

Extended Value chain for customer's delight through Out-bound retail logistics

R.Seranmadevi, M.Venkatalakshmi

Abstract *The elegant customers expected enlightened logistics services from outbound logistics providers. Mere delivery to the customer will not contribute anything towards the company to develop a strong database which will enhance the company to have a strong customer loyalty. The satisfaction can be derived from proper execution of the delivery, the delight can be achieved only through proper positioning and improvised services delivery, by the ways and means of adding value or creating additional value to the customers to make them feel delightful is rest always with the logistics providers. There are enormous strategy and provisions are available for them to upgrade their level of operations. The present study is focusing the outbound logistics operations and its reach to retain the customers. The factors contributing to improve the efficiency and effectiveness with faster reach are studied and presented as model. This model again deliberating the benefits both monetary and non-monetary derived by the customer through the improved means of outbound logistics operations under technology era.*

Keywords: customer, delight, expectation, outbound logistics, retail, value chain

I. INTRODUCTION

A. Changing paradigm of customers' expectations

In recent days, Customer expectations are increasing momentarily, irrespective of individuals and businesses they expect to receive goods faster, more flexibly, and at low or even without delivery cost. The worldwide research about the changing scenario of customer's expectation towards retail industry was highlighted three important issues to discuss; they are busy life styles, changing life pattern and increased usage of technology. These three dimensions subject to vary based on different geographical location but again manifest their expectation and observing the latest trend emerged in the logistics is essential. It can be evident from the extended usage of technological gadgets; it is obvious that the winners will be the proactive and who understand the way to exploit a complete range of advent technologies, from data analytics to automation and platform solutions. Especially in logistics sector technology is changing every aspect of its operations.

The estimated performance of Indian e-commerce market was recorded at USD27.5 billion in 2016, and is expected to grow at a CAGR of 31 per cent to reach USD80 billion by 2020 as mentioned in the report prepared by the accounting and auditing company KPMG¹ (2015). As Alibaba² (2015) the world's largest retailing company, "The online travel segment comprises about 61 per cent of the e-commerce industry in India, including travel and e-ticketing websites.

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Ticketing accounts for the largest share of the online travel market, with domestic air ticketing driving growth". The rapidly changing environment in the techno based logistics sector need to evolve to provide a wide ranging portfolio of services to meet out the emerging needs of the business environment through extended reach and service coverage like last mile operations. The outbound logistics operations used by the e-commerce industry is evolved as the second largest fastest growing industry followed by financial services industry, by generating more employment opportunity and increased circulation of money.

The Indian retail market, which is the fifth largest retail destination globally, has been ranked as the most attractive emerging market for investment in the retail sector by AT Kearney's eighth annual Global Retail Development Index (GRDI), in 2009. The share of retail industry towards the India's GDP is sustainably increasing from 8 to 10 per cent in 2007 to 18 per cent at current and forecasted to grow up to 22 per cent by the 2020 financial year.

It is the need of the hour to the logistics industry especially in retail based outbound logistics companies to understand the customers' value as well and designed the services in accordance to their expectation and life style. The value added services like delivering the product based on their availability at home like morning or evening delivery, right product, right time to the right hand, storages and delivery, swipe card at the point of delivery, and so on. The increased expectation demands more from the logistics operations, and to make the customer delight they need to keep pace with the dynamic environment and demographics pattern of the customers in rural and urban areas. If the retailing company could not reach the customers of rural areas, in such a case they even can outsource their responsibility of delivery through 3PL or 4PL methods. Moreover to cater the needs of the customers spread across the geographical location, even out-reach, cross border delivery can effectively be performed through multi modal transportation and OMNI channel retailing. In a grasp, logistics service providers should be trendy, flexy, and tech savvy to fulfill the customers requirement with due diligence.

The definition of logistics was articulated by different philosopher in different dimensions, the well-known definition given by Christopher³ (1998) is, "the process of strategically managing the procurement, movement and storage of materials, parts and finished inventory (and the related information flows) through the organization and its marketing channels in such a way that current and future profitability are maximized through the cost effective fulfillment of orders". Here he focused on two material aspects the first is handling inventory and cost effectiveness, hence all the operations to cater the needs of emerging requirement of today's customer should not goes beyond the

¹KPMG in India analysis, based on industry observations and discussions, 2015

²Alibaba, Ant Financial invest about \$680 million in Paytm, up stake to 40%, The Economic Times, accessed 6 Nov, 2015

³Christopher, M (1997) Marketing Logistics, Butterworth-Heinemann, Oxford

tolerant limit of the logistics service providers.

II. REVIEW OF LITERATURE

Uday Singh Rajput⁴(2012) Retailing is the India's largest industry and one of the biggest requirements of the proper logistic service for its success. Retailing is the interface between the producer and the individual consumer buying for personal consumption. Consumer beliefs and needs have altered. Our willingness to wait to be satisfied or served has reduced and we expect instant product availability and gratification. It should be obvious from this that the supply or logistics system that gets products from production through retailing to consumption has also needed to be transformed. Physical distribution and materials management have been replaced by logistics management and a subsequent concern for the whole supply chain.

Dr. Alen Lewis⁵ (2001) have focused that most likely methods of further improvement to the delivery density appear be to deliveries to workplaces and to local stores or other collection points which would increase the proportion of daytime deliveries. The use of local shops in rural areas as collection/distribution point is most likely way in which widespread provision of ecommerce can be brought to rural areas in the near future.

ShwetaKakkar Sparks⁶ (1998) have described that the retail logistics and warehousing sector in specific has reached the turning point in its evolution and is now poised for a paradigm change. The improvements in vehicle design, engine efficiency, reusable handling systems and building standards have reduced the impacts; the distances products now have to travel have accentuated the problems. Environmental issues are thus one issue of future concern. It

Carter and Ellram⁷ (1998) discussed about reverse logistics is a process whereby companies can become more environmentally efficient through the recycling, reuse and reducing the amount of materials used. Viewed narrowly, it can be thought of as the reverse distribution of materials among channel members. A more holistic view of reverse logistics includes the reduction of materials in the forward system in such a way that fewer materials flow back, reuse of materials is possible, and recycling is facilitated. McKinnon, A C⁸ (2015) highlights that the modern logistics and supply systems are heavily dependent on the use of information technology. Logistics now is as much about information movement as it is about product movement. Anyone who believes that retail logistics is all about boxes and vehicles needs to rethink. Of course it remains true that products have to be distributed. Vehicles and boxes are still involved. But increasingly it is the control of data and information that remains the key to a successful logistics system

⁴Uday Singh Rajput (2012), "Retail Logistics: Changes and Challenges", pp.1-14

⁵Alan Lewis, (2001) Future models of Retail Logistics in an Age of E-commerce.

⁶Sparks, L (1998) The retail logistics transformation, Chapter 1 (pp 1–22) of Logistics and Retail Management, ed J Fernie and L Sparks, Kogan Page, London

⁷Carter, C R and Ellram, L M (1998) Reverse logistics: a review of the literature and framework for future investigation, Journal of Business Logistics, 19 (1), pp 85–102

⁸McKinnon, A C (2015) The development of retail logistics in the UK: a position paper, Technology Foresight: Retail and Distribution Panel, HeriotWatt University, Edinburgh

Matthew J. Liberatore and Tan Miller⁹ (2016) develops a taxonomy of manufacturing and service firms formed by their emphasis on different key performance metrics to monitor and manage the outbound logistics portion of the supply chain. The original data for this study were obtained from SAPs Benchmarking Program for Supply Chain Planning and utilizes performance metrics data from 247 manufacturing and service firms. Cluster analysis was used to develop a taxonomy based on the outbound logistics metrics. Four clusters were found to be distinct and well-formed and emphasize different sets of outbound logistics performance metrics. The clusters were named Inventory Investment Minimizers; Low Cost, Low Service Providers; Planners and Efficient Distribution Spenders; and Heavy Distribution Spenders. This study evaluated whether the emphasis on specific sets of outbound logistics performance metrics tends to be associated with firms in specific industries, and whether differences in firm financial performance, as measured by net operating margin, were found across clusters. This is the first effort to investigate whether taxonomy of firms can be developed based on the firms' use of different performance metrics to monitor and manage outbound logistics.

B. Importance of Outbound Logistics

Now India the second largest populated country with young and energetic tech-savvy customer base with increased standard of living, the retail industry in India also quite not possible to escape from that, they are also in need to provide the advanced and improved version of services to the customers through fastest delivery at low or nil cost, efficient and caring movement of goods-in-transit throughout the logistics operation from the packing to delivery to right hand.

The explosive growth of rural customer participation in order placing and cross border delivery sometimes nurtures the logistics operations necessarily to claim the next scale in efficiency with respect to quality and speed of operations. It is the Himalayan task for the Indian retailers to assure the delivery of products to the customers locating for away from reach, to give away the solution for this issue some large Indian logistics retailers enhance their own capabilities through nationwide agreement with numerous retail players in the same product line, Internet connectivity to deliberate the customers about the process and transit of their ordered article, strengthening their last mile delivery operations, credit facility like EMI options, and free insurance for the article till it delivered to the right hand and so on.

C. Statement of the problem

The advanced technology is a boom as well as ban for the Indian retail outbound logistics. Due increased usage of operations in the high tech mobile technology enhance the company to enjoy the extended coverage of customers, timely requisition, easy reach through map facility,

⁹Matthew J. Liberatore and Tan Miller (2016), "Outbound Logistics Performance and Profitability: Taxonomy of Manufacturing and Service Organizations", Business and Economics Journal, Vol7, No.2, pp. 1-9



displaying and demonstrating the products features, high as well as greater velocity of turnover, introducing new and novel ideas and trendy products at lowest cost but at the same time it was the great disadvantages for these companies to reach the customers in time, sometime they failed to fulfill the motto “the right product, to the right hand at the right time”. It is quite essential to satisfy the customers along way of logistics operations with improved value added services to retain them for long years and enjoying the sustainable customer loyalty and customer engagement.

D. Objectives of the study

Based on the problems underlined, the following are the statement of objectives are framed to proceed the study,

- To study the effectiveness of outbound retail logistics operations
- To evaluate the reach of outbound retail logistics operations
- To analyze the efficiency of outbound retail logistics operations
- To measure the benefits enjoyed by the customers due to outbound retail logistics operations

E. Research Methodology

The study is completely evolved around the outbound retail logistics performance and to measure the benefits of customers due to increased effectiveness, wider coverage and improved efficiency of the logistics performance. The population of the study is any customer making using of the retail outbound logistics services, so it is obviously infinite population set. So non-probability sampling method is employed, specifically area sampling technique is adopted to include the customer in the survey. A set of well-structured statements framed in the form of questionnaire was circulated among the customers and their opinion regarding the benefit derived by them due to efficiency, effectiveness and reach of the retail outbound logistics operations. a sample of 120 members have approached to collect the primary data and the same was coded and analyzed using the statistical package AMOS V.21. The secondary data required for the study is observed from the reliable sources like magazine, journals and published articles of research pioneers relevant to the field of study.

F. Need for the study

The increased usage of technology by huge volume of customer base compelled the retail logistics service providers to update their technological boundary to match with user requisite. It is accepted and honoured the upliftment of society towards the technological upgradation and greater use of technology to meet out their regular commitments. The trend is always moving upwards and progressed to the escalating level for achieving higher growth in the future in terms of turnover and profit and in turn the large customer base. This is the right time to consider, conceive the problems and design the issue for these services in the imminent operations.

G. Limitations of the study

The notion of the study is limited only to evaluate the benefits derived from the customers from the outbound logistics services. The data are collected from the customers who are interested and willing to share their opinion, so it is subject to sample bias. Moreover the data does not reflect

the entire customer base of the huge sum logistics service sector, so the findings derived from the analysis and the suggestions developed besides that are not fully compatible for all the other customers belongs to different geographical areas.

H. Model for benefits derived by customers from various outbound logistics services

The expectations of customers living in the recent digital era escalated to the high end which cannot be fulfilled by the outbound retail logistics services organizations. The direct issue connected to this supplying the right item to the right hand at the right time cannot be materialized even after taking immense pressure on the delivery process because of the geographical spread nature of the customers, so some companies even made an alternative arrangement like outsourcing to ensure he last mile delivery. The hidden issue connected to this is multiplication of expenditure due to technological upgradation and the trade-off between cost benefit also not matched to the level of expectations of both the end of logistics services. Besides all, achieving the customers delight and making them engaged with all our endurance are the great success of the logistics services companies.

To evaluate the level of monetary and non-monetary benefits derived by the customers out of the outbound retail logistics operations through effectiveness, reach and efficiency, a model is defined and created with AMOS V.21, explaining the interrelationship between various measures taken by logistics service providers to attract the customers and retain the customers and their effectiveness, reach and efficiency in operation to produce the maximized outcome in terms benefits to the ultimate customers. The measurement model was designed with as many as fifteen observed variables coding from OL1 to OL10 representing the Planograms, In-store Kiosks, Retail Information, Supply Chain Management, CRM, Retail Outlets Establishment – Owners Chain Store, Retail Outlets Agreement – Franchisee, Voluntary Chain, Conglomerate and Visual Merchandising and sixteen unobserved variables including fifteen error variables and one latent variable “outbound”, among the fifteen observed variables ten are input variables and it studied its effect on three moderate variables to reach the two outcome variables. The complete model was designed based on the structural equation modelling principle, and the confirmatory factor analysis is a base for including the defined set of endogenous and exogenous variables in to the study. The analysis was performed through maximum likelihood method and the modification indices are forwarding certain changes and the recommended changes are properly incorporated to derive the final model required for the study.

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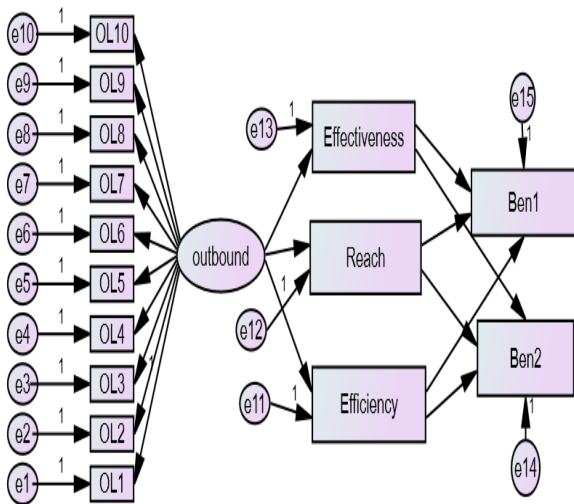


Figure 1 Measurement Model for Outbound retail Logistics

I. Structural model for benefits derived by customers from various outbound logistics services

The structural equation model for the customers' benefits derived from various outbound logistics services are depicted in the following diagram. Confirmatory factor analysis was employed to measure the interrelationship among the input range of variables and between input and out variables. The goodness-of-fit indices are evaluated for measuring the accuracy of the constructed model with the defined set of variables. Modification indices are recommending certain changes like removing the non-performing variables such as Retail Information, Voluntary Chain and Conglomerate. These variables neither individually nor aligned with other variable does not contribute to the analysis, thus these three variables are removed and the final model consists of seven variables such as Planograms, In-store Kiosks, Supply Chain Management, CRM, Owners Chain Store, Franchisee, and Visual Merchandising.

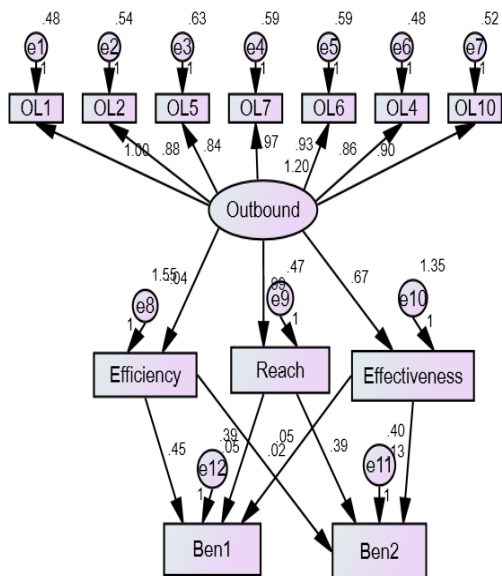


Figure 2 structural model showing unstandardized estimates

The above figure clearly explains the correlation exist among the input variables and the correlation between input to moderate and output variables studied. It was observed

that, all the variables included in the study are having highest positive correlation and the outcome variables also showing positive correlation with all the other variables included in the study. The regression coefficient value was depicted through the following figure 3.

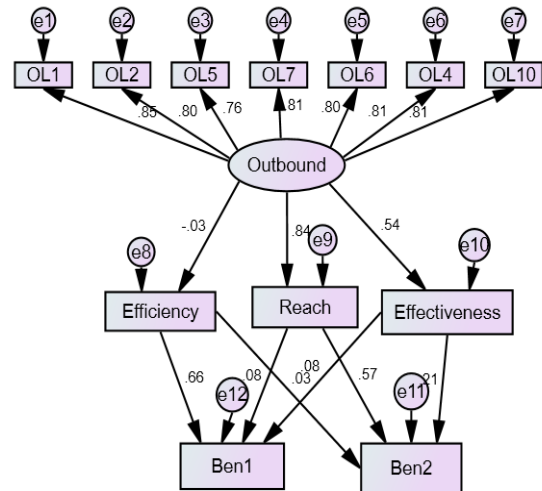


Figure 3 Structural Model showing standardized estimates

The result of confirmatory factor analysis, regression coefficient and the goodness of fit indices are calculated and presented in the following tables.

Table 1 Results of Confirmatory Factor Analysis

Model	CMIN	DF	P	CMIN/DF	GFI	AGFI	CFI	RMR	RMSEA
Default model	101.235	50	.000	2.025	.930	.891	.966	.025	.052

The results of confirmatory factor analysis revealed that this model is meeting the requirements of goodness of fit indices. The significant value ($p=.000$) indicates the model is significant statistically. As pointed out by Cesar Camiso'n and Ana Villar Lopez¹⁰ (2010), the individual reliability of the items was evaluated using its own factor loadings. Further, Carmines and Zeller¹¹ (1979) has underlined that the factor loadings should not be less than 0.7 to constitute a valid model. However, other researchers such as Barclay¹² et al., (1995) and Chin¹³ (1998) are forwarding their opinion about the factor loadings, to the extent of 0.5 or 0.6 is acceptable. From the research outcome of Hau, Wen, & Chen¹⁴ (2004) revealed that, the researcher selected goodness of fit indicators like χ^2 , GFI,

¹⁰ Cesar Camiso'n, Ana Villar (2009), "Capabilities and Propensity for cooperative internationalization", International marketing Review, Vol.26, No.2, pp. 124-150

¹¹ Edward G. Carmines and Richard A. Zeller (1979), "Reliability and validity Assessment", Sage Publications, 70 Pages

¹² Barclay, D., Higgins, C and Thompson, R (1995), "The partial least squares (PLS) approach to casual modeling: personal computer adoption and use as an illustration", Technology Studies, Vol.2, No.2, pp. 285-309

¹³ Chin, W.W. (1998), "The partial least squares approach to structural equation modeling", in Marcoulides, G.A. (Ed.), Modern Methods for Business Research, pp.285-358

¹⁴ Zhonglin Wen, Herbert W. Marsh and Kit-Tai Hau, "Structural Equation Models of latent Interactions: An Approach standardized solution and its scale-free properties", Structural Equation Modeling: A Multidisciplinary Journal, Vo. 17, No.1, pp.1-22

RMSEA to examine the degree of model fit. The chi-square value also very low indicating the high significance for the model, again it is not considered much because the chi square value can easily be influenced through the sample size. So the other goodness of fit indices are considered to be evaluating the model, some of them are GFI, AGFI and CFI, under all the cases the default value expected by the social scientists are >.9, but in this study both GFI and CFI reach the above standard limit and considered the model is attaining the good fit. The evaluation of RMR and RMSEA gives better understanding of the model, again the standard acceptable norms for RMR is below .02 and RMSEA is below .06. The constructed model meets out the requirements of both the error value estimation and provides the best fit status to the present model.

Table 2 Regression Coefficient of the model

Variables	Unstd Estimate	Std Estimate	S.E.	C.R.	P	Result
Efficiency ← Outbound	-.038	-.033	.083	-.453	.650	Insignificant
Reach ← Outbound	.989	.845	.066	15.094	***	Significant
Effectiveness ← Outbound	.672	.536	.084	8.030	***	Significant
OL1 ← Outbound	1.000	.846				
OL2 ← Outbound	.881	.796	.064	13.704	***	Significant
OL5 ← Outbound	.843	.758	.066	12.713	***	Significant
OL7 ← Outbound	.969	.809	.069	14.073	***	Significant
OL6 ← Outbound	.934	.801	.068	13.840	***	Significant
OL4 ← Outbound	.863	.807	.062	14.008	***	Significant
OL10 ← Outbound	.897	.808	.064	14.034	***	Significant
Ben1 ← Efficiency	.445	.658	.036	12.476	***	Significant
Ben1 ← Reach	.053	.081	.039	1.370	.171	Insignificant
Ben1 ← Effectiveness	.051	.083	.036	1.406	.160	Insignificant
Ben2 ← Efficiency	.021	.030	.036	.582	.561	Insignificant
Ben2 ← Reach	.386	.568	.039	9.830	***	Significant
Ben2 ← Effectiveness	.132	.207	.037	3.589	***	Significant

From the regression coefficient table it was observed that all the variables included in the model expressing high positive correlation except four variables and its subsequent relationship with the other variables, they are outbound to Efficiency, and Efficiency to non-monetary benefits to the customers and reach and effectiveness to monetary benefits to the customers. It further deliberates quite obviously that, the improved and well-structured outbound retail operations, do not contribute much on improving the efficiency of the outbound logistics operations, since they efficiency in operations can be obtained over a period of time through practice and perfect, again out of improved efficiency the customers are not getting any non-monetary benefit like offers and promotions and so on. The reach and effectiveness also not explaining and contributing much towards the monetary benefit of the customers, the customers are expecting monetary benefits no cost delivery, multiple delivery at short duration, express fast delivery, low cost compared with ordinary retail outlets and even credit facilities with zero per cent interest and long credit period and so on. With the results it was clear that, the

extended reach and effectiveness in outbound logistics operations does not contribute towards the attainment of monetary benefits to the customers at large.

The order of influence of the variables are observed from standardised estimate value, the highest influence factor among the outbound logistics variables is franchise arrangement with local retailers to ensure the last mile delivery operation and the way the product demonstrated and appealing rich visual effect in the presentation is stands at the second influence level followed by supply chain management. The customers are enjoying the non-monetary benefits out of increased efficiency and reach of the services to the nook and corner of the living areas. In a nutshell, it can be comprehended that, based on the present operating scenario of outbound logistics services are delivering high promising outcome with respect to non-monetary benefits, still they have to work a lot to design and offer certain kind of monetary based benefits to the customers to meet out their revolving requirement in the hectic market environment.

J. Practical Implications

As soon the technical revolutions imbibed by the general public as it is immense to improve the infrastructure facilities of the logistics organizations which are especially involved in the outbound logistics operations. The need of the customers are redesigned and emerged with respect to their latest life style and honouring the technological advancement made available at their palm. They are incensed against the non-compliance or poor execution of their solicit expectations. They are always demanding the organizations to equip themselves by reenergizing and reengineering their working platform and principles to honour the customers’ requirements with some add on value performance. The demand are ever growing as well the opportunity to widen the market also huge but the notable factor here is the cost efficiency. A highly populated country like India, having wide dispersion of people crowd all over the nation, the extended reach of technological advancement and the improved awareness level of the general public will compels the logistics service providers to upgrade their standard and uplift their skills with updated technological version adoption. Then, it is presumed viable to attract more customers and retain the existing customers in the long run.

K. Conclusion

The fundamental nature of logistics business operations are moved one step ahead from supplementary operations to main core business operations through valid services providers. It will enable the logistics providers to have a visionary plan to design their own futuristic business operations by developing their own customer database and ensuring customer engagement in their business. Further, it is inevitable to update the technology level in performing their operations to meet the tech savvy and trendy customers demand with express speed and quality delivery. “Creativity always sustain” keep this phrase as a success mantra, and to spin around the creative model and innovative technology will ever assist the logistics operations to reach the zenith.



L. Scope for further research

The emerging discipline of tech-enabled logistics operations highlighted few areas, where further research has to be happened to improve the logistics related operations in future, they are, procurement and inventory management with cost effectiveness, customer order sequential management, shipping and delivery management, returns, replenishment and shipping arrangements, customer support and reconciliation in logistics operations management.

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Dr.M.Venkatalakshmi holds doctorate in Management and specialized in Finance and Insurance Management. She is serving as an Assistant Professor in Sadar Vallabhbai Patel International School of Textiles and Management, Coimbatore over a decade of experience in teaching and research. She published research articles in national and international journals. She also edited a book with ISBN number titled "Emerging Trends in Textile, Apparel and Retail Management. A case study on Behavioral Finance was developed by her and taught among the students to inspire the students in the area of research. She is also an enlightened resource person for the skill development programmes and Management Development Programmes