

The Analysis of Long Tail Effect and Design Issues on the Turkish On-Line Small Domestic Appliance Market

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Abstract

E-commerce has changed how consumer buys in variety and has made it easier for them to find. As variety of products to improve consumer surplus, researchers propose a new type of distribution; The Long Tail. In this study, to examine the Long Tail in non-digitals, a field study conducted in Turkey's best-known on-line store. The results does not find a strong evidence for a long tail effect in the on-line Turkish SDA market. Flock toward rather cheap ones and price discounts is identified and an increase in interest in higher ranked products, a bandwagon behavior was not experienced. The study finds that the main motivation in buying decision focused on price appeal not on design of products. Design played role for benchmarking and design related comments of the consumers mainly focused on appearance of products neither their usability nor functionality.

Key words: The Long Tail, e-commerce, Turkish SDA market.

1. Introduction

As an economic variable, every product is highly variable and continuously changing for market process (Chamberlin, 1953). Products distinguished and diversified for as long as suppliers have differed in their methods for harsh competition in market and billions of obscure products in market are waiting for their turn. Although there is great product heterogeneity in markets, consumers buy a small subset of the available product varieties (Shy 1997, p.133) because of limited physical access whole alternatives.

On the other hand information technologies (IT) have changed how consumer buys and have made it easier for them to find and buy a wide variety of product. As IT plays a central role in the supply and demand of products, two distinctive viewpoints on demand curve are hot topics in marketing agenda. First one is the traditional way that recommends producers or distributors to focus on popular products on supply for the sake of high-profits. This view is based on well-known Pareto-principle which states a common rule that 20% of the clients create 80% of the total revenue. On the contrary, second view is known as The Long Tail (Anderson 2006) to describe the phenomenon that niche products make up most of total sales.

The idea of the Long Tail depends on expanding markets through less popular (which, by Anderson's definition, niche) products by e-commerce. The first empirical research on issue is conducted by Brynjolfsson, Smith and Hu (2003) to examine the effect of increased variety of products to improve consumer surplus. According to researchers, while increased market efficiency through reduced transaction costs was lowering prices, increased on-line availability yielded "... positive impact on consumer welfare that is seven to ten larger. (Brynjolfsson, Smith and Hu 2003, p 1593) ". Same understanding later popularized by Anderson with his well-known book *The Long Tail: Why the Future of Business Is Selling Less of More*. With unlimited shelf space and low in-stock cost of e-commerce, Anderson was proposing a new type of distribution with greater number of tail-products (niches or non-hit items) which create a new market as greater as current one. Despite the differences between the Pareto-principle, Anderson's claim was focusing on the great potential of niches where larger share of revenue found in the tail of the demand curve than blockbusters.

As the Long Tail became popular several oppositions have raised. Depending on the traditional Pareto-principle and winner-take-all principle (Lazear and Rosen 1981) many prudent researchers such as Elberse (2008) claim focused on the performance and the permanent revenue of the blockbusters; the hits. The Pareto-principle or the 80-20 rule is for the first time expressed by Vilfredo Pareto (1971) to describe the unequal distribution of wealth in a country.

This observation later successfully applied by Juran (2005) in many fields like economics and management, and the principle generalized as the 20 per cent of something always are responsible for 80 per cent of the results. In short, while the long tail promotes the power of niches, Pareto-principle advises to invest to hits. Similarly, Long Tail in many ways conflict with McPhee's (1963) Theory of Exposure which describes two phenomena of distribution: natural monopoly and double jeopardy. In both distribution allocations, first in natural monopoly, hit products monopolize the so-called light (less consuming) consumers where in double jeopardy, heavy consumers, are already "... more likely to venture into the long tail but they choose a mix of hit and obscure products (Elberse 2008, p 93)." The long tail directly odds with empirical studies of Lindstrom (2008) in which buying motive deflated by over-much variety in supply. Veblen's (2007) groundbreaking theory of Conspicuous Consumption also conflict with Long Tail forasmuch as the theory where every unique consumer endeavors to buy hits or popular to show their status rather than any intrinsic utility of such goods (Veblen effect).

On the other hand, Anderson's the long tail is in several ways compatible with several contemporary points of view in the field as in The Blue Ocean Strategy that introduced by Kim and Mauborgne (2005). The central thesis of the strategy depends on to make competition irrelevant in existing demand (red ocean) and create a leap in value to open up new and uncontested market space (a blue ocean) by new niches. Yet the strategy focus on to create new niches in untapped market space, as the final goal is to be a hit, each successful niche product will try to drive their new rivals out of business to get a share of potential demand. In short, every success in niches, in future, will share same destiny of the hits. Similarly, another strong support for the Long Tail comes from Crowdsourcing (2008) where customers can be a producer and handle shipping, inventory and tracking. Both Anderson and Howe think the customers produce and list their goods, even find obscure but well-qualified ones in the niches and then buy and rate them. Ironically Veblen's Conspicuous Consumption theory fits with Long Tail in a sense where the demand for a certain good is decreased due to the fact that others (mainly lower income) are consuming the same commodity (Snop effect). Therefore, occasionally, the demand curve can have a positive slope and especially heavy consumers can deny buying hits and tent to obscure ones to discover different tastes.

Does Long Tail work? According to Anderson, as the examples sketch, it's a strategy that does work. On the other hand, Elberse states that the data tell a different story. Could the long tail really provide increased profits other than entertainment industries, non digitals? This is the question that this research is looking for. Yet much has been written about the long tail phenomenon for the digitalized products such as books, CDs, and movies, it's not clear whether the Long Tail will work on physical products such as small domestic appliances at on-line channels. This study also extends line of research by focusing basic motives behind being hit in small domestic appliances market and provides information about the dynamics of medal rostrum. Intrigued with these questions, the paper is organized as follows. Section 2 illustrates a general review of small domestic appliances industry in Turkey. Section 3 discusses field study and describes the data and presents the estimation results. Section 4 concludes the paper and discusses future research.

2. Small Domestic Appliances Industry in Turkey

In 2010, with the background of global financial crisis, Turkey's small domestic appliance (SDA) industry is in the face of great survival pressure, but stability in the economic climate preserved a healthy environment for Turkish consumers in support of the technical consumer goods market and the SDA industry displayed double-digit growth. The market volume of the industry is reached to 1.646 M.TRL (\$1.041 million) in 2010 with 20.0% growth between Q1-4 2010/Q1-4 2009 (GfK, 2011). Deep fryers category claimed the highest growth rate within the sector while bread maker is the only category with decreasing sales value. The kettle category was also an exception since it was the only category to display single digit growth; all other categories showed double-digit growth rates. The highest contribution to the sector was provided by vacuum cleaner category (GfK, 2011).

The sector is consist of 194 brands with 4.840 models, major increase is displayed in food processors in terms of revenue (24,7 %) and in coffee, tea, espresso appliances and kettles in items that are sold (29,8 %). The growth's major reasons are, first, high values in the consumer confidence index that encouraging consumer to spend much more, the increase in income, the annuals and holidays; mainly the mother's day that stir up the market and the high marriage rates (around 500.000 a year) because of young population and rapid urbanization. A survey is conducted by BSH Home Appliances, a Turkey-based subsidiary of the German BSH Bosch und Siemens Hausgerate GmbH in 2010, poled 3,691 Turkish women, to diagnose the causes that control the purchasing of SDA.

According to the results of the survey, while 55 % of participants said innovation is the most important feature of household appliances, 20 % said a product's being environmentally clean. And while 17 % said the most important feature of a product was economic value only 8 % said design and appearance was the most important feature (BHS 2011). Other interesting result of the survey was the 39 % of the Turkish women prefer a small toaster as a gift rather than a brilliant cut diamond ring. The survey also asked hypothetical question as if they were stranded on a desert island and could only bring one SDA, what would it be? 39 % of participants requested a super speed hair-styler where 29 % demanded a fruit processor (BHS 2011). 37,8 % of the total sales in the market are made from organized channels as technology markets, chain and online stores and this sales holds 50,1 % of total sold items (GfK 2011). This data show that Turkish consumers tend to purchase low-priced SDA's online; on the other hand, prefer to buy high-priced SDA's from conventional dealers due to trust on visual inspection.

3. E-Commerce in Turkey

Number of internet users in Turkey has reached 35 million by the end of 2010 (45,0 % of the population) (BKM 2010) where 15 % of users orders goods or services over the Internet (TUIK 2010). The trade volume of e-commerce has reached to 15 billion TL (approx. 10 billion \$) in 2010 with the 50 % increase compared to 2009 (BKM 2010). According to BKM (2010) 7 % of total credit card spending was on the internet and internet retail sales increased up to 14 % where brick-and-mortar retail market grew 3-4 % (İğneli 2011). In 2010, the highest purchase rate via the internet was clothing and sports materials with the rate of 24,3 %. This rate is followed by electronic tools with 23,8 %, household goods with 19,3 %, travel tickets, car rental with 15,2 % and food items and daily requirement with 13,3 % (TUIK, 2011).

In 2011, Turkey's one of the leading online shopping site; *Hepsiburada.com* (means "all are here") has published a report about the numbers and dynamics of the e-commerce. According to the report, consumer expectations about e-commerce were varying, however security, online support, consistent; real visual of the item, clear warranty and return conditions and quick delivery were the requests come to the fore. This report also includes the company's latest consumer analysis and a clear consumer profile buying attitudes (Figure 1). However, the firm's figures are inconsistent with TUIK research yet the sales of electronic products are reported to be the best selling products.

Figure 1: Hepsiburada.com 2010 Report

HEPSIBURADA.COM 2010 REPORT	
Total Number of Registered Members	3.000.000
The Number of New Members in 2010	500.000
Visits per month/Unique Visits per month	13.000.000/6.500.000
The Number of Total User Reviews	above 810.000
Posted Products per month	above 550.000
The Average Duration of the Visits	10 minutes
The Number of Product Categories	36
The Number of Products	above 350.000
The Number of Brands	4519
The Most Reviewed Products	Nokia 5800, Nokia 6300 mobile phones
The Most Searched Products	Air conditioning, mobile phone, earphones, iron, wedding ring, watch
The Most Searched Brands	IPhone, Sony, Apple, Nokia, HP, Samsung, Philips
Year's Best-Selling Products	Simons in the Golden Horn - Book
	Nokia 5800 - Mobile Phone
	The Avatar - Movie
	Candan Erçetin, Broken Hearts Stop - Music Album
	Tabu XI - Board Game
	Fujifilm AV100 12.2MP 2.7"LCD - Camera
	Logitech M195 Kablosuz Nano Mouse - Mouse
	Seagate 1 TB 7200RPM Freeagent Desk- External HD
HP Pavilion DV6 - Notebook	

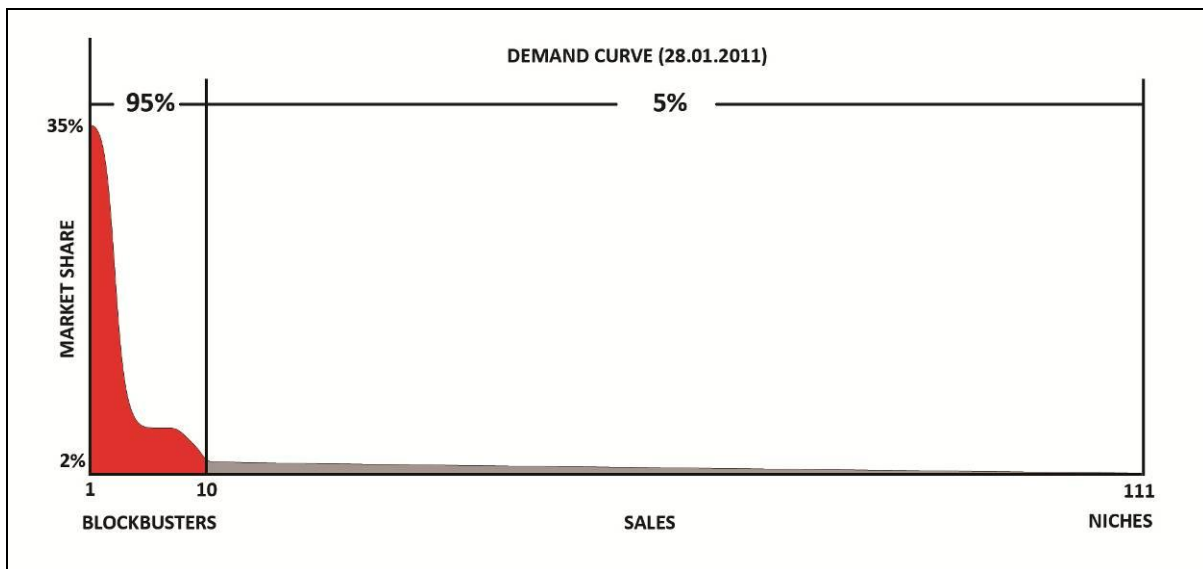
4. Field Study

To examine the Long Tail in non-digitals, in consumer durables, a field study conducted in Turkey's best-known on-line store; *Hepsiburada.com*. To get around this problem, the study uses kettle sales data from the website. Theoretically, the kettle is an attractive product to study, yet it is not a specialized product with affordable prices but has a great product variety. Another reason for the kettle to be attractive to study is that it sometimes acts like cash cow product that is responsible for much of a company's performing profit; has high liquidity in sales, usually for suppliers that import items from South-East Asian produces. The website was listing 111 items in 28.01.2011 where typical large brick-and-mortar stores displays 20-25 item as average. In addition, the website was serving the improved search features according to brands, several product specifications or filters like top ten or lowest-highest price and recommendation tools that allow spectators to comment.

The field experiment ran for one month, from January to February 2011 and the website explored various ways that it could present information about whether the kettle sales fit to Pareto-principle or Long Tail.

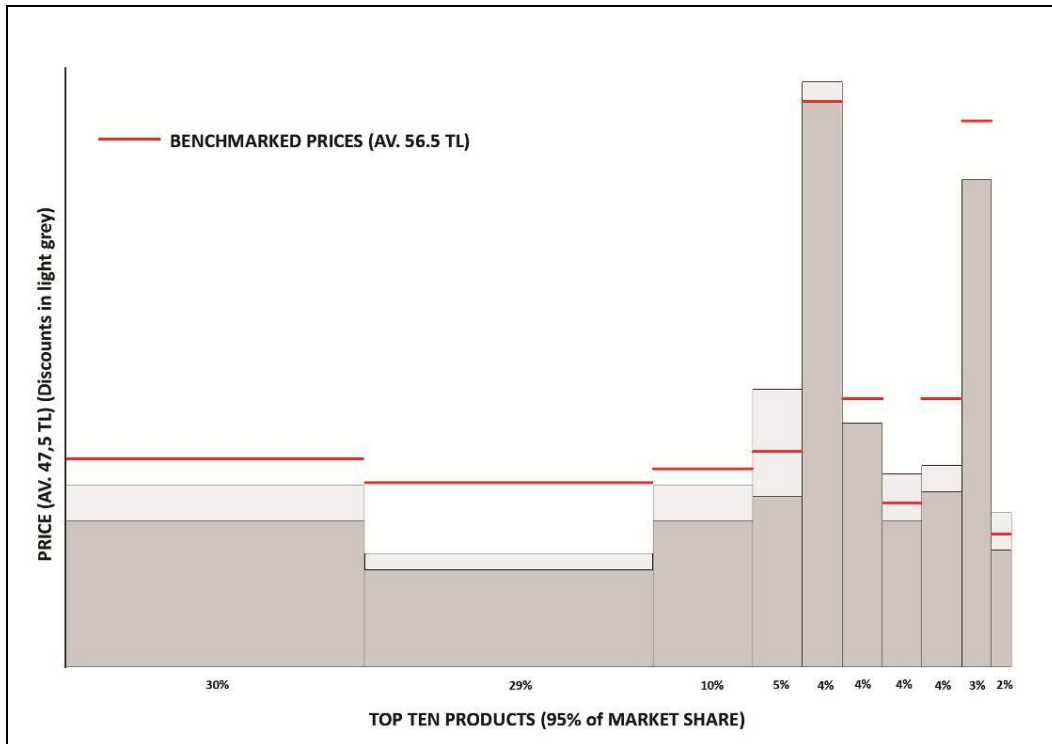
As an early exploration of the data, the study performed graphical analysis of the total sales in 28.01.2011 (Figure 1). Interestingly, different from Pareto distribution (80-20) and Long Tail, a limited number of products with 10 of 111 items were resting within head of distribution with 95% of market share where 101 of 111 item shares 5% of market.

Figure 2 : Demand curve of on-line kettle sales



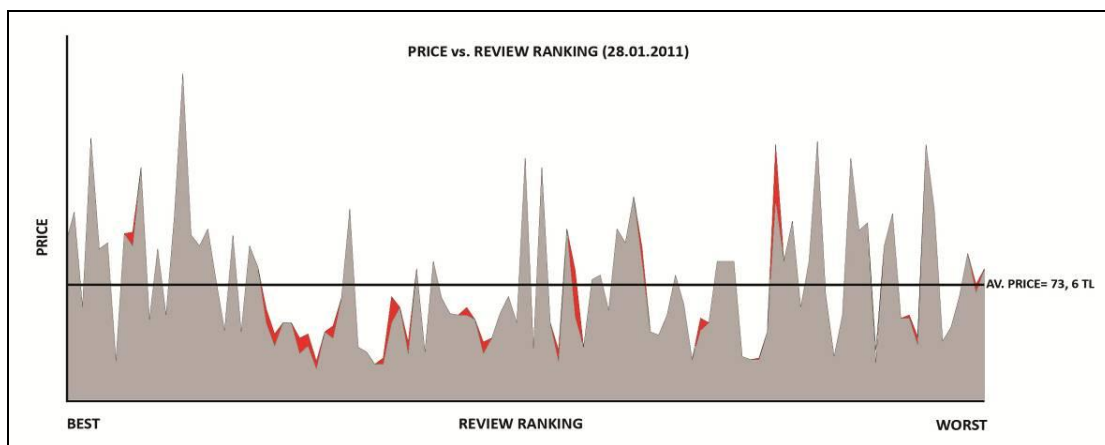
What is unusual about the distribution was the top three items were sharing 59% of the market (Figure 2). In other words, in on-line kettle sales, neither 80-20 Pareto distribution nor the Long Tail was determined. The kettle market with a high freedom of choice because of improved search features and product variety created a certain degree of inequality by favoring the upper 9% of the items against other 91% (9-91).

Figure 3 : Market share of top ten products with benchmarked prices



Another interesting result found in the study is the real-time price discount effects concentration of blockbusters. A detailed look to Figure 2 will represent that 8 of 10 items have price discount up to 14% to 32%. This is so both blockbusters and the niches play a simultaneous price-setting game and price discount seems as a basic motive to be in head or tail. In other words, price is a hot concern when customers decide, but cannot act as a quality signal in review ranking (Figure 3).

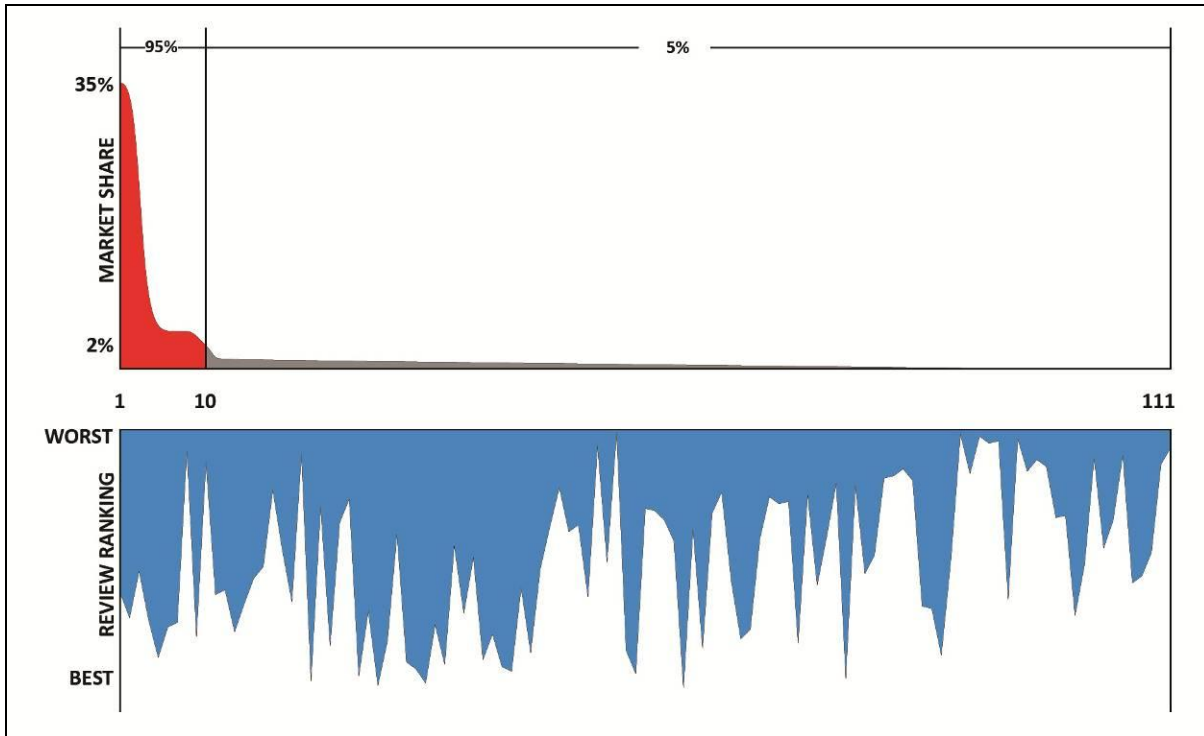
Figure 4: Price vs. Review ranking of items



In list, the items average price is calculated as 73.63 TL. Yet the average price of blockbusters is 47.5 TL, an increase in interest for the cheaper items in the market can be determined. The Figure 2 also shows the average price of benchmarked items. According the figure it appears that, consumers first appraise a price for a kettle in mind, and then seeks for several items around that price. However for the final decision they buy an item under the average price of benchmarked items.

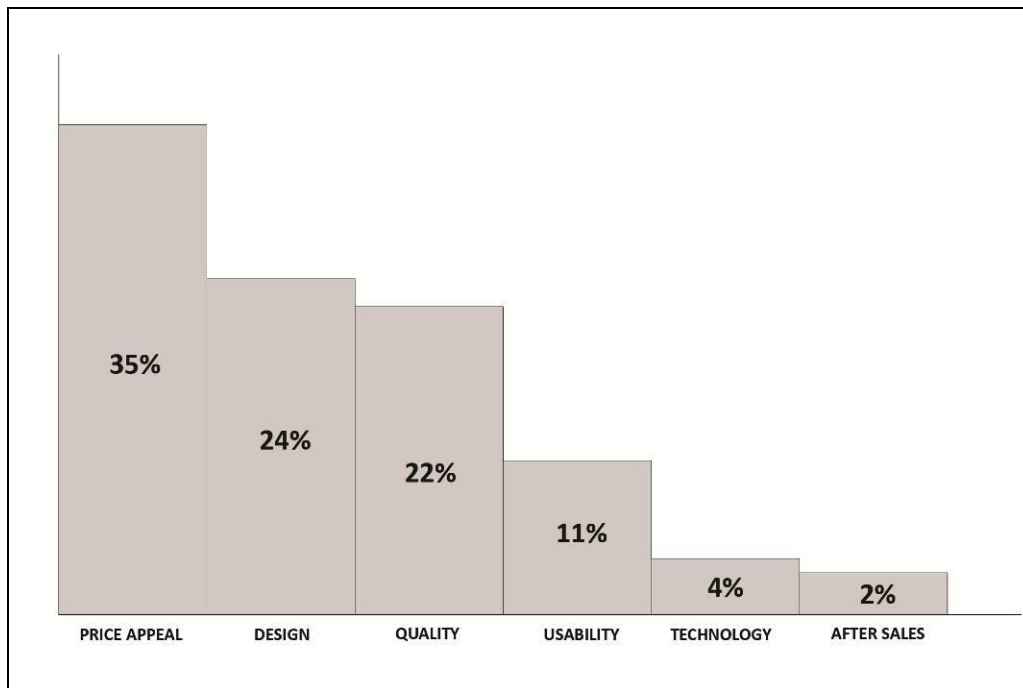
Another interesting finding in the field study is that being blockbuster does not guarantee the highest rank in spectators review (Figure 4). There may be several explanations for this but the most satisfactory one can be proposed as the limits of wallet do not always meet all the needs. In other words, consumer may expect an item in the highest rank, however he should be contented with the one that he can afford.

Figure 5: Comparison of demand curve with review ranking



A detailed look in reviews of items will give clues about motives for buying decisions. The Figure 5 displays keyword based counts related to reviews. The Figure 6 also shows differentiation between contract manufactured items and well-known global brands.

Figure 6: Motives for buying decisions according to spectators reviews

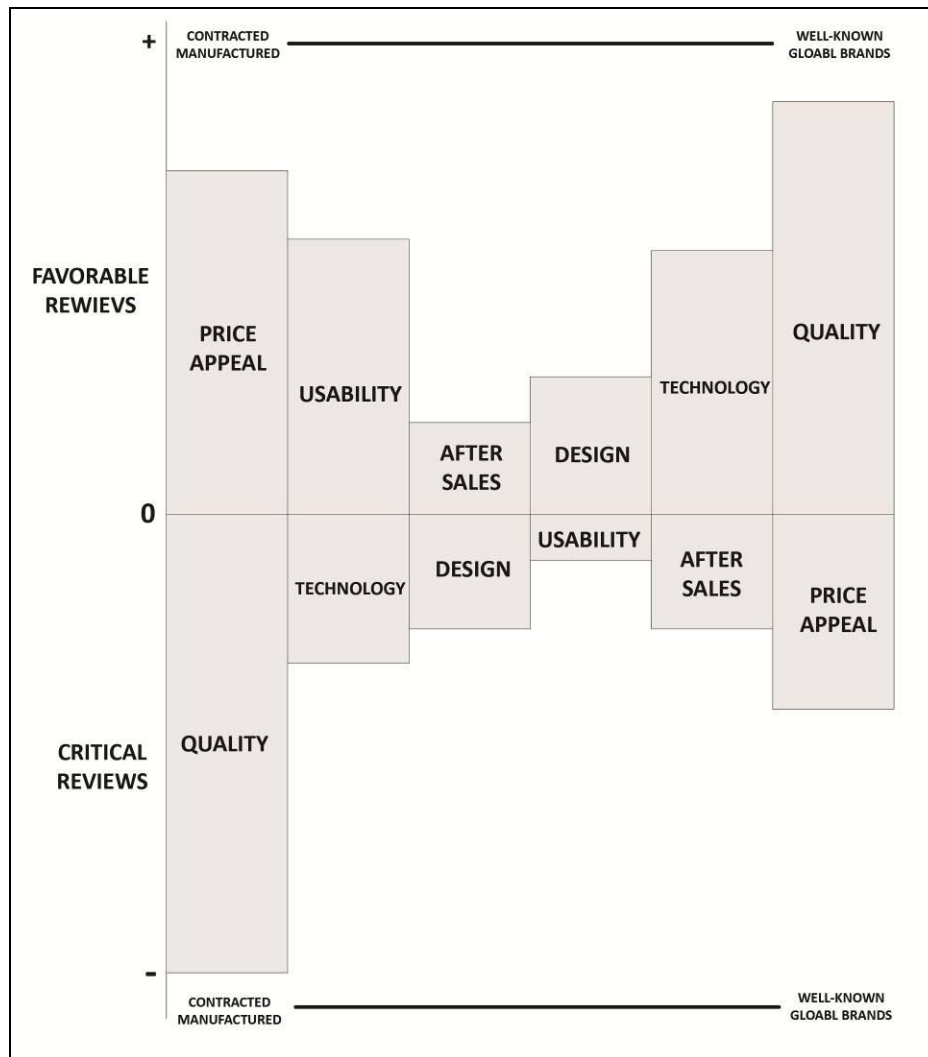


According to Figure 5, most of the consumer reviews focused on price appeal, design and quality. In general, consumer’s comments bunch follow kettles’ ability to deliver performance, of any sort, for its price. Much of the comments on the issue try to orient potential users to buy, chiefly, contracted manufactured products because of their unexpected but experienced price-performance ratio.

On the other hand, design of the products highly commented. The terms classy or beautiful are used in common to define chromed or brushed steel bodies and high-quality trims. Technology based comments are rare, however emphasis on concealed heating element or 360-degree swivel power base for cordless convenience or auto shut-off stick out mostly for well-known global brands.

The comment differences between contracted manufactured ones and well-known global brands in accordance to favourable and critical reviews are shown in Figure 6. According to figure, contracted manufactured items are strong in price appeal however weak in quality and technology. On the other hand, well-known global brands emerge with their quality and supporting technologies as pre-set heat settings, keep warm and memory functions however criticized due to their price appeal.

Figure 7: Differentiation between contract manufactured items and well-known global brands according to spectators reviews



Design based issues, in both edge of the spectrum, highlighted by focusing on the material used in bodies, and charming colors of LED indicator lights. Main expectation under design issues major on the general outlook of the item that is compatible with the aura of kitchen that it will be used.

In conclusion, act of on-line kettle sales fit neither 80-20 Pareto distribution nor the Long Tail. Main motivation in buying decision still focuses on price appeal. To be in head or tail determined by simultaneous price-setting game and flexible price discounts. The tail is long but thin with 5% market share and similar prices in range does not promises great revenue gain from niches. The effect of design in sales in not dominant, however, design plays an important role for benchmarking under similar circumstances as item with close price or items, mostly well-known brands, that are out of familiar styling bandwagon.

5. Conclusion

Although there is a fairly substantial literature on the Long Tail, studies on the non digital products have not been noted or discussed extensively. The Long Tail literature has focused primarily on measuring the size and influence of on-line trade in entertainment industries. Much less attention has been given to non digitals, consumer durables. Yet the on-line trade is not limited with digitalized products such as books, CDs, and movies, this study attempted a field analysis to explain whether the Long Tail strategy does work in SDA market.

In this paper, a controlled field analysis conducted by a domestic on-line portal to investigate long tail effect in SDA. The website experimented with sales numbers of each item, their popularity and review ranking and basic motives in buying decision. The study does not find a strong evidence for a long tail effect in the on-line Turkish SDA market. More importantly, in on-line kettle sales, neither 80-20 Pareto distribution nor the Long Tail was determined. In reality there was a flock toward rather cheap ones. An increase in interest in higher ranked products, a bandwagon behavior was not experienced. In most cases, popularity in sales occurs when consumer realize dynamic and volatile price discounts.

According to consumer reviews, main motivation in buying decision focused on price appeal not on design of products. Design played an important role for benchmarking under similar circumstances as item with close price or items, mostly well-known brands, that are out of familiar styling bandwagon. The research findings can partly explain the influence of industrial design in on-line SDA market because of limited data retrieved from buyers' reviews. Much more attention can be paid to compare both on-line and brick-and-mortar stores to examine design issues by face-to-face surveys. On the other hand, with limited data that retrieved from buyers' reviews, in the research, design related comments mainly focused on appearance of products neither their usability nor functionality. For instance, the use of steel bodies emphasized as the indicator of elegance or charming colors of LED indicator lights, mainly blue ones with high-quality trims portrayed as high-technology. Any comment on ergonomics was not identified.

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