tasked with specific questions in the Retail Lab in a fourth phase of the research. The Retail Lab is a mock store, which can be laid out to represent aisles within a variety of different types of outlets. The layout of the store can be changed for different scenarios to allow different types of tests. Whilst it is not a 'real' retail environment this method was chosen as it is an ideal tool to use to assist in analyzing more specific areas of food primary, secondary and tertiary packs(e.g. country of origin, best before dates, and perceptions of benchmark), and allows a degree of control, in terms of merchandising and access, which is difficult to achieve in 'real' retail environments. Individually, participants were tasked with making three selections from the shelves within the retail lab. Participants wore field of vision glasses (a less sophisticated version of eve-tracking which allow researchers to track the line of sight), and after the purchases were made participants took part in an interview using the field of vision data to unpick, discuss, and explore their use of food Brand information in their selection process. The retail lab tasked purchases (using field of vision glasses) were useful in that they allowed exploration into the issues that underpin Brand information use behaviour, rather than focusing only on what people were looking at. This helped identify issues to be followed up in the desk research stage. The research team identified that whilst people were concerned with the logistics and practicalities of the Brand information themselves, there was a 'precursor stage' that steered their use of those Brand information, for example benchmark being considered in terms of brands (e.g., Kellogg's), or in terms of nutritional goodness, or in terms of packaging materials. This precursor stage reflects the wider cultural context within which food purchases made and as such were a useful lead in to the semiotic stage. The final six tasked purchases in the Retail Lab were eye-tracked, which allowed the research team to explore in more detail issues regarding country of origin, date Brand information, and wording/symbols perceived as denoting 'benchmark', which were highlighted throughout the progression of the study as areas requiring additional exploration.Qualitative research relies upon the skills of the researcher conducting the research to a greater extent than large scale quantitative work, whereby it is the benchmark of the questions posed that has the greatest impact, not necessarily the benchmark of the way in which these questions are asked. The researchers involved in this research considered the analysis of the findings and to make the outputs insightful, useful and useable from the outset of this project. The researchers relied on both creative techniques such as 'brainstorms' as part of the analysis in addition to more structured approaches such as the development of analysis grids: listing the issues identified as relevant and the frequency with which they occur, the different variations evident, and the significance and impact of that issue. This section of the report looks at the semiotics of food primary, secondary



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and tertiary packs – at the logo and colors and strategies employed in wrapping and describing food. It was based upon 'desk research' following the fieldwork phases of this project. An examination of any particular type of food product reveals that the packaging and primary, secondary and tertiary packs is highly conventionalized. Here, we have looked at a) butters/spreads and b) pizzas, by way of example. There are strong consistencies in packaging solution, color choices for background and text, 'markers' showing variations within the type, types of promotional claim, imagery, types of brand name. This exposes the apparent paradox of cooperation in competition. Competing brands of a product dress themselves up in similar clothing and talk about themselves in similar terms. This reflects the way designers and copywriters absorb, and reproduce, existing conventions when packaging a particular type of food, and the way that focus groups of respondents confirm that, the resulting delivery 'feels right'. The primary, secondary and tertiary packs and packaging of food are integral and inseparable. Packaging is the surface on which primary, secondary and tertiary packs is inscribed and the two inevitably, reciprocally shape each other. These include description of use, ingredients, nutritional properties, suitability for those with special dietary needs, recycling of packaging, and country of origin. Consequently, food primary, secondary and tertiary packs have become a collage of disparate, sometimes competing messages. It is a mixed-motive medium. Some of its product messages are cautionary in intent, enforced by regulation. However, most are voluntary, exuberant, self-expressive and self-promotional. There are instances when the interests of the manufacturer diverge from those of the respondent and regulator – for example, when a food contains high levels of salt, fat or sugar, or an ingredient has received adverse publicity. Then, the manufacturer, who scripts the primary, secondary and tertiary packs, and controls the positioning and emphasis of items, generally has effective control of the overall impressions given. Any particular respondent will have their own agenda, and is unlikely to be interested in the totality of primary, secondary and tertiary packs. In these light, primary, secondary and tertiary packs resembles other promotional material, such as directmail and radio advertising, where the respondent's goal is to exercise their selective attention, securing key elements of information, while ignoring the broad mass of material.Because it serves a range of descriptive tasks, some technical (detailing food ingredients and constituents), some mundane (for example, explaining how to cook the food) primary, secondary and tertiary packs is a hybrid text, presenting a range of different vocabularies and sets of assumptions. Some of the component messages may be patronizingly simple. Some descriptions of ingredients and constituents may presume knowledge that the general respondent lacks.Besides describing product, or rendering its content visible, packaging serves a range of other functions. It 'alter-casts' the audience, aslogo and colors them identity, makes assumptions about their interests, and values. Primary, secondary and tertiary packs, through the properties of its language, and complexity of its propositions, makes assumptions about the educational level of the respondent. The rhetoric of the product-promotion assumes the likely motives of the respondent. Primary, secondary and tertiary packs are also 'phatic' in offering a relationship between producer and respondent. The most palpable, tangible, aromatic evidence comes in the open market where the purchaser is able to touch, taste, smell and test the product. This old-fashioned way of doing business survives in microcosm in the supermarket with displays of loose fruit and vegetables, at the deli-counter - where purchasers were invited to sample some product – or on the floor of the shop with special promotions. Generally, though, there's a barrier. In the interests of hygiene, purchaser and raw product were kept apart, by the width of Clingfilm, at least. This leaves 'the sight of food' as the primary indexical evidence available to the purchaser.Transparency /visibility become an overriding goal in food packaging, because it enables - direct, sensory product evidence; validation of benchmark claims; comparison to competitor product; imagined consumption.

References

- [1] Brozena, c. (2004) The 'big picture ' in Northern India. Ecology and farming 36 pp. 1-12 bunch, r. (2003) Adoption of green manures and cover crops. LEISA 19 (4) p.16-19
- [2] Bunch r. (1990) The Potential of intercropped green manures in Third World villager agriculture, Paper presented to IFOAM conference on the socio-economics of organic production.
- [3] Budapest 1990 byrne, j., l. glover & h. f. alroe (forthcoming, 2006) Globalisation and sustainable development: a political ecology strategy to realize ecological justice.
- [4] Carrigan, M., Attalla, A. (2001), The myth of the ethical consumer do ethics matter in purchase behaviour? Journal of Consumer Marketing [Internet] 18(7) pp. 560-78.
- [5] Chinnici, D'Amico & Pecorino (2002) A multivariate statistical analysis on the consumers of organic



ISSN: 2349-5197 Impact Factor: 2.715



INTERNATIONAL JOURNAL OF RESEARCH SCIENCE & MANAGEMENT

products [Internet] British Food Journal.Vol 104 (3/4/5) pp. 187-199.

- [6] Cotterill, R., and Franklin, A. "The Urban Grocery Store Gap."Food Marketing Policy Center, University of Connecticut.Food Marketing Policy Issue Paper 8 (1995).
- [7] Community Health Councils Inc. Does Race Define What's in the Shopping Cart?Community Health and Education. Los Angeles, CA: Community Health Councils Inc., 2008.
- [8] Community Farm Alliance.Bridging the Divide. Growing Self-Sufficiency in our Food
- [9] Clifton, K. "Mobility Strategies and Food Shopping for Low-Income Families: A Case Study." Journal of Planning Education and Research 23 (2004): 402-413.
- [10] Chung, C., and Myers, J. "Do the Poor Pay More for Food? An Analysis of Grocery Store Availability and Food Price Disparities." Journal of Consumer Affairs 33 (1999): 276–296.
- [11] Campbell, H., and Coombes, B. 1999. Green protectionism and organic food exporting from New Zealand: Crisis experiments in the breakdown of Fordist trade and agricultural policies. Rural Sociol. 64:302-319.
- [12] Campbell, H., and Liepins, R. 2001. Naming organics: Understanding organic standards in New Zealand as a discursive field.Sociol.Ruralis 41:21-39.
- [13] Carson, R. 1962. Silent Spring. Houghton Mifflin, Boston, MA.
- [14] Clunies-Ross, T. 1990.Organic food: Swimming against the tide?Pages 200-214 in: Political, Social, and Economic Perspectives on the International Food System.T. Marsden and J. Little, eds. Avebury Press, Aldershot, UK. Crop Management 29 April 2013
- [15] Constance, D. H. 2008. The emancipatory question: The next step in the sociology of agri-food systems.Agr. Hum. Val. 25:151-155.
- [16] Constance, D. H. 2010. Sustainable agriculture in the United States: A critical examination of a contested process. Sustain. 2:48-72.
- [17] Constance, D. H., Choi, J. Y., and Lyke Ho-Gland, H. 2008. Conventionalization, bifurcation, and quality of life: Certified and non-certified organic farmers in Texas.South.Rural Sociol. 23:208-234.
- [18] Constance, D. H., and Choi, J. Y. 2010.Overcoming the barriers to organic adoption in the United States: A look at pragmatic conventional producers in Texas. Sustain. 2:163-188.
- [19] Coombes, B., and Campbell, H. 1998. Dependent reproduction of alternative modes of agriculture: Organic farming in New Zealand.Sociol.Ruralis 38:127-145.
- [20] Diop, a. (2000) Sustinable Agriculture: new paradigms and old practices?Increasing production with management of organic inputs in Senegal.Environment, Development and Sustianability 1 (3-4) pp.285-296.
- [21] Djigma, a, e. nikiema, d. lairon and p. ott (Eds.) (1989) Agricultural Alternatives and Nutritional Selfsufficiency.
- [22] Ecology and farming (2004a) Formal Organic Certification not the only answer. Ecology and Farming 36 p.39-40.
- [23] Ecology and farming (2004a) Development of Local Organic Markets. Ecology and Farming 37 pp31-2
- [24] Einarsson, p. (2001), Agricultural trade policy as if food security and sustainability mattered. Church of Sweden Aid, Forum Syd and the Swedish Society for Nature Conservation.
- [25] Earth wear; Fashion goes green --- and no, we're not just talking about colour (2006) [Internet] Available from: http://www.fairtrade.org.uk/> [Accessed 18 May, 2006] Eco-friendly fashion 2006. [Internet] Available from: http://www.fairtrade.org.uk/> [Accessed 18 May, 2006] Eco-friendly fashion 2006.
- [26] Eco-labels: Their impact on domestic markets and international trade flows (1999) [Internet] Available from ProQuest database [Accessed 28 September, 2006] Focus: Ethical behaviour: how you can make a difference (2006) [Internet] Available from Lexisnexis database [Accessed 20 September, 2006]
- [27] Fao (2003) Subsidies, food imports and tariffs key issues for developing countries. FFAO newsroom focus http://www.fao.org/english/newsroom/focus/2003/wto2.htm. Viewed 9/02/06 Forces of nature (2006) [Internet] Available from ProQuest database [Accessed 20 September, 2006]
- [28] Fisher, B., and Strogatz, D. "Community Measures of Low-Fat Milk Consumption: Comparing Store Shelves with Households." American Journal of Public Health 89, no.2 (1999): 235–237.
- [29] Franco, M., Roux, A., Glass, T., Caballero, B., and Brancati, F. "Neighborhood Characteristics and Availability of Healthy Foods in Baltimore." American Journal of Preventive Medicine 35, no.6



INTERNATIONAL JOURNAL OF RESEARCH SCIENCE & MANAGEMENT

(2008): 561–567.

- [30] Fishman, C. 2006. The Wal-Mart Effect.Penguin Books, New York, NY.
- [31] Friedland, W. H. 1984. Commodity systems analysis.Pages 221-235 in: Research in Rural Sociology, Vol. 1.H. Schwarzweller, ed. JAI Press, Greenwich, CT.
- [32] Giller, k. (2003) Kick starting legumes. LEISA 19(4) p19
- [33] Giovannucci, d. (2006). Answering important questions about Organics in Asia. In Ecology and Farming 39
- [34] Gereffi, G., and Korzeniewiez, M. 1994. Commodity Chains and Global Capitalism.
- [35] Praeger Press, Westport, CT.
- [36] Gibbons, P., and Ponte, S. 2005. Trading Down: Africa, Value Chains, and the Global Economy.Temple Univ. Press, Philadelphia, PA.
- [37] Goodman, D. 1999. Agro-food studies in the "age of ecology": Nature, corporeality, bio-politics. Sociol.Ruralis 39:18-38.
- [38] Greene, C., Dimitri, C., Lin, B. H., McBride, W., Oberholtzer, L., and Smith, T. 2009. Emerging Issues in the US Organic Industry. Economic Info. Bull. No. 55.
- [39] USDA Economic Research Service, Washington, DC.
- [40] Guptill, A. 2009.Exploring the conventionalization of organic dairy: Trends and counter-trends in Upstate New York.Agr. Hum. Val. 26:29-42.
- [41] Guthman, J. 1998. Regulating meaning, appropriating nature: The codification of California organic agriculture. Antipode 30:135-154.
- [42] Guthman, J. 2000. Raising organic: An agro-ecological assessment of grower practices in California. Agr. Hum. Val. 17:257-266.
- [43] Guthman, J. 2004. Back to the land: The paradox of organic food standards. Environ. Plann. A 36:511-528.
- [44] Guthman, J. 2004. Agrarian Dreams: The Paradox of Organic Farming in California.Univ. of California Press, Berkeley, CA.
- [45] Guthman, J. 2004. The trouble with "organic lite": A rejoinder to the 'conventionalization' debate. Sociol.Ruralis 44:301-316.
- [46] Green chic: At last, top celebrities wake up to the plight of the planet (2006) [Internet] Available from Lexisnexis database [Accessed 10 September, 2006] Green fabrics make fashion statement in garment trade (2006) [Internet] Available from Lexisnexis database [Accessed 10 September, 2006].
- [47] Gallagher, M. Examining the Impact of Food Deserts on Public Health in Chicago. Chicago, IL: Mari Gallagher Research and Consulting Group, 2006.Available at http://www.marigallagher.com/site_media/dynamic/project_files/1_ChicagoFoodDesertReport-Full_.pdf.Gallagher, M.The Chicago Food Desert Report.Chicago, IL: Mari Gallagher Research and Consulting Group, 2009. Available at Galvez, M., Morland, K., Raines, C., et al. "Race and Food Store Availability in an Inner-City neighbourhood." Public Health Nutrition 11 (2007): 624–631.
- [48] Giang, T., Karpyn, A., Laurison, H., Hillier, A., Burton, M., and Perry, D. "Closing the Grocery Gap in Underserved Communities: The Creation of the Pennsylvania Fresh Food Financing Initiative." Journal of Public Health Management and Practice 14, no.3 (2008): 272-279.
- [49] Glanz, K., Sallis, J., Saelens, B., and Frank, L. "Nutrition Environment Measures Survey in Stores (NEMS-S) Development and Evaluation." American Journal of Preventive Medicine 32, no. 4 (2007): 282-289.
- [50] Gordon, C., Ghai, N., Purciel, M., Talwalkar, A., and Goodman, A. Eating Wel in Harlem: How Available Is Healthy Food? New York, NY: New York City Department of Health and Mental Hygiene, 2007.
- [51] Graham, R., Kaufman, L., Novoa, Z., and Karpati, A. Eating In, Eating Out, Eating Well: Access to Healthy Food in North and Central Brooklyn.New York, NY: New York City Department of Health and Mental Hygiene, 2006.
- [52] Howard, P. H. 2009. Consolidation in the North American organic food processing sector, 1997 to 2007. Int. J. Sociol. Ag. Food 16:13-30.
- [53] Halberg, n., h.f.alroe, m.t. knudsen and e.s. kristensen (Eds) (2006, forthcoming) Global Development of Organic Agriculture: Challenges and Promises. CAB International, Wallingford, Oxon.



ISSN: 2349-5197 Impact Factor: 2.715



INTERNATIONAL JOURNAL OF RESEARCH SCIENCE & MANAGEMENT

- [54] Hassane, a., p. martin & c. reij (2002). Water harvesting, land Rehabilitation ad Household Food Security in Niger. IFAD/ VrijeUniversteit Amsterdam.
- [55] Holt-gimenez (2002). Measuring Farms' Agroecological Resistance to Hurricane Mitch. In LEISA 17 pp.18-20.
- [56] How green are your jeans? (2006) [Internet] The Evening Standard (London). Available from Lexisnexis database [Accessed 10 September, 2006]
- [57] Hartford Food System.Connecticut's Supermarkets: Can New Strategies Address the Geographic Gaps?artford, CT: Hartford Food System, 2006. Available at Helling, A., and Sawicki, D. "Race and Residential Accessibility to Shopping and Services."Housing Policy Debate 14, no.1 (2003): 69-101.
- [58] Horowitz, C., Colson, K., Hebert, P., and Lancaster, K. "Barriers to Buying Healthy Foods for People with Diabetes: Evidence of Environmental Disparities." American Journal of Public Health 94 (2004): 1549–1554.
- [59] Iucn (2004) A Global Species Assessment.IUCN 2004 Red List of Threatened Species.http://www.iucn.org/themes/ssc/red_list_2004/GSA_book/Red_List_2004_book.pdf.
- [60] Viewed 25.01.06 Insight Consumer attitudes: Brands' behavioural therapy (2005) [Internet] Available from Lexisnexis database [Accessed 10 September, 2006]
- [61] Introducing Fairtrade (2005) [Internet] Available from: http://www.fairtrade.org.uk/> [Accessed 28 September, 2006] Inagami, S., Cohen, D., Finch K. B., and Asch, S. "You are Where you Shop: Grocery Store Locations, Weight, and Neighborhoods." American Journal of Preventive Medicine 31, no.1 (2006): 10-17.
- [62] Jetter, K., and Cassady, D. "The Availability and Cost of Healthier Food Alternatives." American Journal of Preventive Medicine 30 (2006): 38–44.
- [63] Jampkin, n., c. foster, s. padel and p. midmore (1999) The Policy and Regulatory Environment for Organic farming in Europe. In Dabbert et al (Eds.) Organic Farming in Europe: Economics and Policy Vol 2.Stuttgart-Hohenheim University.
- [64] Kaufman, P. "Rural Poor Have Less Access to Supermarkets, Large Grocery Stores."
- [65] RuralDevelopment Perspectives 13 (1998): 19–26. Available at Publications/rdp/tdp1098c.pdf.
- [66] Kinnear, T.& Taylor, J. (1998) Investigación de Mercados: Un Enfoqueaplicado. 5th Edition. Santafé de Bogotá: McGraw-Hill Latinoamericana S.A.
- [67] Krystallis&Chryssohoidis (2005) Consumers' willingness to pay for organic food: Factors that affect it and variation per organic product type [Internet] British Food Journal. 107(5), pp. 320-343
- [68] Kaltoft, P. 2001. Organic farming in late modernity: At the frontier of modernity or opposing modernity. Sociol. Ruralis 41146-158.
- [69] Klancy, K. and Rufh, K. 2010. Is local enough: Some arguments for regional food systems. Choices 25(1).
- [70] Klintman, M., and Bostrom, M. 2004.Framings of science and ideology: Organic food labeling in the US and Sweden. Environ. Polit. 13:612-634.
- [71] Klonsky, K. 2000. Forces impacting the production of organic foods. Agr. Hum. Val. 17:233-243.
- [72] Lobao, L. 1990. Locality and Inequality: Farm Structure, Industry Structure, and Socioeconomic Conditions. The State Univ. of New York Press, Albany, NY.
- [73] Lockie, S., and Halpin, D. 2005. The "conventionalization" thesis reconsidered: Structural and ideological transformation of Australian organic agriculture. Sociol.Ruralis 45:284-307.
- [74] Lockie, S., Lyons, K., and Lawrence, G. 2000.Constructing "green" foods: Corporate capital, risk and organic farming in Australia and New Zealand.Agr. Hum. Val. 17:315-322.
- [75] Lyson, T., and Guptill, A. 2004.Commodity agriculture, civic agriculture and the future of US farming.Rural Sociol. 69:370-385.
- [76] Lyson, T., Stevenson, G. W., and Welsh, R., eds. 2010.Food and the mid-level farm: Renewing an agriculture of the middle.MIT Press, Cambridge, MA.
- [77] Lea &Worsley 2005) Australians' organic food beliefs, demographics and values [Internet] British Food Journal 107 (11) pp. 855-869 Larson, N., Story, M., and Nelson, M.
- [78] MacRae, R. J., Henning, J., and Hill, S. B. 1993. Strategies to overcome barriers to the development of sustainable agriculture in Canada: The role of agribusiness. J. Ag. Ethics 1:21-51.



ISSN: 2349-5197 Impact Factor: 2.715



INTERNATIONAL JOURNAL OF RESEARCH SCIENCE & MANAGEMENT

- [79] McMichael, P. 2009. A food regime genealogy. J. Peasant Stud. 36:139-169.
- [80] Michelsen, J. 2001. Recent development and political acceptance of organic farming in europe. Sociol.Ruralis 41:3-20.
- [81] Magnusson, Arvola&Koivisto (2001) Attitudes towards organic foods among Swedish consumers [Internet] British Food Journal. 103(3) pp. 209-226
- [82] Makatouni 2002). What motivates consumers to buy organic food in the UK? Results from a qualitative study [Internet] British Food Journal.104 (3/4/5), pp.345-352.
- [83] Marks & Spencer announces first 'eco-factories' in update on £200m "Plan A" [Internet] Available from: http://www.marksandspencer.com> [Accessed 12 June, 2006]
- [84] McDaniel, C & Gates, R (2006) Marketing Research Essentials. Fifth edition. United States of America: Wiley.
- [85] Menkes, S. (2006) Eco-friendly: Why green is the new black [Internet] The International Herald Tribune. Available from Lexisnexis database Moral fibre, a beginner's guide to the UK market (2005) [Internet] Available from: < http://www.pan-uk.org/> [Accessed 1 September, 2006]
- [86] Morland, K., Wing, S., Roux, A., and Poole, C. "Neighborhood Characteristics Associated with the Location of Food Stores and Food Service Places." American Journal of Preventive Medicine 22 (2002): 23–29.
- [87] Morland, K., Wing, S., and Roux, A. "The Contextual Effect of the Local Food Environment on Residents' Diets: The Atherosclerosis Risk in Communities Study." American Journal of Public Health 92, no.11 (2002): 1761-1767.
- [88] Morton, L., and Blanchard, T. "Starved for Access: Life in Rural America's Food Deserts." Rural Realities 1, no.4 (2007). Available at www.ruralsociology.org/pubs/ruralrealities/issue4.html.
- [89] Mader p., fliessbach a., dubois d., gunst l., fried p., niggli u. (2002) Soil Fertility and Biodiversity in Organic Farming. Science 296, 1694-1697 mahale, prabha (2001) Organic Agriculture - an Alternative Means to Alleviate Hunger. Nature 2000, vol. 406 millstone, e. and t. lang (2003) An Atlas of Food: Who eats what, where and why. Earthscan, London.
- [90] Neckerman, K., Bader, M., Purciel, M., and Yousefzadeh, P. Measuring Food Access in Urban Areas. New York, NY: Columbia University, 2009. Available at http://www.npc.umich.edu/news/ events/food-access/neckerman_et_al.pdf.
- [91] Organic cotton facts (2006) [Internet] Available from: < http://www.ota.com/organic/mt/ organic _ cotton.html> [Accessed 7 November, 2006] Oasis to stock organic clothes (2006) [Internet] Available from Lexisnexis database [Accessed 6 September, 2006]
- [92] Kaiser, C. Healthy Food Access in Minneapolis: Initial Conversations with Residents, Minneapolis, MN: Institute for Agriculture and Trade Policy, 2009. Available at http://www.iatp.org/iatp/publications.cfm?accountID=258&refID=104952.
- [93] Pimentel, d. l. westra&r.f. noss (Eds) (2000), Ecological Integrity: Integrating Environment, Conservation and Health. Washington DC: Island Press, 2000, pp. 428,
- [94] Pretty, j. (2002) Lessons from Certified and non Certified Organic projects in Developing Countries. In Scialabba, N & C. Hattam (Eds)
- [95] Powell, L., Auld, C., Chaloupka, F., O'Malley, P. M., and Johnston, L. D. "Associations Between Access to Food Stores and Adolescent Body Mass Index," American Journal of Preventive Medicine 33, no.4 (2007).
- [96] Rundle, A., Neckerman, K., Freeman, L., Lovasi, G., Purciel, M., Quinn, J., Richards, C., Sircar, N., and Weiss, C. "Neighborhood Food Environment and Walkability Predict Obesity in New York City." Environmental Health Perspectives 117 (2009): 442–447.
- [97] Raynolds, L., Murray, D., and Wilkinson, J., eds. 2007.Fair trade: The challenges of transforming globalization.Routledge, New York, NY.
- [98] Rosset, P. M., and Altieri, M. A. 1997. Agroecology versus input substitution: A fundamental contradiction of sustainable agriculture. Soc. Nat. Resour. 10:283-295.
- [99] SSARE.2012. Organization website.Southern Sustainable Agriculture Research and Education Program, Griffin, GA.
- [100]Smith, E., and Marsden, T. 2004. Exploring the "limits to growth" in UK organics: Beyond the





INTERNATIONAL JOURNAL OF RESEARCH SCIENCE & MANAGEMENT

statistical image.J. Rural Stud. 20:345-357.

- [101]Sahota, a. (2006) Overview of the Global Market for Organic Food and Drink.In Willer&Yussefi (2006).
- [102] Scialabba, n. and c. hattam (eds.) (2002) Organic Agriculture, Environment and Food Security. Roma, FAO.
- [103]Smil, v. (2000) Feeding the world- A challenge for the 21st century.MIT Press, Cambridge (MA).
- [104] Stanhill, g. (1990) The Comparative Productivity of Organic Agriculture. In Agriculture, Systems and the Environment 30 pp.1-26
- [105]Sacramento Hunger Coalition. The Avondale/Glen Elder Community Food Assessment. Food Security in a South Sacramento Neighborhood. Sacramento, CA: Sacramento Hunger Coalition, 2004.
- [106] Sharkey, J., Scott, H., Daikwon, H., and Huber, J. "Association Between Neighborhood Need and Spatial Access to Food Stores and Fast Food Restaurants in Neighborhoods of Colonias." International Journal of Health Geographics 8, no.9 (2009): 1-17 Sloane, D., Diamount, A., Lewis, L., et al.
- [107] "Improving the Nutritional Resource Environment for Healthy Living Through Community-Based Participatory Research." The Journal of General
- [108]Small, M. L, and McDermott, M. "The Presence of Organizational Resources in Poor Urban Neighborhoods: An Analysis of Average and Contextual effects." Social Forces 84 (2006): 1697-1724.
- [109]Shaffer, A.The Persistence of L.A.'s Grocery Gap: The Need for a New Food Policy and Approach to Market Development.Center for Food and Justice, Urban and Environmental Policy Institute, Occidental College.2002. Available at www.departments.oxy.edu/uepi/publications/the_persistence_of.htm.
- [110] Sharkey, J., and Horel, S. "Neighborhood Socioeconomic Deprivation and Minority Composition are Associated with Better Potential Spatial Access to the Ground-Truthed Food Environment in a Large Rural Area." The Journal of Nutrition 138 (2008): 620–627.
- [111]Sharkey, J., Scott, H., Daikwon, H., and Huber, J. "Association Between Neighborhood Need and Spatial Access to Food Stores and Fast Food Restaurants in Neighborhoods of Colonias." International Journal of Health Geographics 8, no.9 (2009): 1-17.
- [112]Sloane, D., Diamount, A., Lewis, L., et al. "Improving the Nutritional Resource Environment for Healthy Living Through Community-Based Participatory Research." The Journal of General Internal Medicine 18 (2003): 568–575.
- [113]Small, M. L, and Mc Dermott, M. "The Presence of Organizational Resources in Poor Urban Neighborhoods: An Analysis of Average and Contextual effects." Social Forces 84 (2006): 1697-1724.
- [114]Smith, D. Food Deserts in the Willamette: A Study of Food Access in Lane County, Oregon. [Master's thesis]. Eugene, OR: University of Oregon, 2003.
- [115]Sparks, A., Bania, N., and Leete, L. "Finding Food Deserts: Methodology and Measurement of Food Access in Portland, Oregon." Paper prepared for Institute of Medicine, Workshop on the Public Health Effects of Food Deserts, January 26, 2009. Washington, DC, 2009.
- [116]Sustainable Food Center. Access Denied. An Analysis of Problems Facing East Austin Residents in Their Attempts To Obtain Affordable, Nutritious Food. Austin, TX: Sustainable Food Center, 1995. Available at http://www.sustainablefoodcenter.org/library/Access_Denied.pdf.
- [117]Ton, p. (2002) Organic Cotton Production in Sub Saharan Africa. Pesticide Action Network (UK), London.
- [118] Tanaka, K., Mooney, P., et al. Lexington Community Food Assessment: 2004-2007.
- [119]Lexington, KY: Department of Community & Leadership Development, University of Kentucky, 2008.Available at http://www.uky.edu/Ag/CLD/doc/CommunityFoodAssessmentReport04-07.pdf.
- [120] Tchumtchoua, A. Town-Level Assessment of Community Food Security in Connecticut Food Marketing Policy Center. University of Connecticut, 2005. Available at http://digitalcommons.uconn.edu/cgi/viewcontent.cgi?article=1000&context=fpmc_mono.
- [121] Thurman, S. Measuring Access to Food in Charlottesville, VA. Charlottesville, VA: University of
Virginia,Virginia,2007.Availableat



ISSN: 2349-5197 Impact Factor: 2.715



INTERNATIONAL JOURNAL OF RESEARCH SCIENCE & MANAGEMENT

http://www.virginia.edu/ien/docs/07FoodClassFINAL%20PAPERS/AccessTransportation.pdf.

- [122] Tsai, S. Needs Assessment: Access to Nutritious Foods in East Oakland and South Hayward. [Master's Thesis].Berkeley, CA: University of California at Berkeley School of Public Health and Alameda County Public Health Department, 2003.
- [123] The Food Trust. The Need for More Supermarkets in Chicago. Philadelphia, PA: The Food Trust, 2008. Available at http://www.thefoodtrust.org/catalog/download.php?product_id=147.
- [124] Tchumtchoua, A. Town-Level Assessment of Community Food Security in Connecticut. Food Marketing Policy Center.University of Connecticut, 2005.Available at http://digitalcommons.uconn.edu/cgi/viewcontent.cgi?article=1000&context=fpmc mono.
- [125] The Food Trust. Stimulating Supermarket Development: A New Day for Philadelphia. Philadelphia, PA: The Food Trust, 2004. Available at http://www.thefoodtrust.org/pdf/SupermktReport_F.pdf.
- [126]Tsai, S. Needs Assessment: Access to Nutritious Foods in East Oakland and South Hayward. [Master's Thesis]. Berkeley, CA: University of California at Berkeley School of Public Health and Alameda County Public Health Department, 2013