

Impact of Outbound Logistics in Purchase Decision of Small Electronic Home Appliance Traders in Dhaka City

Mohammad Naveed Ahmed

Doctor of Business Administration Candidate
IBA, University of Dhaka, Dhaka 1000

Abstract- *Outbound logistics, a primary activity of an organization's value chain, deliver products or services to the customers. To be more precise, outbound logistics mainly focuses on the distribution of products to the point of sales. From the literature, it is found that outbound logistics is related to internal or external to the organization such as - collection, storage, and distribution systems, etc. Market-ers must understand few things – what the customer wants in terms of logistics support and how logistics support can create value for the customers? Based on this scenario, this research primarily focuses on the fact that lack of understanding about the elements of outbound logistics is leading to a lack of identifying it as a value creation tool to impact the consumer purchase decision in the small electronic home appliance industry of Bangladesh. In total, around 490 home appliance traders is selected based on convenience from Dhaka city and inter-viewed based on a questionnaire. Factor Analysis is used to identify the most relevant factors from 14 (fourteen) variables related to outbound logistics and then a regression analysis is used to show how each of those factors related to outbound logistics in the small home appliance sector is impacting the purchase decision. The major outcome from this research is the trader's purchase decision equation which a home appliance marketer can use to identify the elements of outbound logistics where he can focus more to strengthen his logistics channel.*

Article History

Received : 30 December 2016

Revised : 16 May 2017

Accepted : 17 May 2017

Keywords

Value chain, Outbound logistics, Purchase decision, Small home appliance, Factor analysis, Regression analysis.

JEL Classification

L68; C38

Article Citation : Ahmed, M. N. (2016). Impact of Outbound Logistics in Purchase Decision of Small Electronic Home Appliance Traders in Dhaka City. *The Business Review*, 5, 53-64, ISSN : 1996-3637

1. INTRODUCTION

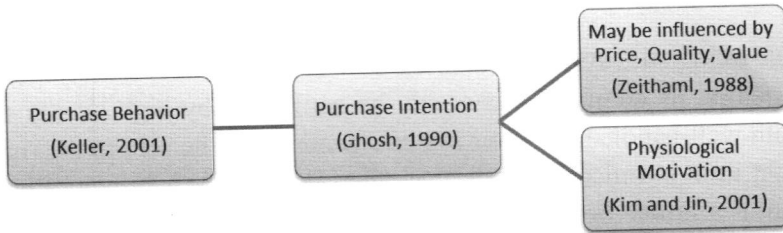
Based on the report published by Euromonitor International (June, 2014), the consumer electronics market of Bangladesh experienced a current value CAGR of 14% over 2009-2013 to reach USD 1.9 billion in the later year. A growing middle class, increasing consumer sophistication, and introduction of new products contributed to the growing sales of consumer electronics. As the usages of electronic appliances are growing in Bangladesh, local brands are becoming popular in the Small Home Appliance industry of Bangladesh, and as a result number of small appliance traders are also increasing. Based on industry experience, most of these traders are buying these appliance goods from different places in Bangladesh and then transport them to their facility or shop. Many traders arrange their own transport, some outsource the logistics support and others take the support from the appliance marketer themselves. Outbound Logistics outsourcing has a significant effect on how firms deliver products to their customers. Indeed, many firms do not own or manage the transportation and warehousing resources used for outbound shipments from their facilities. This research investigates how the outbound logistics are impacting the purchase decision of the small appliance traders in Dhaka City.

2. LITERATURE REVIEW

It was in 1985 that the term “Value Chain” was coined by Porter (1985) and all its subsidiary headings. For this research, the researcher will look at some of the literature surrounding the outbound logistics, the primary activity of Porter’s value Chain model and then it will discuss how consumer’s purchase intention evolve.

2.1 Purchase intention

Consumers’ buying decision is very complex. Keller (2001) mentioned usually consumers’ behavior, perception and their attitude create the purchasing intention. And in purchase behavior, intention is an important key point for consumers during taking into consideration and evaluating certain product. Ghosh (1990) stated that purchase intention is one of the key elements in the purchasing process. Intention drives the consumers when they decide to purchase the product in certain stores. However, purchase intention may be changed due to the influence of price, quality observation and value perception (Zeithaml, 1988). In addition, consumers will be provoked by internal impulse and external environment during the purchasing process. In general, customer behavior will be altered or driven by the physiological drive that stimulates their action which bring them to the store to fulfill their need (Kim and Jin, 2001). The literature of purchase intention can be summarized by the following diagram:



2.2 Outbound Logistics

Based on Investopedia, logistics is the general management of how resources are acquired, stored and transported to their final destination from the point of origin in order to meet customers' requirements. Johnson and Wood's definition (cited in Tilanus, 1997) mentioned logistics describes the entire process of materials and products moving into, through, and out of the firm. Inbound logistics covers the movement of material received from suppliers. Outbound logistics refers to the movement of goods outward from the end of the assembly line or from the warehouse to the customer. Recent development of logistics definitions argues that logistics is the process of anticipating customer needs and wants and optimizing the goods or service producing network to fulfill customer requests in a timely way (Tilanus, 1997). Combining all the literature, it can be argued that outbound logistics is a customer-oriented operation management.

2.3 Factors in Outbound Logistics

The efficiency and effectiveness of the outbound logistics operation has a considerable influence not only on the business performance of the marketer, but also the customer's perception of the quality of the products and services provided by the marketer. The uncertainty of the flows of finished goods to the customer may create dissatisfaction to the firm's customer base. Accordingly, logistics is strategically important in achieving competitive advantage

Logistics services comprise of two things – physical activities and non physical activities. Physical activities refer to the activities like transport, storage etc. and non-physical activities include supply chain design, selection of contractors, freight negotiations, etc. Most activities of logistics services are considered as bi-directional movement. Tracking and tracing are also important elements of logistics. It provides essential data in each step of the interaction among logistics services and the target destinations. Infrastructure comprises human resources, financial resources, packaging materials, warehouses, transport and communications.

The role of logistics system or method is more complex than carrying goods for the proprietors. Its complexity can only be confirmed by high quality management. With well-handled transport system, goods could be sent to the right place at the right time in order to satisfy customers' demands. It brings efficacy, and also it builds a bridge between producers and consumers. Therefore, transportation or logistics method is the base of efficiency and economy in business logistics and expands other functions of logistics system (Tseng, Yue, & Taylor, 2005). In addition, a good transport system performing in logistics activities brings benefits not only to service quality but also to a company's competitiveness.

Typically, firms or businesses outsource a range of activities in order to be competitive. Reducing costs (Aimi, 2007; Jiang, Frazier & Prater, 2006; Lau & Zhang, 2006) is an important issue to outsource activities. Other reasons to outsource logistics related activities are to improve product quality (Bardhan, Whitaker & Mithas, 2006), gain flexibility in decision making (Lau & Zhang, 2006), develop market coverage (Skjoett-Larsen, 2002), or to gain additional capacity (Linder, 2004; Mason, Cole, Ulrey & Yan, 2002). Elliott (2006) argued that in most cases the objective of outsourcing is a targeted 20% cost reduction. Most of the research shows how outsourcing the outbound logistics is successful, but there is still a gap of how the factors associated with the logistics are impacting the purchase decision.

Customer service in logistics is the process of providing goods, information and services to customers in order to create satisfaction in a cost-effective manner (Sadler, 2007). Specifically, it talks about how the logistics provider handles the queries on "creation of time" and "place utility" (Christopher, 2011). Products will not have value unless they have positioned to the right place when it is needed (Christopher, 2011). But the required service elements should be developed by customers themselves (Christopher, 2011).

Takele (2014) suggests outbound logistics provokes the customer's choice mainly in 3 aspects: availability, reliability, and flexibility. Cortese (2003) mentioned all the logistics service provider's goal is to deliver the goods in damage free condition. Many providers offer insured service and confirm the security. Anderson, Britt, and Favre (2007) mentioned one of the major principles in supply chain management is strategically reducing the total cost of owning materials and services and developing a supply chain-wide technology strategy that supports multiple levels of decision making and gives a clear view of the flow of products, services, and information.

Indicators	Authors
Distance	Skjoett-Larsen, 2002
Cost	Aimi, 2007; Elliott, 2006; Jiang, Frazier & Prater, 2006; Lau & Zhang, 2006; Anderson, Britt, & Favre, 2007
Duration	Christopher, 2011
Quick	Christopher, 2011
Security	Cortese, 2003
Insurance	Cortese, 2003
Reputation	Takele, 2014
Damage	Cortese, 2003
Responsive	Sadler, 2007; Tilanus, 1997; Christopher, 2011; Anderson, Britt, & Favre, 2007
Logistics means	Tseng, Yue, & Taylor, 2005
On time	Christopher, 2011; Anderson, Britt, & Favre, 1997
Inventory	Takele, 2014; Christopher, 2011; Anderson, Britt, & Favre, 2007
Product Mix	Takele, 2014; Anderson, Britt, & Favre, 2007
Support	Bowersox, Closs & Cooper, 2010

Based on this scenario, this research primarily focuses on the fact that lack of understanding about the elements of outbound logistics is leading to a lack of identifying it as a value creation tool to impact the consumer purchase decision in the small electronic home appliance industry of Bangladesh. Using both dimensions of the literature, i.e. outbound logistics drivers and purchase intention, the literature can be checked how both dimensions can be linked.

3. OBJECTIVES OF THE STUDY

The aim of the study is to increase the current understanding of the factors that influence the small appliance traders purchase decision. The prime objectives of the study are as follows:

- a. To identify the outbound logistics factors impacting the purchase decision of the small appliance traders in Dhaka city
- b. To evaluate the contribution of each factor on the overall purchase decision of the small appliance traders in Dhaka city
- c. To suggest some measures of the outbound logistics factors impacting the purchase decision of the traders to improve the appliance marketers task performance in Dhaka city.

4. RESEARCH METHODOLOGY

Literature review has been done to identify the 14 outbound logistics related variables impacting the purchase decision of the small appliance related traders and then quantitative research methodology is used to fulfill the objectives of the research. The variables include distance, cost, duration, quick, security, insurance, reputation, damage, responsive, logistics means, On-time, inventory, product mix, and support.

4.1 Sampling and Data Collection

A survey was conducted on 490 small appliance traders in Dhaka city based on a questionnaire in May 2016. The frame of respondents of the research was comprised of managers or owners of the small appliance shops of Dhaka city.

4.2 Questionnaire Design

Based on the literature review, 14 variables related to outbound logistics were identified which may impact the purchase decision. A structured, close ended questionnaire using 5 point Likert Scale with end points ranging from strongly agree (5) to strongly disagree (1) was developed for the research to judge those 14 variables. The questionnaire also included the necessary trading type related questions. Initially, a draft questionnaire was prepared based on secondary research and extensive brainstorming. The questionnaire was verified in a validation meeting consisting of professionals from the small appliance sector.

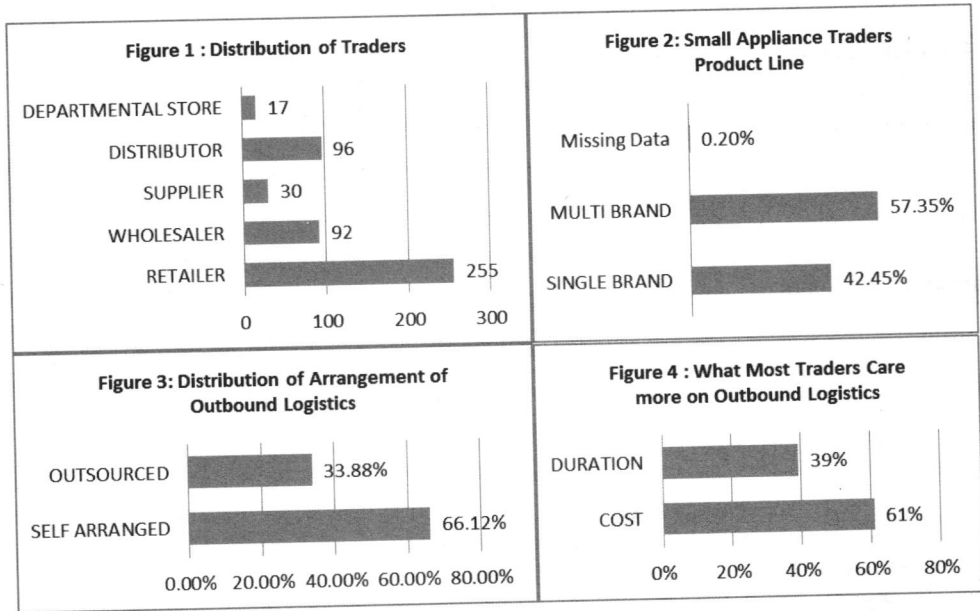
4.3 Data Analysis

Three types of analysis were carried out in this study:

- a. Descriptive Analysis to explain the respondent Characteristics
- b. Factor analysis to group the response into the hypothesized quality attributes
- c. Regression analysis to find out if and to what extent the quality attributes impact the purchase decision of the small appliance traders.

5. FINDINGS

The survey was done in Dhaka city on randomly selected 490 traders, which was represented by 52% retailers, 18.8% wholesaler, 6.1% suppliers, 19.6% distributors and 3.5% departmental stores. Here retailers are defined by the regular appliance traders who are visible in all general markets of Dhaka. Wholesalers are the one who does trading on bulk basis and are generally present in the wholesale markets of Dhaka city like Nawabpur, Mitfort, Baitulmokarram area, etc. Suppliers are defined by those entities that sources goods from wholesalers or distributors for other agencies or organizations based on the requirement of those agencies. Distributors are those sellers who are active in both retail and wholesale activities, but under the umbrella of a brand or brands. Department stores are those traders who are not really an appliance product centric, but the appliance is on their shelves along with other goods. Agora, Swapno, PQS – these stores are considered as departmental stores for this research.



42% of the traders trade single branded electronics appliance item and 57% deals with different branded items. Around 66% of the traders arrange the outbound logistics by themselves based on their convenience which means their purchase decision also depends on the arrangement or availability of the outbound logistic support and while choosing the outbound logistics, 61% of the traders informed that, they consider the cost factors than the duration of the transportation.

Based on the literature review, 14 variables related to outbound logistics were identified which may impact the purchase decision. A questionnaire was designed to do factor analysis of those 14 variables on a 5 point Likert scale to identify the most relevant factors related to outbound logistics which may impact the purchase decision of the trader in the small home appliance industry. Cronbach's Alpha (0.552) confirms the reliability of the 14 variables, which refers poor but acceptable data. KMO value is 0.678 which is higher than 0.5 which shows the validity or adequacy of the sample. After running factor analysis, 6 factors were identified as in following table:

Rotated Component Matrix ^a							
Identified Factors	Variables	Component					
		1	2	3	4	5	6
Security of the Outbound Logistics	Security	.755	-.003	.053	-.049	.107	-.073
	Insurance	.722	.018	.122	.029	-.171	.069
	Reputation	.597	.068	.160	.412	.110	.057
Responsiveness of the Logistics Provider	Responsive	-.007	.711	.125	.120	-.005	-.033
	Distance	.196	-.600	-.039	.389	.140	.115
	Damage	.297	.517	-.051	.003	.248	.133
Inventory Availability of the Goods	Quick	.265	-.119	.683	-.022	.041	.055
	Inventory	-.138	.137	.620	.240	-.268	.025
	Ontime	.228	.219	.569	.099	.188	.038
Methods of Logistics	Means of Logistics	.000	-.042	.197	.781	.082	-.010
	Marketer's Support on Logistics	.219	.386	-.386	.461	-.255	-.007
Cost of Logistics	Cost	.011	.010	.023	.066	.822	.007
Duration of Logistics	Duration	.121	-.173	.069	-.050	-.208	.791
	Prduct Mix	-.118	.188	.036	.081	.343	.676
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. ^a Rotation converged in 7 iterations.							

From the above output, it can be seen that security, insurance and reputation can be grouped under the security factor of the logistics service provider which may impact the purchase decision of the trader from their sources. Other identified factors are the responsiveness of the logistics support provider, inventory availability of the marketer or manufacturer, methods of logistics from the source to the trader, the cost of logistics and the duration from the source to the trader.

Regression analysis is done based on these 6 factors to see how they impact the purchase decision of the trader. The output came as below:

Impact on the Purchase Decision of The Trader = 3.196 + 0.505 *Methods of Logistics* + 0.205 *Security of The Outbound Logistics* + 0.175 *Responsiveness of The Logistics Provider* + 0.109 *Cost of Logistics*

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.196	.055		57.967	.000
Factor_Security	.205	.055	.152	3.715	.000
Factor_Responsive	.175	.055	.130	3.175	.002
Factor_Inventory	-.040	.055	-.030	-.733	.464
Factor_Logistics_Means	.505	.055	.374	9.144	.000
Factor_Cost	.109	.055	.081	1.975	.049
Factor_Duration	.079	.055	.059	1.430	.153

a. Dependent Variable: Decision

Inventory availability and the duration factor are excluded from the model as they are not significant. It can be justified based on the fact that an amount of time or duration is needed by any logistics company and they are similar for all the companies; therefore it does not have much impact on the purchase decision of the traders. Basically from the purchase decision model, it can be seen that an appliance marketer can focus more on partnering with logistics service provider who can offer secured service, and responsive in customer requirement handling. Moreover, this service also needs to be cost efficient. Logistics means also plays an important role in the purchase decision making of the trader, as traders prefer to buy goods from the marketer based on their convenience. Traders often tend to buy goods from the marketers who are in the same city. However, sometimes this logistics means or methods are uncontrollable factor for the trader as road development, infrastructure issues needs to be addressed to different authorities. Based on the informal discussion with the traders during the survey, it was understood that the Dhaka city traders prefer to buy goods from the appliance marketers in Dhaka if the price is better than other city. Some traders buy goods from the marketers of Chittagong or Khulna area if the product price along with the logistics price from that area is favorable than Dhaka city.

From the model, it can be seen that cost impacts the least among the 4 significant factors. It can be justified based on the scenario that, most of the transport companies offer similar types of rates based on their service. For example, the cost of a carton of rice cooker transportation from Chittagong to Dhaka by different logistics service providers in Dhaka are as follows:

Korotowa	Sundarban	Continental	Dipika	Agomoni	Shomrat	Average
TK. 95	TK. 120	TK. 120	TK. 80	TK. 75	TK. 80	TK. 95

Source: Logistics Service Provider's Information

From the above table, it can be seen that a standard rice cooker carton from Chittagong to Dhaka is similar, but it makes a big difference, when the trader buys goods in bulk quantity. So, it can be understood that in the equation, the cost factor is having a minimal role as it plays an important role on the trader who buys in bulk and it does not when the trader buys few pieces.

6. CONCLUSION

The primary objective of this research was to identify the elements where an appliance marketer can focus to create more value to their customers in terms of logistics. And while identifying the elements, this paper also attempted to create a model on how logistics factors impact purchase behavior of the traders. Based on the model, following recommendations can be made to the marketer of the small appliance industry:

- a. It is better to provide support on outbound logistics related services to gain better market access, and it can be done either by owning them or by having a partnership with good logistics company.
- b. Security of the transportation and responsiveness of the logistics company should be the key element while partnering with the logistics company.
- c. Cost issues should be monitored as it also impacts the purchase behavior.

7. LIMITATIONS

The research sample is only from Dhaka city; hence the purchase decision impact model might not be same for other cities in Bangladesh. Further research can be done in other cities and by comparing different types of customers – like small traders, wholesalers, retailers or the end users.

REFERENCES

- [1] Aimi, G. (2007). Logistics outsourcing: what it takes to succeed. *Supply Chain Management Review*, 11(8), 13.
- [2] Anderson, D. L., Britt, F. F., & Favre, D. J. (1997). The 7 principles of supply chain management. *Supply Chain Management Review*, 11(3), 41-46.
- [3] Bardhan, I., Whitaker, J., & Mithas, S. (2006). Information technology, production process outsourcing, and manufacturing plant performance. *Journal of Management Information Systems*, 23(2), 13-40.
- [4] Bowersox, D. J., Closs, D. J., & Cooper, M. B. (2010). *Supply Chain Logistics Management* (Vol. 3). New York, NY: McGraw-Hill.
- [5] Christopher, M. (2011). *Logistics & Supply Chain Management*. Pearson UK.
- [6] Cortese, L., (2003). *Reducing the Risk of Damage, Loss and Claims*, Online: <http://www.inboundlogistics.com/cms/article/reducing-the-risk-of-damage-loss-and-claims/> Retrieved Date: 28 July 2016.
- [7] Elliott, G. C. (2006). International outsourcing: Values vs. economics. *Quality Progress*, 39(8), 20.
- [8] Euromonitor International. (2014). *Markets of the Future in Bangladesh*. <http://www.euromonitor.com/markets-of-the-future-in-bangladesh/report>, retrieved Date: June 2, 2016.
- [9] Ghosh, A. (1990). *Retail management*. Chicago: Drydden press.

- [10] Hung Lau, K., & Zhang, J. (2006). Drivers and obstacles of outsourcing practices in China. *International Journal of Physical Distribution & Logistics Management*, 36(10), 776-792.
- [11] Jiang, B., Frazier, G. V., & Prater, E. L. (2006). Outsourcing effects on firms' operational performance: An empirical study. *International Journal of Operations & Production Management*, 26(12), 1280-1300.
- [12] Keller, K. L. (2001). Building customer-based brand equity. *Marketing Management*, 10(2), 14-19.
- [13] Linder, J. C. (2004). Transformational outsourcing. *Sloan Management Review*, 45(2), 52-58.
- [14] Mason, S. J., Cole, M. H., Ulrey, B. T., & Yan, L. (2002). Improving electronics manufacturing supply chain agility through outsourcing. *International Journal of Physical Distribution & Logistics Management*, 32(7), 610-620.
- [15] Ok Kim, J., & Jin, B. (2001). Korean consumers' patronage of discount stores: domestic vs multinational discount store shoppers' profiles. *Journal of Consumer Marketing*, 18(3), 236-255.
- [16] Porter, M. E. (1985). Technology and competitive advantage. *Journal of Business Strategy*, 5(3), 60-78.
- [17] Sadler, I. (2007). *Logistics and Supply Chain Integration*. Sage.
- [18] Skjoett-Larsen, T. (2000). Third party logistics—from an interorganizational point of view. *International Journal of Physical Distribution & Logistics Management*, 30(2), 112-127.
- [19] Takele T. B. (2014). *Customer Satisfaction Measurement Conceptual Model for Outbound Logistics*, RJSSM, 4(7). Web: www.theinternationaljournal.org, retrieved Date: June 12, 2016.
- [20] Tilanus, B. (1997). *Information Systems in Logistics and Transportation*. London: Pergamon.
- [21] Tseng, Y. Y., Yue, W. L., & Taylor, M. A. (2005). The role of transportation in logistics chain. In *Proceedings of the Eastern Asia Society for Transportation Studies*, 5, 1657-1672.
- [22] Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *The Journal of Marketing*, 2-22.