Chapter 12
Modelling Clearance Sales Outshopping Behaviour Using Neural Network Model

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ABSTRACT
The neural network is a very useful tool for approximation of a function, time series prediction, classification, and pattern recognition. If there is found to be a non-linear relationship between input data and output data, it is difficult to analyse the system. A neural network is very effective to solve this problem. This chapter studies the applied neural network model in relation to clearance sales outshopping behaviour. Since neural network theory can be applied effectively to this case, the authors have used neural network theory to recognise the retail area satisfaction and loyalty. To measure the impact among the retail area attributes, retail area satisfaction, and retail area loyalty, the authors have used the neural network model. In this chapter, they have treated twenty seven factors as the input signals into the input layer. Therefore, they find the weights between nodes in the relationship between the value of all twenty seven factors and the retail area satisfaction and loyalty. The development of the model by retail area attributes, and their interpretation, was facilitated by a collection of data across three trading areas. This neural network modeling approach to understand clearance sales outshopping behaviour provides retail managers with information to support retail strategy development.

INTRODUCTION
Clearing sale is a dominant part of modern retailing worldwide. As a marketing tool, it has always had an important and legitimate role in creating consumer excitement and in clearing surplus or obsolete stock (Merrilees & Fam, 1999). Retail items that are “cleared” at the end of its season are referred to as seasonal merchandise. When merchandise is cleared, it is often sold below cost, at a price that will be called the residual value (Smith, et al., 1998). Retail promotions or special sales events are designed to increase store traffic and sales and, ultimately, store profits (Walters, 1988). Retail stores start the season without knowing which designs they have, if any, will be fashion-
Stores initially charge a fashion premium in hopes of capturing their fashion market, but as the end of the season approaches with designs still on the shelves, they adjust their expectations downward. At some point in the season, it becomes more profitable to have sales to capture the discount market. Retailers have higher prices early in the season, followed by deeper markdowns in the clearance period (Courty & Li, 1999). Further, inventory sensitivity makes it more desirable to have leftover merchandise at the end of the clearance period (Smith & Achabal, 1998).

Shopping today is much more than just buying—it is an experience in itself. To best utilize the available time, the Indian consumer is on the lookout for avenues that would give him the maximum value for his money and time spent (Parikh, 2006). Clearance sale stimulates the response from consumers in a cyclical seasonality, viz. summer and post-Christmas winter – spring clearances offered by the self-service retail stores. Theoretically, it is suggested that consumers will react favourably to a clearance sale. Clearance sales act as stimulus to consumers who are likely to elicit a positive response. Further, it is predicted that the magnitude of this positive response will be proportional to the value of an option to select the discount sales alternative. Individual consumer behaviour to a discount sales option is a function of preference for the option, whether it is a considered option or any choice constraint is personally directed. The consumer response is also affected by search associated with making a decision on a clearance sale. Consumer response to clearance sales is positively related to the importance of price advantage while is inversely related to the change in decision difficulty or intimidation of search costs (Rajagopal, 2007). Outshopping is quite common during clearance sales and this study covers the modelling of clearance sales outshoppers.

Customer outshopping is defined as customer buying goods away from home that could be purchased locally (Anderson & Kaminsky, 1985). Outshopping was found to be less frequent among lower-income families, and families with younger children or a large number of children. The desire for access to larger and more varied selections of men’s and women’s clothing was the principal factor motivating out-of-town shopping. Dissatisfaction with local selections was most common among the higher-income families, while concern over local prices was most common among the lower-income families (Herrmann & Beik, 1968).

Outshopping behaviour is of concern to regional retailers as they recognize competitive forces coming not only from within their own regional trading community, but also from larger, distant regional or urban trading communities (Jarratt, 1998). Outshopping is generally accepted as a benefit for urban retailers and it results in a net financial profit to the urban retailers.

As a result, outshopping behaviour has recently emerged as a significant focus of retailing research. Lennon et al. (2009) investigate rural consumers’ online shopping for food and fiber products as a function of satisfaction with local retailing and outshopping. Lee et al. (2009) investigated the relationship between consumer outshopping-related characteristics and preference for Internet shopping. Ricks and Pettypool (2008) investigated the perception of the small retailers regarding the impact of the superstores in the area and student opinions of shopping in the area. Hui and Wan (2008) compared the travel frequencies of 203 Singapore residents who travelled to Malaysia for shopping purposes. Findlay and Sparks (2008) analysed three comparable consumer surveys of shopping behaviour in the Scottish Borders. Lennon et al. (2007) predicted and found that clothing outshopping behaviour could be significantly predicted by the degree of satisfaction with local retailing and number of children remaining in the home. Paddison and Calderwood (2007) reviewed the dynamic forms of rural retailing, by location, that have innovated through a mixture of actions leading to growth, adaptation, diversification and differentiation.

Based on the existing literature, Guo et al. (2006) confirmed previous findings that product