

## **Industrial Buyer Behaviour Model: An Empirical Investigation on Implications of Customer Handling Behaviour for Bar Code Printers**

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**Abstract:** *The major intend of this research to the industrial buyer behaviour and customer handling behaviour for barcode printers in Chennai District. The nature of the research is exploratory method, and the sample size is 602 industries, those who are using barcode printers in Chennai District and data collection method used in the research is “Questionnaire Method”. Data will be analysed by using SPSS 20.0 and Smart PLS 3.0. Findings, discussions, implications and conclusions were made by keeping an eye on the research objectives.*

**Keywords:** Industrial Buyer Behaviour, Barcode Printers, Exploratory Method and Customer Handling Behaviour

### **Introduction**

It is considered as highly important to be aware of why a customer or buyer makes a purchase. Without such an understanding, businesses find it hard to respond to the customer’s needs and wants (Parkinsson & Baker, 1986). It is important to be aware of the differences between consumer buying and industrial buying because the industrial buyer behaviour differs from consumer buying in many aspects such as; using more variables and greater difficulty to identify process participants (Moriarty, 1984). The industrial buying is described by Parkinsson & Baker (1986) as the buy of a product which is made to please the entire organization instead of satisfying just one individual. Industrial buying behaviour is considered as being a elementary concept when it comes to investigating buyer behaviour in all types of organizations (ibid). Also, in industrial buying situations there is a perception of greater use of marketing information, greater exploratory objective in information collection and greater formalization. (Deshpande & Zaltman, 1987)

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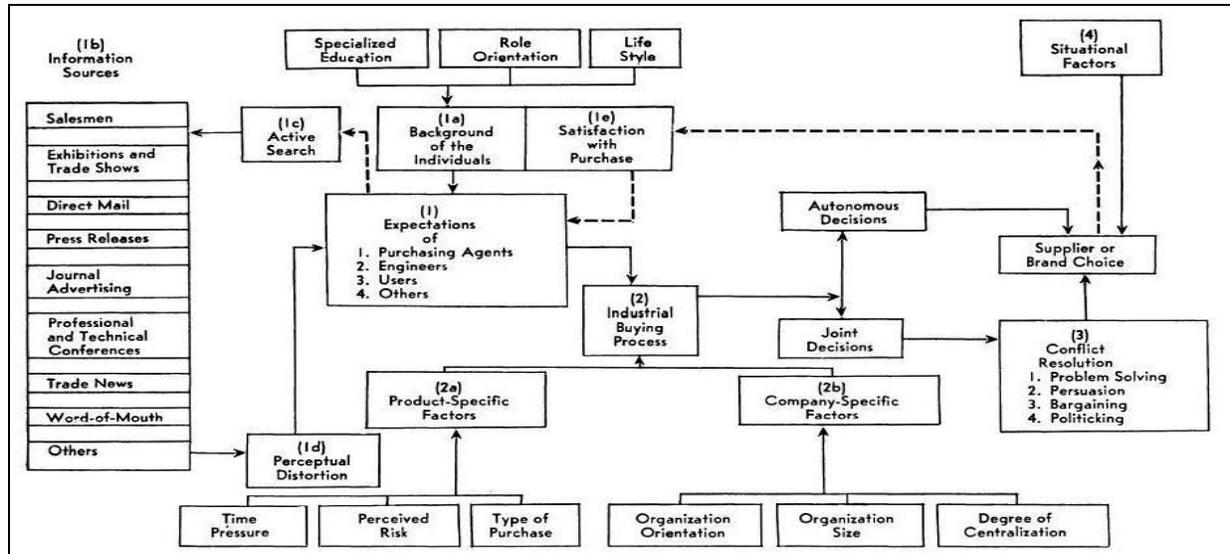
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**Figure 1: An integrative model for industrial buyer behaviour**

The model of industrial buyer behaviour is summarized in Figure 1. Although this illustrative presentation looks complex due to the large number of variables and complicated relationships among them, this is because it is a generic model which attempts to describe and explain all types of industrial buying decisions. One can, however, simplify the actual application of the model in a specific study in at least two ways. First, several variables are included as conditions to hold constant differences among types of products to be purchased (product-specific factors) and differences among types of purchasing organizations. These exogenous factors will not be necessary if the objective of a study is to describe the process of buying behaviour for a specific product or service. Second, some of the decision-process variables can also be ignored if the interest is strictly to conduct a survey of static measurement of the psychology of the organizational buyers. For example, perceptual bias and active search variables may be eliminated if the interest is not in the process of communication to the organizational buyers.

This model is similar to the Howard-Sheth model of buyer behaviour in format and classification of variables. However, there are several significant differences. First, while the Howard-Sheth model is more general and probably more useful in consumer behaviour, the model described in this article is limited to organizational buying alone. Second, the Howard-Sheth model is limited to the individual decision-making process, whereas this model explicitly describes the joint decision-making process. Finally, there are fewer variables in this model than in the Howard-Sheth model of buyer behaviour.

Organizational buyer behavior consists of three distinct aspects. The first aspect is the psychological world of the individuals involved in organizational buying decisions. The second aspect relates to the conditions which precipitate joint decisions among these individuals. The final aspect is the process of joint decision making with the inevitable conflict among the decision makers and its resolution by resorting to a variety of tactics.

### Literature Review

Vani, U., & Janani, P. (2016) focuses on potential industrial buyer's behaviour who are buying from readymade garment industries, mainly knitted garments in Tirupur of TamilNadu. Though

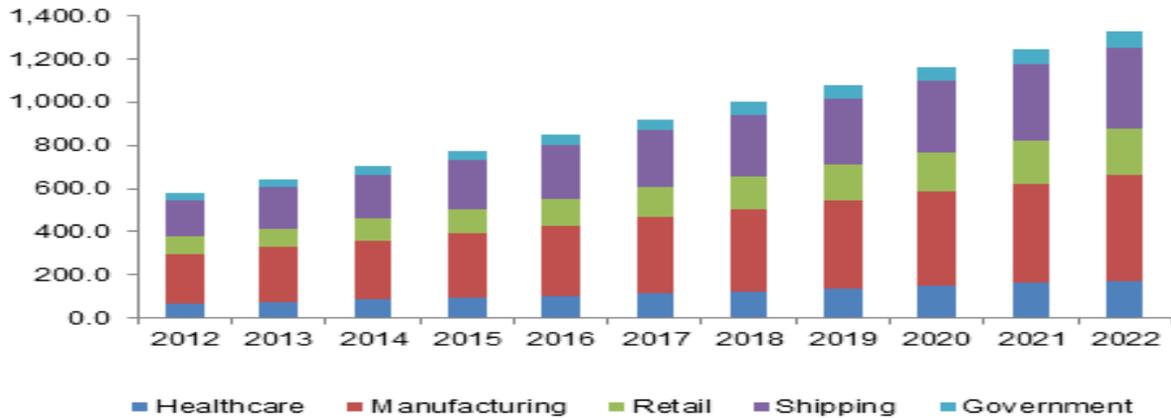
there are many domestic buyers in this trade, the study approaches the behavior of entirely overseas buyers. Industrial buyers are not the end users. The study includes the statement of problem, objective, Research methodology and limitation of buyer's behaviour. The data has been widely collected applying questionnaire method from 50 overseas buyers of few garment companies through several communications. The tools used in this analysis are Percentage testing method and Average rank analysis method. The study provides buyer's perception towards supplier and manufacturer of garment industries in Tirupur.

Mcgill, K. (2013) investigated how the attitudes which consumers have towards national brands and store brands in the food industry and how this influences their purchasing behaviour. Data collection includes three phases. The first phase is a quantitative approach consisting of a questionnaire distributed to 100 consumers. Phase two of the data collection included a focus group with eight consumers and the final phase consisted of one semi structured in depth interview with a grocery store brand manager. The findings from this study indicate that consumers do compare national and store brands whilst grocery shopping. The overall preference is for national branded products however the brand preference is dependent on the product category for example there is a high preference for national branded teas and coffees. Overall the consensus is that national brands benefit from brand equity and brand image. Their high levels of advertising, quality controls and good reputation allows for the high price that they charge but the overall consensus is that they are still overpriced and a lot of national brands and store brands are similar in quality except store brands charge a lower price. Price and promotions are a huge influencer when it comes to brand purchase decision other factors include packaging, the store, ingredients and brand loyalty. Findings also show that many consumers make purchases out of habit and that they have loyalty towards specific brands and stores. This research is limited to a sampling frame of 18 – 40 year olds. Therefore the findings and analysis from this study are limited to this age category.

Anita M. Kennedy, (1982) suggested over the past twenty years, attempts have been made to advance knowledge on industrial buying behaviour as the basis for marketing strategy decisions. In spite of the recent proliferation of research interests in this area, there remains limited information on questions such as the locus of buying responsibility and the nature of the buying process within potential customer organisations. A brief summary of industrial buying literature serves to exemplify this point.

### **Industry Overview**

A barcode printer is referred as a computer device that is used for printing barcode tags or labels that is attached or printed on the objects. They are usually used to print barcodes on products before shipment or to tag retail items. Barcode printers operate faster compared to other printers and they provide a longer service life. A Barcode printer uses one of the two technologies from direct thermal printer and thermal transfer printer.



**Figure 2: Barcode printers market size by application, 2012 - 2022 (USD Million)**

Direct thermal printer uses heat to cause chemical reaction in special design that turns the paper black. Thermal transfer printer also uses heat and that heat melts a resin or waxy substance that runs over the tag of the material. Barcode printers are used in different industries such as manufacturing, retail, commercial and others. They provide advantages of fast service with reliability and cost effectiveness, easy accessible, sharp print quality, high durability and scanability.

Barcode printer's market size is expected to be valued at over USD 4.5 billion by 2022, growing at around 8.6% from 2015 to 2022. Growth in organized retail sector coupled with increasing demand for thermal mobile or portable printers are the key factors driving the demand growth over the forecast period. Retail barcode printer's market share was valued at over USD 350 million in 2014 and is forecast to exceed USD 800 million by 2022. These devices are extensively used in applications such as price-tag printing, point-of-sale, product labeling, and shelf labeling. Several retail stores provide advanced options such as mobile checkout; these enable scanning, payment processing as well as printing of receipts with the help of portable scanners and printers.

The aforementioned factors are likely to fuel barcode printer's market size growth over the forecast period. Thermal mobile printers are employed in a considerable number of application areas since they are cheaper to maintain and easy to use. These printers are increasingly deployed by organizations in order to assist their workforce. Barcode wristbands find application in public events, since this modality prevents damage or loss of the ticket and helps the authorities identify spectators in case of an emergency. However, threat of substitute is expected to hinder the industry growth over the next seven years.

**Research Gap**

<b>Author Name</b>	<b>Source</b>	<b>Gap Identified</b>
<b>Newman Joseph W. and Richard, Staelin (2002)</b>	Joseph, W. Newman and Richard Staelin, "Pre-purchase Information Seeking for New Cars and Major Household Appliances", Journal of Marketing Research, Vol. 9, No. 3, August 2002, pp. 249 - 257.	Pre-Purchase Information Seeking and to know how much information seeking precedes purchase of consumer durables and what factors are related to the differences among buyers
<b>Bucklin Randolph E. and George, Silva Risso (2008)</b>	Randolph, E. Bucklin and Silva Risso George, "Distribution Intensity and New Car Choice", Journal of Marketing Research, Vol. 45, No. 4, August 2008, pp. 473-486.	Develop a new method to assess how changes in the intensity of mature distribution networks in the automotive industry will affect consumer choice. The study revealed that the buyers were more likely to select cars whose dealer networks had shorter distances to the closest outlet (accessibility), more dealers within a given radius from the buyer (concentration) and locations that skewed towards the buyer (spread).
<b>Aurangazeb (2007)</b>	Aurangazeb, "Impact of Colour on Consumer Buying Behaviour Among the Car Buyers in India", Indian Journal of Marketing, Vol. 27, No. 3, June 2007, pp. 12-22.	He concluded that occupation, age and gender influence car buying attitudes. The study uses the wheel of consumer analysis model to explain how cultural differences between states can affect the car buying decision.
<b>Xuan, Bai and Liu, Dongyan (2008)</b>	Bai, Xuan and Dongyan Liu, "Car Purchasing Behaviour in Beijing: An Empirical Investigation", Unpublised Thesis, 2008.	Consumers takes safety as the most important characteristic and take value for money as the second most important factor, and riding comfort as the third important factor.

**Statement of the problem**

The industrial buyer behaviour assumes distinctive phases which differ widely from individual buyer behaviour. That phase of industrial buying deserves in-depth attention for the reasons that there exists a close inter relationship among those phases and any deviation would cause severe disturbances in the entire supply chain. The industrial buyer assumes the role of both buyer as well as seller in the sense that he buys on behalf of the potential buyers whose needs are to be fulfilled through the end product manufactured. As such any mismatch in the purchases made by the industrial buyer would ultimately lead to rejection by the customers.

Further any amount of non-value added practices lengthen the order processing time and thereby result in ultimate consumer dissatisfaction. As such effective industrial buying becomes the prime basis for providing total customer satisfaction. With specific reference to barcode printers, the above issues deserves immediate attention in the light of the prevailing conditions in barcode printers such as declining trend of market performance, increasing expectations of

Industrial Buyer Behaviour Model: An Empirical Investigation on Implications of Customer customers etc. On this background industrial buying behaviour with specific reference the barcode printers has been identified as the problem for the study.

### Research Objectives

- To study the existing pattern, practices and strategies of industrial buying in barcode printers in relation to different buying situations
- To study the varying roles of buying influencers in buying decision process and their relative significance
- To study the problems associated with industrial buyers in the buying process
- To offer suggestions towards improving industrial purchase system for barcode printers

### Research Methodology

This study was designed to analyse the impact that industrial buyer behaviour for barcode printers. The focus was to develop a model for industrial buyer behaviour for barcode printers. A exploratory research approach was developed for the study. The studies will industrial buyer behaviour for barcode printers in Chennai district. The study analysed the relationship among industry products and industrial buyer behaviour for barcode printers.

### Pilot Study

The measurement model displays the value of normed Chi square 2.180, GFI as 0.86, AGFI as 0.82, CFI as 0.89 and RMSEA as 0.076. These results reveal that all the pre-requisites for the acceptance of the measurement model are well met. After establishing the individual item reliability of the model, the validity of the model is next tested. The results are presented in the below table.

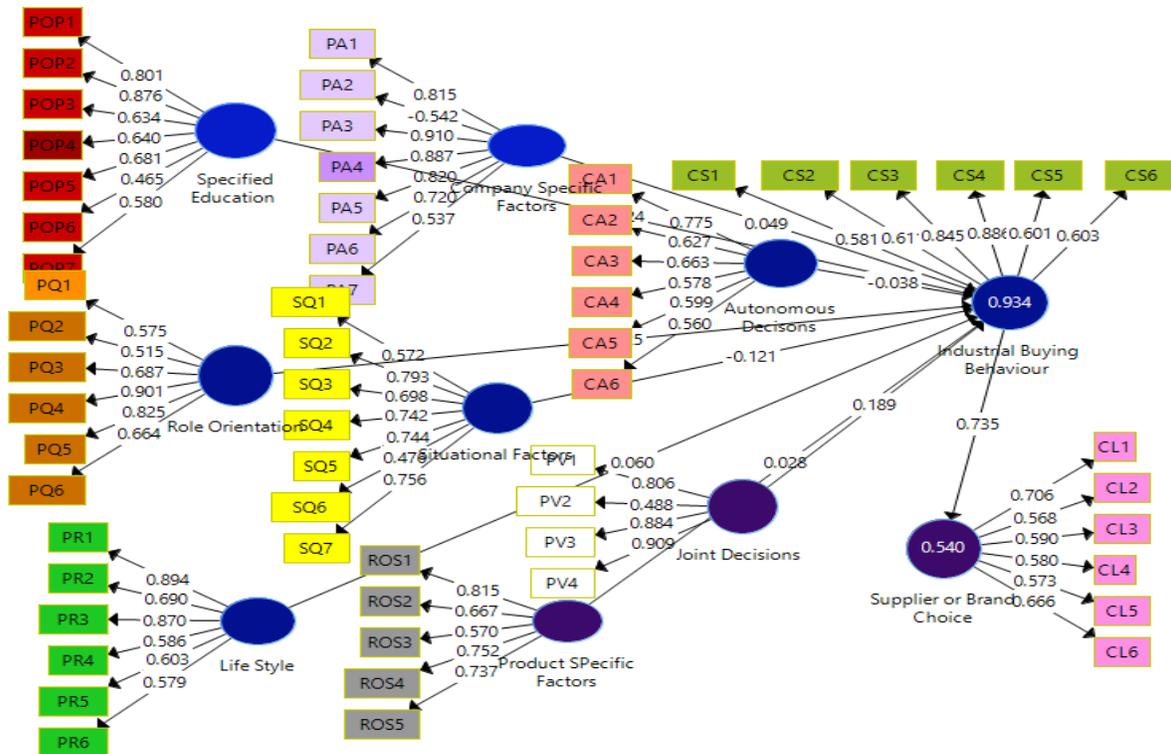
**Table 1: Results of Measurement Model**

Items	Results of Measurement Model				Result of Reliability Test	
	Standard Solutions	T - value	Error Variance	R <sup>2</sup>	Delta (Error)	AVE
Specified Education	0.412	7.47	0.105	0.1697	0.83025	0.51
Role Orientation	0.509	7.413	0.026	0.2590	0.74091	
Life Style	0.761	7.009	0.029	0.5791	0.420879	
Company Specific factor	0.631	7.291	0.052	0.3981	0.60183	
Situational Factor	0.758	7.018	0.035	0.5745	0.42543	
Product Specific factor	0.619	7.306	0.076	0.3831	0.61683	
Autonomous Decision	0.526	7.4	0.089	0.2766	0.72332	
Joint Decision	-0.252	7.523	0.073	0.0635	0.93649	
Industrial Buying Behaviour	-0.013	7.55	0.054	0.0001	0.99983	
Supplier or Brand Choice	-0.041	7.549	0.105	0.0016	0.99831	

The individual reliability of the items is evaluated using factor loadings, factor loadings above 0.5 is acceptance. In the above table all the factor loadings are above the recommended value it shows the statements are related to the constructs.

The internal consistency of all the items is ensured through construct reliability which evaluates the rigorousness with which the latent item is measured by the observable item.

**Figure 2: Partial Least Squares (PLS) on Industrial Buyer Behaviour for Barcode Printers**



The AVE value should not be less than 0.5 to ensure convergent validity of the model. Measurement Model for industrial buyer behaviour on barcode printers in Chennai district is shown in the above figure.

The construct reliability should be above 0.6 and the measurement model table portrays that the construct reliability value in respect of all the items exceeds the minimum requisite value. Hence, all the measurable items command the desirable construct reliability.

**Results and Discussions**

**Table 2: Barcode Printer Brands Purchased by Industry Buyers in Chennai District**

S.No	Barcode Printer Brands – Selected	Number of Respondents	Percentage
1	TSC	189	31.4
2	Zebra	109	18.1
3	Citizen	53	8.8
4	Datamax	100	16.6
5	Intermec	85	14.1
6	Printronix	51	8.5
7	Sato	15	2.5
<b>TOTAL</b>		<b>602</b>	<b>100</b>

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As it could be seen from the table 2 , 31.4% of the sample units buying TSC brand, 18.1% buying Zebra brand barcode printers, 8.8% having Citizen brand, 16.6% own Datamax, 14.1% buying Intermec barcode printers, 8.5 % having Printronix and 2.5% purchasing Sato brand. The table 1, it's inferred that TSC brand barcode printers were used by majority of the industry people in Chennai district.

**Table 3: Ranking for Industrial Buyer Behaviour for Barcode Printers**

Industrial Buyer Behaviour for Barcode Printers	Mean Square	Std. Dev.	Rank
Specified Education	3.65	0.730	5
Role Orientation	3.73	0.782	3
Life Style	3.69	0.710	4
Company Specific factor	3.74	1.050	2
Situational Factor	3.22	1.100	7
Product Specific factor	2.93	1.112	9
Autonomous Decision	3.90	1.015	1
Joint Decision	3.41	0.911	6
Industrial Buying Behaviour	3.02	0.963	8
Supplier or Brand Choice	2.83	0.911	10

The above Table 3 depicts that the highest rank achieved by the variable, Autonomous Decision (3.90) and the very lowest rank fetched by Supplier or Brand Choice (2.83). The second rank and third rank were fetched by Company Specific factor (3.74) and Role Orientation (3.73) respectively.

**Table 4: Profile Factors and Industrial Buyer Behaviour for Barcode Printers**

Demographic Profiles	Regression Co-efficient B	SE of B	t	Sig
Constant	2.816			
Types of Industry	0.021	0.017	1.401	0.151
Industry location	-0.002	0.018	-0.657	0.512
Monthly Turnover	-0.025	0.037	-0.617	0.533
Total no of Employees	0.016	0.018	0.876	0.388
Years of Running	-0.004	0.027	-0.066	0.955
Types of ownership	0.009	0.014	0.36	0.719
Weekly turnover	0.058	0.011	3.031*	0.009
Total		0.131	20.911*	0.000
<b>R<sup>2</sup></b>	<b>0.035</b>			
<b>F</b>	<b>2.136</b>			<b>0.0333</b>

It was observed from Table 4 that the profile Weekly turnover has predicted having the potentiality to significantly influence industrial buyer behaviour for barcode printers in the rate of 5.46%.

### Findings and Implications

- It is found that all the organizational factors irrespective of their size of business, form of business, type of business, number of employees, years of experience, annual turnover

and nature of computerization have given top priority to assured quality for selecting branded barcode printers.

- The manufacturers and dealers must arrange some special meetings with the customers and industrial buyer of barcode printers to create awareness regarding the special features and clearly explained that which is the most important feature and which feature used frequently and adequately and which feature is used in emergency time, these all factors should be discussed with the industrial buyer by the dealers practically.
- It is found that the organizational customers started realizing the importance of branded barcode printers. It is found that the organizational factors such as size and annual turnover in the business have significant influence in reasons for changing the brands.
- It is found that the vendors attitude in attending the complaints are slow irrespective of their size, form, type, number of employees, years of experience, annual turnover. But, it is found that the vendors attitude in attending complaints are slow in fully computerized business and fast in partly computerized business.

### **Conclusions**

Industrial and institutional markets are composed of organizations of many types. Yet, in developing marketing strategy, it should be realized that sales are not made to organizations: sales are made to individuals with in organizations. One key to analysing organizational behaviour is determining which individuals or individuals influence buying. The marketing of products or services, there is always a need for discriminating industrial consumers from individual consumers. It is for the simple reason that the ideas opinion and preference of individual consumers is totally different from that of industrial consumers. Of the individual consumers are sensitive or ego based in their purchase, industrial consumers are objective and policy based. This is more applicable even for purchase of barcode printers.

The industries which want to buy barcode printers will go for different process, most of them are rational, while arriving at purchase decision whether the barcode printers is branded or unbranded the industrial consumers will have their choice based on so many factors price, quality, after sale services and reliability. Hence, any product when it is not up to their expectations, the industrial buyers will not respond. Further, the services provided to them will also have an impact and therefore any attempt ensuring all those factors will definitely help the manufacturing companies to establish a market for their products not only individual consumers but also to industrial consumers whose behaviour is seldom unknown.

### **Limitations of the study**

- The findings of the study depend purely on the responses given by sample respondents.
- The process of collection of data was a real challenge as it consumed considerable time of the respondents as they have to refer to records for proper response.
- However adequate care has been exercised to collect unbiased data.

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