

Physical Distribution Service Quality through Iranian Convenience Stores Retailers Perspectives: a Mixed Method Approach

*Shahriar Azizi^{*1}, Shahram Jamali Kapak², Farid Tarhandeh⁵*

1. Assistant Professor, Faculty of Management, Department of Business Administration, Shahid Beheshti University, Tehran, Iran

2. Phd Student, Behavior Management, Farabi Campus, University of Tehran

3. Master Student of International Business, Faculty of Management, Department of Business Administration, Shahid Beheshti University, Tehran, Iran.

(Received: 31 December 2013; Revised: 3 June 2013; Accepted: 16 June 2013)

Abstract

Due to the importance of Physical Distribution Service Quality (PDSQ) in logistic systems, the purpose of this paper is to design a practical scale for measuring the construct through the perspectives of Iranian convenience store retailers. A mixed-method approach was employed for the study; in-depth interviews were first carried out with 16 Iranian experienced retailers who actively had worked in the industry; then content analysis was employed to identify the key underlying factors of PDSQ. Using the cluster sampling technique, 100 respondents from a retailing sector of 4 regions out of 22 regions of Tehran were selected for testing the measurement model and determining the importance and satisfaction level. 10 important PDSQ factors through perspective of Iranian convenience retailers were extracted and categorized in three dimensions including: Coordination of distribution agent (3 factors), Ordering condition (3 factors), and Behavioral features of distribution agents (4 factors). IPA diagram was drawn finally.

Keywords:

Behavioral features, convenience store, coordination, delivery, Iran, physical distribution service quality.

* Corresponding Author, Tel: - ; : /9123469598

Email: S-azizi@sbu.ac.ir

Introduction

Several marketing professionals have addressed the marketing management problems of setting appropriate physical distribution service levels (Perreault & Russ, 1976). Many companies are unsatisfied with the distribution of their products and services. Among the marketing 4 Ps, marketing channels or distribution channels are still an important source of competitive advantages, since in the other Ps. Distribution builds sustainable competitive advantages and marketing channels have a long-run character. Due to the fact that they are focused on people and relationships to build them, it is necessary to have a consistent structure; (Fava Neves, Zuurbier & Cortez Campomar, 2001). Moreover, as Irani, Shahanaghi and Jandaghi (2011) declared, in the twenty-first century business, the biggest change would not be in new methods of production or consumption, but in distribution channels.

Given the importance of physical distribution services, managing these services is an important component of the firm's marketing management. One of the primary steps in managing physical distribution service is to detect important elements of physical distribution service, from the viewpoint of retailers as intermediate customers. This means asking customers which aspects of physical distribution they feel are important (Jackson, Keith & Burdick, 1986).

Retailers in many lines of trade are becoming a more dominant and independent force in the marketing channel. They no longer tend to let the manufacturer work dominantly and independently in the development of new products. Most of the retailers are sophisticated and have a great burden of marketing expertise and could assist determine if the types of new products are right for the market segments they serve (Onwong'a, Mamati, Kangu & Onsongo, 2010).

Since the physical distribution service is important to purchasers in

evaluating and selecting suppliers, it will be useful to explore their satisfaction of the overall services they receive. Such analysis may help distributors to identify the components of physical distribution service that need improvement, and it may help researchers identify components that serve as good surrogate measures for overall satisfaction (Perreault, *et al.* 1976). The customer service quality goal of any firm is to match or manage expectations through ensuring proper SERVICE QUALITY of endogenous variables and operations to minimize any gap or disconfirmation between consumer's expectations and perceptions (Grant, Lambert, Stock & Ellram, 2006).

Iran is a huge and attractive market for foods and beverages in the Middle East region because of its population (almost 75 million persons). The distribution industry structure of foods and beverages has recently become highly competed. Entering new distributor companies and the tendency of foods and beverages manufactures for establishing their own distributors intensify the competition. Additionally, it is proved that convenience retailer stores dominated the retailing industry in Iran's economy. Although, chain stores are not new phenomenon in Iran, they have not been dominated the distribution industry to date.

According to the critical role of retailers in Iran's distribution system and due to the lack of comprehensive study in PDSQ through the perspectives of Iranian retailers, current research employed a mixed-method approach to identify PDSQ dimensions in the view of Iranian convenience store retailers.

This research attempts to answer three questions: first, what are the PDSQ important dimensions through perceptions of Iranian convenience retailers? Second, how satisfied are Iranian convenience retailers based on PDSQ dimensions? Where are the gaps between importance and performance in case of PDSQ dimensions?

Literature review

Physical Distribution

Physical distribution service is defined as the interrelated package of activities provided by a supplier which creates utility of time and place for a buyer, and insures form utility. From the customer's perspectives, then, physical distribution service is the mechanism that assures goods will be available (Perreault, *et al.* 1976). Physical distributions generally regarded as part of a general logistics concept, which also includes marketing customer service (Mentzer, Flint & Hult, 2001). As Xing and Grant (2006) declared, Physical distribution deals with finished products and is considered as a part of a firm's out bound logistics that incorporates a relationship between the firm and its customers. They also said that Physical distribution provides time, place and form utilities that are crucial for customer service. Mentzer, Gomez, and Krapfel (1989) examined the evolution and development of Physical distribution and argued that its importance has grown over time; However Mentzer *et al.*, (2001) claimed that attendant features of physical distribution service can be the leverage of creating competitive advantage for companies through differentiating companies with superior levels of service; the ability to deliver the right amount of the right product at the right place at the right time in the right condition at the right price with the right information is crucial in providing satisfactory customer service (Mentzer *et al.*, 2001).

Mackinnon (1986) simply defined the main functions of distribution as: buying, selling, transporting, financing and storing. He also added the functions of risk bearing are involved since goods may be damaged and destroyed or dropped in price, and claimed that depending on the kind of goods involved, many customers have

recently made or provided after sale service in addition to distribution. This is done in order to create confidence in the consumer to make regular purchases.

Distribution is one of the keys for external resources, this concept beside Logistics and Channels Management are the less visible sides of marketing. Also distribution is the less attractive sides of marketing and sale when compared to advertising, nevertheless, it is worthy to pay more attention (Bharadwaj, 2006). Distribution channels include one or more producers, some wholesalers and retailers. This channel indeed, is a set of interdependent organizations that simplifies ownership of products from producer to final consumer (Barker, 2002).

Retailing Industry

Retailing can be defined simply as any business entity which is sold to customers directly, in a shop, by person, by mail, on the internet, telephone or a vending machine. Retailing also has a life cycle and newer forms of retails come to replace the older ones, for instance a corner grocer may change to a supermarket. Retailing also includes all activities involved in selling or renting final products or services to consumers in their home or personal consumption (Perreault, Cannon & McCarthy, 2010).

There are some items that indicate retailers' strengths, Choice of merchandise is their prerogative, and they could distinct themselves by selling special products. In other words, having many new products on offer can strengthen a retailer, and if products do not do well, this condition can charge a penalty. New developments in IT help them run operations optimally and keep in track of loyal customers, also help them identify profitable store locations.

Perreault *et al.* (2010) presented a comprehensive categorization of types of retail stores; some of them currently exist in Iran for

instance: Convenience stores (selling different types of groceries and home keeping requirements and are open till midnight. The stores that have been the case of this research were of this type); Supermarkets; Hyper markets; varied stores; Proprietary stores; and without store retailing. Selling departments, Discount stores, Discount sheds and Catalogue exhibition are other types of retail stores that are not popular in Iran.

An additional point that is worthy to be mentioned is proprietary stores in Iran; these specialized stores in Iran are located in special physical places with a huge number of similar stores in a special branch of business for instance: Monirieh Street for sport utilities, Amin Hozour Street for household appliances, Manouchehri Street for cosmetic products, Jomhuori Street for multimedia products and Alaeddin market for mobile phones in Tehran.

Physical Distribution Service Quality

As Xiang and Grant (2006) emphasized service quality has been an important research topic in the marketing literature for some time beginning with Parasuraman *et al.*'s (1985) conceptual model as the delivery of high SERVICE QUALITY strengthens corporate brands and contributes to consumer satisfaction. Physical distribution is generally regarded as part of a firm's outbound logistics and deals with finished products and incorporates a relationship between the firm and its customers and provides time, place and form utilities that are crucial to customer service (Grant *et al.* 2006).

The delivery of high SERVICE QUALITY improves corporate brands and contributes to consumer satisfaction. Physical distribution service is different from most other service industries in terms of who receives the service and the nature of the interaction and is applied to products, rather than people. The service supplier and the customer are physically separated. Contrary to other service industries where the

service is intangible, Physical distribution service is somewhat “tangible”, demonstrated by the condition and reception time of products that are being delivered (Xing & Grant, 2006).

While there have been many studies on SERVICE QUALITY in services retailing, such as banks, hairdressers and professional services like accountancy, there has been relatively less research on PDSQ in physical goods retailing (Xing, Grant, McKinnon & Fernie, 2010). Notwithstanding, no comprehensive research has been done among Iranian retailers and distribution agents about Physical distribution service Quality especially in the view of retailers` expectations of distribution systems. Logistics activities are considered primarily services and the resultant value such intangible activities provide for consumers are difficult to measure and comprehend (Grant *et al.*, 2006).

Work by Mentzer *et al.* (1989, 2001), Emerson and Grimm (1996) and Bienstock *et al.* (1997) has conceptualized and refined a PDSQ model with dimensions or constructs of availability of products, timeliness of delivery, quality of delivery, order status information and order condition.

Using a postal survey method in B2C section, Xing *et al.* (2010) explored consumers` opinion on important variables and constructs in distribution service quality, as well as their internet home shopping expectations and perceptions of e-PDSQ received from an actual internet shopping experience. Respondents` reasons for purchasing online were primarily low cost and availability. The important factor in choosing a retailer according to their study as the respondents` reasons to choose a particular e-retailer included: advertisement from other channels, discounts pecial offer, recommended, past performance, brand attraction, speed of delivery, cost of obtaining, availability, product range, low price and convenience.

In 2004, Traendly reported the results of the Soleus Group`s study

that focused on inbound supply chain practices, included retailers with over \$500 billion in sales, 87,000 retail outlets and 3.8 million associates, as annual Retail Supply Chain Best Practices Review. The first phase of their retail review included 3,000 questions across 37 different functional topics. Their study outlined some scales that could determine a good distributor and current research resembles theirs aim wise. Their study included best practices as follows: On-time availability at shipment origin; in stock at stores; fill rate on closed orders; timely and accurate advance shipment notifications. Also, in 2006, Traendly in collaboration with James Tompkins presented updated data from the Soleus Group. The additional item in their study that is worthy to say is the definition they highlighted for supply chain performance as: right product, in time and to the right place, in right package and condition, with right quantity and proper documents to the right customer.

Distribution and Retailing Industry in Iran

Distribution industry has been established since 1950 in Iran. In order to fast growing trend of the distribution industry, to date 170 requests for founding distributors companies were approved by the deputy of the internal commerce of trade, Industry and Mine Ministry of Iran. Distribution companies do their business in three levels of countrywide, state, and regional. In the viewpoint of activity context, some companies work in specific product lines but others work in various products lines.

It's worthy to say that distribution companies in Iran make their businesses in two different frameworks, some are dependent upon producer and others are independent. Dependent distributors are companies established under the dominance of a parent manufacturing company. Examples of Iranian big food and beverage companies are: Zam Zam, Kaleh, and Minoos that are well-known and own proprietary

distribution companies. In contrast, independent distribution companies are absolute and could act in different branches of business; it means they could distribute a huge variety of product basket to retailers. Hejrat, Alborz, and Ferdows are famous independent distribution companies that distribute a wide range of products to different spots of the country.

Retailing is a growing industry that has a really important impact on selling for producer and buying for consumers. This fast growing trend of retailing in Iran is because of different reasons, but what is clear is that, the results of this growth finally have strictly increased the distribution costs and have generated an unstructured network for distribution in the country in a way that final consumer has to pay a price several times more than finished price in order to own the product. Even though, the government through legislation and bylaws structuring the businesses tried to determine a peak for the profit of these business units. Traditional and interwoven construct beside bureaucracy of supervising systems do not allow the bylaws to be implemented.

Table 1 presents retailing units per capita in three countries of China, India and Iran. As website of Center of Food Industry Associations of Iran reports, statistics show there are 38 retail centers per capita in Iran. In this area, Iran is the first in the world, although in sight of a number of retails, Iran is third units, China and India are the first and second.

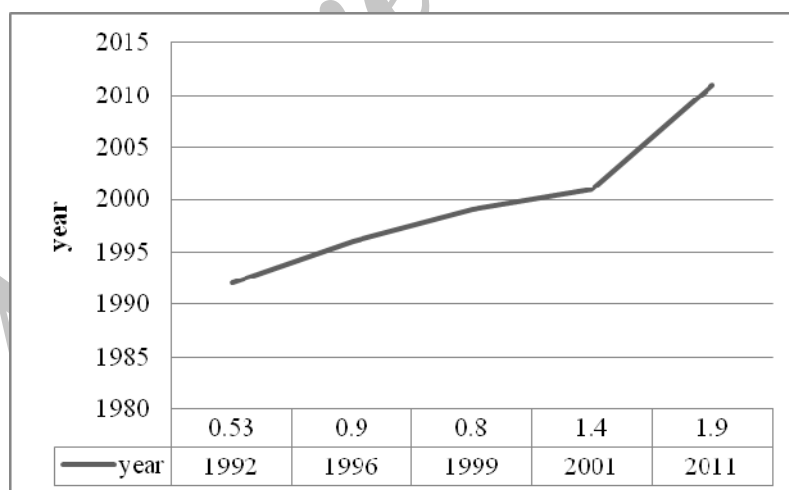
As a center of commercial research of IMF reported, retailing units of India are more than 13 million, that in this wise is the first in the world. After India, China with approximately 6.4 million retailing units is the second (Table 1).

Table 1. Retailing units per capita of China, India and Iran

| Country | Population | Retailing units | Retailing units per capita |
|---------|---------------|-----------------|----------------------------|
| China | 1,341,414,000 | 6,400,000 | 210 |
| India | 1,215,939,000 | 13,000,000 | 94 |
| Iran | 75,350,000 | 2,000,000 | 38 |

Resource: IMF, center of commercial research

According to statistics provided by Statistical center of Iran that are on a census basis of commercial workplaces, it could be perceived that the number of retail units in distribution systems has been increased from 530 thousands units in 1992 to 1.9 million units in 2011. As table 1 shows, growth percentage of 358% shows that retailing units in Iran have experienced a great percent of average growth per year that absolutely is a unique trend among other economic activities.

**Diagram 1. Number of retailing units of Iran in 18 past years**

The other point that should be highlighted is greater profitability of retailing stores in Iran despite their little volume of their investment; albeit different businesses have different amount of profitability. Beside this situation, there are some problems with distribution and retailing in Iran that have created special challenges that are being accompanied with opportunities and threats.

Therefore, establishing a retail unit is simple and easy access, different governments in recent decades have supported these units by granting required permissions, and this is the reason that nowadays we could see different retail stores in either special or public branch of business in both urban and rural areas.

Problems and disorders in distribution industry in Iran

The current management system and distribution sections of Iran encountered a lot of tiny and basic problems that website of Center of Food Industry Associations of Iran (2011) lists some of them as mentioned below:

- Lack of enough information and statistics in order to distribution processes
- Uncertainty and informality of huge amount of transportation and distribution of products in the distribution network
- Superabundance of retailers
- Lack of governmental representative in different branches of retailing in the country
- Lack of effective interactions among different businesses of other countries and Iranian businesses with the purpose of using the capabilities and potentials of the businesses
- High level of distribution costs in Iran
- Heterogeneity in coding system among customs and internal distribution networks

- Lack of NGOs¹ for supporting consumer rights
- Lack of an efficient conductor adjusting institution for market.

Distribution industry has different functions toward varied groups for instance:

1. **For producers:** increasing the sale and income, improving brand of the producer through brand networks, assisting price reduction of finished goods and sustainability to compete
2. **For consumers:** product availability of required goods at the right time and place at the right quantity, reducing finished price in order to reduction of brokering circle, increasing the power of choice in the society
3. **For the so ciety:** increasing level of economic welfare of society, preventing of brokering circle and time and national capital deviation.

Perreault *et al.* (2010) in their book have elaborated different types of distribution channels as drawn in figure 1.

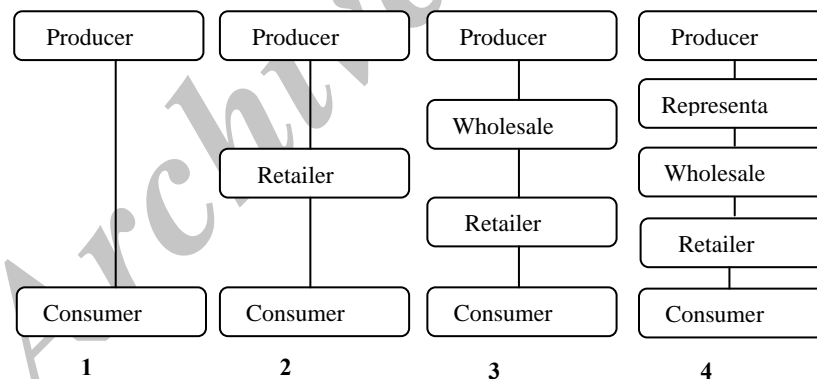


Figure 1. Types of distribution channels

¹ Non-Governmental Organizations

Types 2 and 3 of distributional channels are mainly being used in Iran. In type 1, producer companies take the responsibility of retailing directly, "Shirin Asal" Co. is an example of this type of distribution channels. The second type of distribution channels is generally used by huge companies, for instance most of dairy companies (such as Kaleh, Pak, Pegah) distribute their products directly among retailers. Third type is used by companies with lower selling volume; these producers send their products to market using independent distributing companies. They use two kinds of deals: "commission" and "buying and selling". In "commission" form, distributing company takes a percentage of the selling amount as so-called commission fees, and in "buying and selling", the distribution company buys the products (that have higher consuming level) by its own and sells them and takes the ownership of the products itself.

Manner of product distribution by distribution companies in Iran could be categorized as "hot selling" and "cold selling". Hot selling is suitable for products owing surplus supply and high selling products. In this manner, the distributor carries the products to stores and offers them. In cold selling, store keepers call the visiting agent and order their required goods.

Specialization could enhance the efficiency of distribution channels but as each member has its own purpose and viewpoints, conflict is a common concern in distribution channels.

Method

This research has been conducted in two phases including qualitative and quantitative, so could be counted as a mixed-method studying type of tool development.

Qualitative Phase

In the first phase, this research employed a qualitative method in order

to identify the dimensions of PDSQ in the view of Iranian convenience store retailers. Using in-depth interviews and the content analysis, detailed dimensions of PDSQ were identified. Based on the purpose of this study, only retailers of convenience stores were interviewed. According to theoretical saturation principle (the point in data collection when new data no longer bring additional insights to the research questions), and referring to Kvale (1996), in this stage of study using a combination of cluster and judgmental sampling, some prominent retailers were selected for the study; regions of 1, 2, 6 and 11 out of 22 regions of Tehran by cluster sampling were selected and 4 well-known convenience stores in each cluster (region) were chosen to be interviewed, finally 16 retailers studied and theoretical saturation was reached. At this point the researcher has provided repeated evidence for his or her conceptual categories. It means that the continuation of sampling and data collection until no new conceptual insights are generated.

All of the interviewees were experienced retailers and completely familiar with the distribution systems in Iran, and they at least had about 5 years of experience in the distribution system. Some of them have had an experience of 45 years. Each interview lasted approximately 30 minutes and was tape recorded and transcribed precisely to reduce the risk of the researcher bias as Voss, Tsikniktsis and Frohlich (2002) suggested. Content analysis was used to analyze the data. Based on Miles and Huberman's (1984) framework, the produced transcripts were read several times to identify common codes. 10 axial codes were extracted as a result of the open coding process. Demographic features of the sample are reported in table 2. As the table 2 demonstrates, most of employees were in age range of 31-40 and generally were well experienced as their job experience shows. It is worthy to say according to Iranian custom, all of the interviewees (retailers) were male, because shopkeeper and retailers in

this industry are mostly males and women rarely could be found in retailing of convenience stores.

Table 2. Demographic features of respondent in qualitative phase

| Age | Frequency | Percentage | Experience | Frequency | Percentage |
|-------|-----------|------------|------------|-----------|------------|
| 20-30 | 5 | 31.25 | 1-5 | 4 | 25 |
| 31-40 | 7 | 43.775 | 6-10 | 2 | 12.50 |
| 41-50 | 1 | 6.25 | 11-20 | 2 | 12.50 |
| 51-60 | 2 | 12.50 | 21-30 | 2 | 12.50 |
| >60 | 1 | 6.25 | 31-40 | 3 | 18.75 |
| | | | >40 | 3 | 18.75 |

Quantitative Phase

In this phase, a sample of 120 retailers using cluster sampling was chosen to be surveyed about PDSQ items. The questionnaire contained 10 special questions and 2 demographic questions. Respondents answered to two columns, first, they were asked about the importance of each item, and second they were asked to score their satisfaction level of the current distribution companies both in 10 point scales. Finally, out of 120 distributed questionnaires 100 were usable for analysis. The Demographic features of respondents are summarized in Table 3. The sample as mentioned in qualitative phase was elderly and well experienced and generally included males.

Table 3. Demographic features of respondent in quantitative phase

| Age | Frequency | Percentage | Experience | Frequency | Percentage |
|-------|-----------|------------|------------|-----------|------------|
| 19-25 | 19 | 19% | 1-5 | 32 | 32% |
| 26-35 | 40 | 40% | 6-10 | 28 | 28% |
| 36-45 | 21 | 21% | 11-15 | 19 | 19% |
| 46-55 | 18 | 18% | 16-40 | 21 | 21 % |
| 56-70 | 2 | 2% | | | |

Data analysis

Data analysis and results

Firstly, using thematic analysis of In-depth interviews, 10 items which mostly affect retailers' perception of PDSQ was appeared. The redundancy and percentage of repetitions of the factors in ran interviews have been reported in Table 4. Three dimensions are recognized for the items as the table shows:

Table 4. Dimensions of PDSQ Extracted From Interviews

| PDSQ Dimensions and Factors | Frequency | Percentage |
|--|------------------|-------------------|
| Dimension 1: Coordination of distribution agent | | |
| F ₁ : Order delivery in standard and determined date (Date) | 8 | 20 |
| F ₂ : Order delivery in non-busy times (Time) | 2 | 5 |
| F ₃ : Ease of contact and calling delivery agent (Communicate) | 1 | 2 |
| Dimension 2: Ordering condition | | |
| F ₄ : Delivery in ordered amount (Quantity) | 10 | 24 |
| F ₅ : Perfect and without defect order delivery (no package tearing, no crush, no breaking ...) (Undamaged) | 2 | 5 |
| F ₆ : Delivery of right ordered brands (Brand) | 3 | 7 |
| Dimension 3: Behavioral features of distribution agent | | |
| F ₇ : Good respect of distribution company employees (Respect) | 6 | 15 |
| F ₈ : Possibility of complain tracking of distribution agents (Complain) | 2 | 5 |
| F ₉ : Patience and carefulness of delivery agent in account settlement (Billing) | 2 | 5 |
| F ₁₀ : Punctuality and trustworthiness of delivery agent (Punctuality) | 5 | 12 |
| Total | 41 | 100 |

Measurement Model

In the first step, a confirmatory factor analysis (CFA) was performed, which helped assess the adequacy of the measurement model (Chang, 1998), or in other words, as Lin and Lee, (2004) said, the

measurement models (or confirmatory factor models) specify how hypothetical constructs are measured in terms of the observed variables.

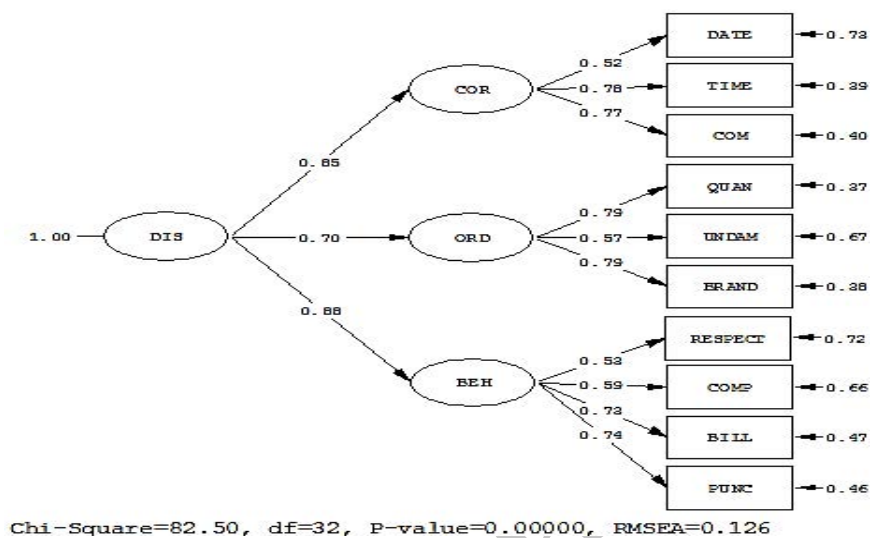


Figure 2. Measurement Model

Content validity. An instrument can be valid on the grounds of the content of the measurement items (Straub, 1989). Content validity determined as suitable by the approval of retailing experts and distribution industry professionals.

Construct validity. Construct validity as Straub (1989) said, asks whether the measures chosen are true constructs describing the event or merely artifacts of the methodology itself. He also pointed out that construct validity of an instrument can be tested in terms of convergent and discriminant validity. Construct validity in current study is assessed through the confirmatory factor analysis (CFA) and also the convergent validity was tested by examining the factor loading of each construct, as well as composite reliability and Average Variance Extracted (AVE) of the latent constructs, using CFA. Table 5 shows the results of the measurement model fit. As it is clear, factor

loadings ranged from 0.52 (Date) to 0.79 (Quantity and Brand). Straub (1989) suggested a cut-off point of 0.5 for factor loading and as all of loadings exceeding the recommended point, it could be counted as appropriate.

Composite reliability and AVE for the five latent constructs are shown in Table 5. Composite Reliability measures the inter-item consistency. Unlike Cronbach's alpha, composite reliability does not assume equally weighted measures and should have a value of at least 0.7 (Chin, 1998). The composite reliability of measures of in the current study showed values between 0.556 and 0.696 and approximately close to , suggesting that each scale has average reliability. The high values for the AVE indicate that the items share far more than half of the variance of their respective constructs. Each construct substantially exceeds the commonly applied threshold of 0.5 (Fornell and Larcker, 1981). Finally, variance extracted measures ranged from 0.427 for Behavior to 0.524 for Ordering, and then according to afore mentioned threshold they could be approximately counted as suitable.

Table 5. Measurement Model Fit

| <i>Latent construct</i> | <i>Items</i> | <i>Factor loading</i> | <i>Composite reliability</i> | <i>Variance extracted</i> |
|-------------------------|---------------|-----------------------|------------------------------|---------------------------|
| Coordination | Date | 0.52 | 0.649 | 0.490 |
| | Time | 0.78 | | |
| | Communication | 0.77 | | |
| Ordering | Quantity | 0.79 | 0.696 | 0.524 |
| | Undamaged | 0.57 | | |
| | Brand | 0.79 | | |
| behavior | Respect | 0.53 | 0.556 | 0.427 |
| | Complain | 0.59 | | |
| | Billing | 0.73 | | |
| | Punctuality | 0.74 | | |

Assessing Model Fit. The overall model fit was assessed using four common fit measures

Assessing Model Fit. The overall model fit was assessed using four common fit measures from two perspectives: absolute fit and comparative fit (Chatzoglou and Vraimaki, 2009). In more details, the absolute fit measures used in the evaluation of the CFA model are: $\chi^2/d.f$, Root Mean Square Error of Approximation, and Goodness-of-Fit Index. The comparative Fit Index was used to measure comparative fit. Table 6 summarizes the overall fit indices for the measurement model. The CFA indicated that the measurement model fitted the data to a satisfactory level, as all fit indices are above commonly accepted levels.

Table 6. Overall fit of the CFA Model

| <i>Model-fit index</i> | <i>Scores</i> | <i>Recommended value</i> |
|---|---------------|--|
| χ^2/df | 2.57 | 1 <value<3 |
| Root Mean Square Error of Approximation (RMSEA) | 0.126 | value<0.08 |
| Goodness-of-fit index (GFI) | 0.86 | 0.8<value<0.9 (Chatzoglou and Vraimaki (2009)) |
| Comparative fit index (CFI) | 0.92 | value>0.9 |

Standards suggested by Hoe, 2008.

Ranking the PDSQ Factors

As said before, the retailers were asked in two phases, first about the importance of each factor, and the other time about their satisfaction level with each factor in the current system. According to scores customers gave to factors, Friedman`s Test have ran. As the significance level of test meets the 0.05 threshold, factors have the possibility of being ranked, so the results are presented in Table 7.

After appearing importance and level of satisfaction with the PDSQ factors, for more practically analyzing the data, Paired Sample T test was performed in order to determine the gap between the importance and the satisfaction level of retailers toward the PDSQ factors. The significance level of 0.00 for all factors (that are below 0.05 of permitted levels) and the high T-statistics (>1.96) for all factors confirmed the results of this test. For the shortening the repor and

better presenting of results, the existed gap between Importance and Satisfaction level (I-S) and the current gap in the distribution system of Iran, has been reported in Diagram 2.

Table 7. Results of Friedman's Test for ranking the factors

| PDSQ Factors | Rank mean | Prioritization |
|---|-----------|----------------|
| F ₁ : Order delivery in standard and determined date | 5.84 | 3 |
| F ₂ : Order delivery in non-busy times | 5.74 | 6 |
| F ₃ : Ease of contact and calling delivery agent | 3.74 | 10 |
| F ₄ : Delivery in ordered amount | 5.62 | 7 |
| F ₅ : Perfect and without defect order delivery | 6.87 | 1 |
| F ₆ : Delivery of right ordered brands | 6.05 | 2 |
| F ₇ : Good respect of distribution company employees | 5.00 | 9 |
| F ₈ : Possibility of complain tracking of distribution agents | 4.78 | 4 |
| F ₉ : Patience and carefulness of delivery agent in account settlement | 5.75 | 5 |
| F ₁₀ : Punctuality and trustworthiness of delivery agent | 5.61 | 8 |
| $\chi^2 = 111.64$; d.f = 9; Sig = 0.00 | | |

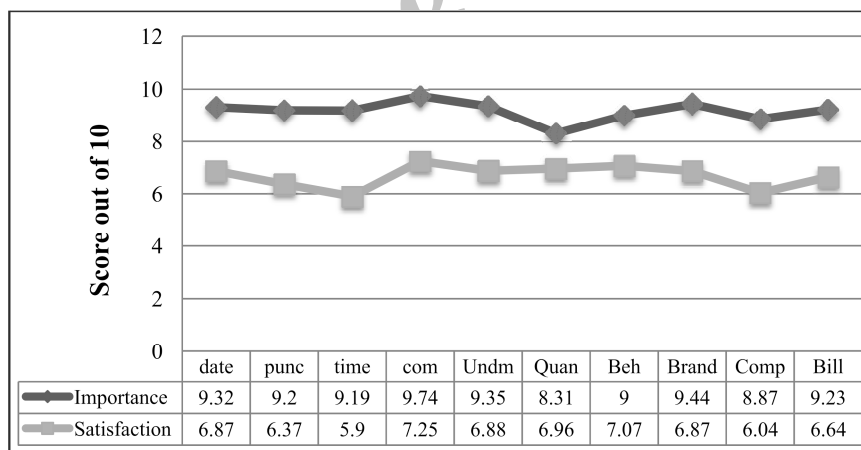


Diagram 2. Gaps between importance of factors and satisfaction level

As the diagram shows, there are remarkable gaps between importance of each item and retailers' satisfaction level of them. To

illustrate these gaps it would be better to rank the gaps. For instance, the main gap between satisfaction and importance is related to “Order delivery in non-busy times”. It appeared that it is really important for a retailer to get the order at the right time, however as the result shows Iranian distributors in the convenience store section do not have acceptable performance in right time delivery and this is one of the main concerns in the view of retailers. As said before, “Punctuality and trustworthiness of delivery agent” is another main important factor for retailers but it carries a vast gap between its importance and satisfaction in perspective of retailers. So honesty, reliability, punctuality and trustworthiness are features that are so important in view of Iranian retailers that distributor according to the entity of their occupation and their convenience did not pay adequate attention to it. “Possibility of complain tracking of distribution agents” could satisfy the retailers as they claimed and although it is necessary in view of retailers but there is a gap between importance and satisfaction level in this item. Results show that in view of communication and ease of contact with retailers, distribution companies had an acceptable performance, because there has not been a remarkable importance-satisfaction gap in this wise. Other gaps between importance and satisfaction are in this order:

1. F₂: Order delivery in non-busy times (I-S= 3.290)
2. F₁₀: Punctuality and trustworthiness of delivery agent (I-S= 2.837)
3. F₈: Possibility of complain tracking of distribution agents (I-S= 2.828)
4. F₉: Patience and carefulness of delivery agent in account settlement (I-S= 2.596)
5. F₆: Delivery of right ordered brands (I-S= 2.576)
6. F₅: Perfect and without defect order delivery (I-S= 2.485)
7. F₄: Delivery in ordered amount (I-S= 2.470)
8. F₁: Order delivery in standard and determined date (I-S= 2.450)
9. F₇: Good respect of distribution company employees (I-S= 1.930)
10. F₃: Ease of contact and calling delivery agent (I-S= 1.350).

Importance-Performance Analysis

Importance-Performance Analysis (IPA) is a good tool for understanding customer satisfaction and prioritizing service quality improvements. In a typical IPA, customer ratings of importance and performance across several attributes are plotted against each other and the resulting importance-performance (IP) space is divided into four quadrants. Partitions or so called quadrants have been determined according to mean of satisfaction and importance level declared by retailers and each factor has been placed in a special section of these quadrants as below; according to assigned scores by the retailer the matrix ranged from 5 to 8 for satisfaction and 8 to 10 for importance because of giving more clarity and distinction to matrix. As Bacon (2003) said, the factors have been placed in first quadrant (low importance and performance) have low priority and are counted as weaknesses, so as have not been paid more attention and concentration on. Also the factors place in the second quadrant (high importance and low performance) should have been concentrated on and worthy to pay more attention, because these factors are known as threats; on the other hand third quadrant (high importance and performance) are labeled as opportunities, an ought to keep up good work in them; and finally fourth quadrant (low importance and high performance) are counted as strengths and possible overkill.

As the figure shows the factor of “Possibility of complain tracking of distribution agents” is placed in first quadrant and requires low levels of attention because they are low priorities for the retailers. Also factors of “Good respect of distribution company employees” and “Ease of contact and calling delivery agent” are known as threats to distributors and should be paid more attention as a high level of concentration requires for these factors. Factors of “Perfect and without defect order delivery”, “Delivery of right ordered brands”, “Delivery in ordered amount” and “Order delivery in standard and

determined time” are located in third quadrant and the distributors are good at them, so they are known as opportunities and the distributors should keep up the good work on these factors. The rest of the important factors placed in fourth quadrant include: “Patience and carefulness of delivery agent in account settlement”, “Order delivery in non-busy times” and “Punctuality and trustworthiness of delivery agent” and are the strengths of distributors and they overkill in these factors. Another point that could be implied from the Importance-Performance Analysis is that Iranian distributors are sophisticated in delivery of undamaged and perfect orders because in these factors, they are in the best possible position and this could be as their core competency.

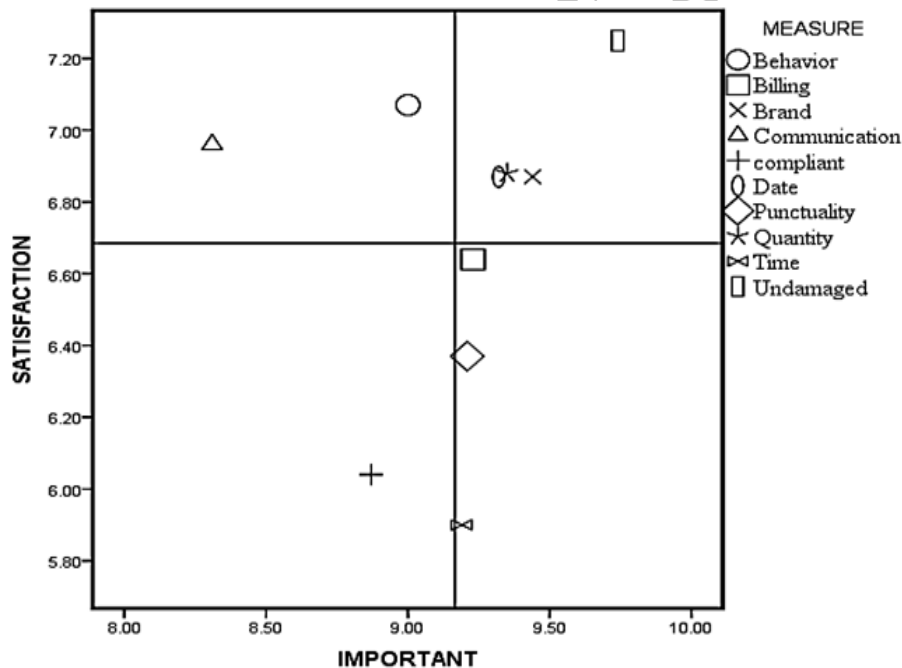


Figure 3. Importance-Performance Analysis of retailers' expectations

Findings

As it is clear, PDSQ is so important in satisfying retailers. So having a comprehensive scale to evaluate PDSQ could help distributor to be aware of their customers' satisfaction and improve their services. Exploring the literature of PDSQ shows that several researchers have surveyed this domain e.g. Mentzer *et al.* (1989) and (2001), Emerson and Grimm (1996), Bienstock *et al.* (1997) and Xing *et al.* (2010). And each has presented brilliant results, but due to the difference among cultural, sociological, economical and structural context of countries, especially high gap between western and eastern countries, approval of united prescription for all of them is not possible.

Iran is a country with a number of approximately 2 million retailing units that owned the first stage in the area, so a plenty of B2B relationship are being directed among retailers and distribution companies that cater to them. So, identifying the factors that evaluate the quality of these relationships is considered important and necessary and on the other existed factors due to their special context could not satisfy the aim of evaluating Iranian current system. So, the current study with the aim of extracting Physical Distribution Service Quality factors with a domestic view in Iran, employed a mixed-method approach among Iranian retailers of convenience stores to extract the important factors affecting PDSQ in this country.

10 important PDSQ factors were extracted and categorized in three dimensions: coordination of distribution agent (contains: Order delivery in standard and determined date; Order delivery in non-busy times; Ease of contact and calling delivery agent), ordering condition (Delivery in ordered amount; Perfect and without defect order delivery; Delivery of right ordered brands), and Behavioral features of distribution agent (Good respect of distribution company employees; Possibility of complain tracking of distribution agents; Patience and carefulness of delivery agent in account settlement; Punctuality and

trustworthiness of delivery agent). Delivery of undamaged order is known as the most important factor. Greatest Importance-Satisfaction gap is discovered in “delivery in non-busy time (right time)” factor.

Finally, IPA matrix appeared that even though factors of “billing and account settlement”, “distributor punctuality”, and “right time delivery” are so important in view of Iranian retailers, they have not been paid a suitable attention by the distribution companies of in Iran in the convenience store sections. Referring to previous studies shows that three categories or dimensions of the current study are firstly established and no previous researches have mentioned them, but some sub-categories resemble previous works. For instance, Mentzer *et al.* (1989, 2001); Emerson and Grimm (1996); Bienstock *et al.* (1997) mentioned factors of timeliness that are common with time factor that assigns to the Coordination dimension of current study; also they mentioned order status information and order condition that resemble the order condition dimension of the study. The factor of “the quality of delivery” declared so general and could be assigned to all of three dimensions. On-time delivery also is mentioned in Traendly, *et al.* (2004, 2006).

One of brilliant points that is worthy to say is the factor of “In-stock at store” that is mentioned in some studies e.g. Traendly, *et al.* (2004) but is not mentioned in current studies or in other word was not important in the view of Iranian retailers. It refers to high level of competition that exists among different distribution channels and superabundance of distribution companies in Iran that their stock is not a highlighted in the point of view of retailers. The study of Xing *et al.* (2010) has no direct semblance with current one, due to the on-line context of their research.

Another brilliant finding of the study is the 3rd dimension of the model as the behavior of distributor that has not been mentioned in any study before.

Discussion and Managerial Implications

The research resulted in some concise but useful points that could help managers of distribution companies upgrade their services. They are small but decisive points that ignoring them could make disasters such as losing the market's share in a competitive market like today's, especially in the distribution section. So as the study shows some aspects such as coordination in distribution, ordering condition and the behavioral characteristics have to be considered in presenting a good PDSQ that could not be implemented unless recruiting professional and committed agents, training them, reengineering distribution and logistics systems and upgrading ordering systems. On the other hand, setting up a comprehensive B2B CRM system that assures the continuous, sustainable and efficient relationship with retailers could guarantee the right PDSQ. Entering on-line trade-offs is another productive instruction that absolutely upgrades the service quality in PD.

The research highlighted some gaps too, that have to be mentioned, especially in Iran. IPA matrix showed in billing, timeliness and punctuality that are so important in view of retailers, the distribution sectors in Iran have not presented an acceptable performance in convenience stores, so new strategies are required for setting up these disorders. Despite of these items, according to IPA matrix the distribution companies should go for good work in any part that have had an effective performance in important and less important factors. Based on this study future research areas are recommended: measuring PDSQ for chain stores, measuring electronic PDSQ for e-retailers, measuring PDSQ for different types of products.

Current research, while providing insightful results, is not without its limitations which should be taken into consideration in the interpretation of the results. First, although the important factors of

PDSQ are identified in this research, because of the presence of the wide domain of convenience stores in Tehran, it would better to study more stores and retailers in more geographical regions of this city by quantitative phases. While the wide ranges of PDSQ, the research is limited to convenience stores that may make the results non-functional to other retailers.

Archive of SID

References

- Bacon, D.R. (2003). A comparison of approaches to Importance-Performance Analysis. *International Journal of Market Research*, 45 (1), 55-71.
- Barker, D. (2002). *Marketing Channels and Supply Chain Management*. South Western pub.
- Bharadwaj, S. (2006). Distribution and Channel Management. *Management Science II*, Indian Institute of Technology Madras.
- Bienstock, C.C., Mentzer, J.T. and Bird, M.M. (1997). Measuring physical distribution service quality. *Journal of the Academy of Marketing Science*, 25(1), 31-44.
- Chang, M.K. (1998). Predicting unethical behavior: a comparison of the theory of reasoned action and the theory of planned behavior. *Journal of Business Ethics*, 17 (16), 1825-34.
- Chatzoglou, P.D., and Vraimaki, E. (2009). Knowledge-sharing behavior of bank employees in Greece. *Business Process Management Journal*, 15(2), 245-266.
- Chin, W.W. (1998). The partial least squares approach to structural equation modeling, in Markoulides, G.A. (Ed.). *Modern Methods for Business Research*, Lawrence Erlbaum, Mahwah, NJ.
- Commercial studies center of International Monetary Fund. (2011). Retrieved from <http://www.imf.org/>.
- Center of Food Industry Associations of Iran (2011). Retrieved from <http://www.ifif.ir/>.
- Emerson, C.J., and Grimm, C.M. (1996). Logistics and marketing components of customer service: an empirical test of the Mentzer, Gomes and Krapfel model. *International Journal of Physical Distribution & Logistics Management*, 26 (8), 29-42.
- Fava Neves, M., Zuurbier, P., and Cortez Campomar, M. (2001). A model for the distribution channels planning process. *Journal of business and industrial marketing*, 16 (7), 518-539.
- Fornell, C. and Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18 (1), 39-50.
- Grant, D.B., Lambert, D.M., J. R., Stock, and Ellram, L.M. (2006).

- Fundamentals of Logistics Management* (First European Edition). McGraw-Hill Education, Maidenhead.
- Hoe, S.L. (2008). Issues and procedures in adopting the structural equation modeling technique. *Journal of Applied Quantitative Method*, 3(1), 76-83.
- Irani, H.R., Shahanaghi, K., and Jandaghi, Gh. (2011). Develop a Framework for Selection of Intermediary in Marketing Channel. *Iranian Journal of Management Studies*, 4 (1), 25-42
- Jackson, Jr.D.W., Keith J.E., and Burdick, R.K. (1986). Examining the relative importance of physical distribution service elements. *Journal of business logistics* 7 (2), 15-32.
- Kvale, S. (1996). *Interviews: An Introduction to qualitative research interviewing* Thousand Oaks, CA: Sage.
- Lin, H.F. and Lee, G.G. (2004). Perceptions of senior managers toward knowledge sharing behavior. *Management Decision*, 42 (1), 108-25.
- Mentzer, J., Gomez, R., and Krapfel, J. (1989). Physical Distribution Service: A fundamental Marketing Concept?. *Journal of the Academy of Marketing Science*, 17 (1), 53-62.
- Mentzer, J.T., Flint, D.J. and Hult, G.T.M. (2001). Logistics service quality as a segment-customized process. *Journal of Marketing*, 65, 82-104.
- Miles, M.B. and Huberman, A.M. (1984). *Qualitative Data Analysis: A Sourcebook of New Methods*. Sage Beverly Hills, CA.
- Onwong'a, M.M., Mamati, F.W., Kangu, M., and Onsongo, E.N. (2010). Product management and retailer expectation on the sale of consumer good in Kenya, Perspectives on Emerging Roles of Retailers from Supermarkets in Kisii Town. *African Journal of Business and Management*, 1, 260-273
- Mackinnon, A.C. (1986). *The Physical Distribution Strategies of Multiple Retailers*. Cassel Publishers Ltd.
- Perreault, Jr. W. D., Cannon, J., McCarthy, E.J. (2010). *Essentials of Marketing* (13th Edition). McGraw-Hill Higher Education.
- Perreault, Jr.W.D., and Russ, F.A. (1976). Physical Distribution Service in Industrial Purchase Decisions. *Journal of Marketing*, 40, 3-10.
- Kotler, Ph., Armstrong G. (2011). *Principles of Marketing*, Pearson Prentice Hall.
- Tompkins, J., and Traendly, J. (2006). Supply Chain and Best Practices Consortium, *Rila Logistics*, February 20, (Tompkins Associates), 17.

-
- Straub, D.W. (1989). Validating instruments in MIS research. *MIS Quarterly*, 13(2), 147-69.
- Voss, C., Tsikniktsis, N. and Frohlich, M. (2002). Case research in operations management. *International Journal of Operations and Production Management*, 22 (2), 195-219.
- Xing, Y., and Grant, D.B. (2006). Developing a framework for measuring physical distribution service quality of multi-channel and pure player internet retailers. *International Journal of Retail and Distribution Management* 34 (4/5), 278-289.
- Xing, Y., Grant, D. B., McKinnon, A.C., and Fernie, J. (2010). Physical distribution service quality in online retailing. *International Journal of Physical Distribution and Logistics Management*, 40(5), 415-432.

Archive of SID