



ASSESSING ONLINE E-MARKETING AND DISPOSAL VIS-À-VIS E-PROCUREMENT IN PUBLIC SECTOR ENTERPRISES (WITH RESPECT TO NLC LTD. & INDIAN RAILWAYS)

Abstract:-

Marketing function per se is undergoing a shift in managing transaction in a transparent e-marketing way (Kauffman et al, 2004) especially in Indian Public Sector Undertakings (PSU) – see Reynolds et al (2007). The assessment of e-marketing and disposal system of scrap and purchases in PSUs, namely NLC Ltd and Indian Railways, have been studied. The review of factors such as e-auction offers, time of auction, experience, security deposit (EMD), basic rate per unit, allotment of bid, acceptance of bid, payment and delivery of successful bids on select items in two PSUs over a period of three to five years have been presented. The study adds strength to the concept of e-marketing and e-procurement as well as to the theory of marketing. Assessing the e-marketing and e-procurement system covering e-auction/e-procurement offer, promotion, pricing, payment and delivery, transparency, wider participation, bid price, win/lose, time saving has been improvement in the e-marketing and e-procurement system has been focused in the study. It is understood that the e-marketing process is in vogue and therefore it is imperative to describe in comparison with e-procurement. Sample size of 100 each for both NLC and Indian Railways has been selected using simple random sampling method on cost basis depending on the distance of travel. Finally, the data collection spread in pilot as well as main study with field survey using questionnaire. The result of main study has been obtained with relevant statistical tool such as ANOVA, Cross Tabulation, Chi-square test, Correlation, Factor analysis and multiple Regressions. The results have been identified for both e-auction and e-procurement with a view to indicate, the similarity and dissimilarity existing among the factor proposed in the study.

Keywords:

e-marketing , Marketing function , e-procurement .



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1. INTRODUCTION :-

E-marketing and disposal system of sale has its own advantages. First and foremost, it is a convenient method of selling any product through internet based on online system, in which transparency and secrecy are ensured, apart from wider participation. Marketing function per se is undergoing a shift in managing transaction in a transparent way, especially in the public sector undertaking. In the traditional working auction system, the buyer and seller have the power to negotiate the price in a sale. However, the e-auction system of sale is a convenient method of selling any product through a net based online system, in which transparency and secrecy are ensured, apart from wider participation. E-marketing means using digital technologies to help sell goods or services. These technologies are a valuable complement to traditional marketing methods, whatever the size of company or business model. The basic of marketing remain the same in creating a strategy to deliver the right message to the right people. Further, e-marketing has special benefit such as global reach, lower cost, measurable results, 24-hours marketing, personalization, one-to-one marketing, interesting campaigns, better conversion rate, mass customization and increased revenue

1.1.a e-marketing and disposal in Neyveli Lignite Corporation Limited

There are three different types of e-auctions in NLC limited viz, e-auction for the disposal of scrap, e-booking for the sale of Coal/Lignite and e-auction for the sale of Raw Lignite. In the process of e-auction for the sale of Raw Lignite, the buyer and seller have the power to bid price in a sales and purchases. Materials sold through e-auction by NLC Ltd. are; scrap materials, raw lignite; ball clay; and dry fly ash.

Decisions regarding sales activities have been predetermined on the following parameters such as; setting sale target; setting financial Target; analyzing the sale opportunities and threats; selecting the target buyers with their capacity to consume the products regularly and their financial stability; determining the lot size of the product for each e-auction; finalizing the periodicity of sale; fixing of right reserve/floor price; decision on payment terms (cash/credit); decision on delivery period. 1.1.b Metal Scrap Trade Corporation of India [MSTC].

It is one of the public sector' undertakings that has developed the e-auction system software for conducting e-auction registration and participation. In this system, the auction is conducted on line through internet by the Auctioneer M/s. MSTC Ltd. through their e-commerce portal. (www.mstcecommerce.com). Both NLC and the bidders have to register on-line for participating in the e-auction, accepting auctioneer's general terms and conditions. MSTC Limited is a Mini Ratna Category-I of Public Sector Undertaking under the administrative control of the Ministry of Steel, Government of India. The company was set up in 9th September 1964 to act as a regulating authority for export of ferrous scrap with an investment of Rs 6 lakh. Government of India, Members of Steel Arc Furnace Association and members of ISSAI had made with the investment. MSTC became a subsidiary of SAIL in 1974. In 1982, it was delinked from SAIL and became an independent company under Ministry of Steel. It was a canalizing agency for import of ferrous scrap till 1992. Since its inception, MSTC has always made profits and has paid dividends to its shareholders. The shareholders' investment in the company was Rs. 1.10 Crore and by issuing bonus shares @1:1, the paid up capital was increased to Rs. 2.20 Crore in 1992-93. It has issued further Bonus Shares 3:1, raising the paid-up capital to Rs. 8.8 Crore. In 2011-12 the company declared dividend @ 1077%. It has emerged as a dominant B2B player in the area of trading with particular emphasis on Steel Industry. MSTC will Endeavors to organize and expand a market for the various commodities handled by it making the transactions as transparent as possible through extensive use of e-commerce.

1.1.c E-auction system and its procedure

Initially, e-auction terms and conditions are prepared and send to MSTC (Auctioneer). In the next stage, the Material List is prepared by the Disposal Wing indicating the lot number, location, description of materials, quantity, unit of sale, applicable taxes, etc. This list is sent to M/s. MSTC (Auctioneer). They host the same in the Website's Auction Catalogue. M/s. MSTC issues press advertisement in all leading newspapers covering the entire country as well as in their e-Auction Website, duly indicating the materials offered for disposal, inspection date, e-auction date, etc. The Guide Price Committee consisting of disposal and the accounts officials, inspects the lot and fixes the Guide Price (basic rate) for each lot and enter it in the Guide Price Book. The approval of the competent authority is obtained for the above fixed Guide Price,

before commencement of the e-auction. The approved Guide Price is entered in the system as confirmed or as Subject to Approval (STA) basis, before commencing the e-auction. This Guide Price page is opened only by Disposal Wing Unit Head using secret password and this Guide Price page is restricted by M/s. MSTC. After entering the Guide Price, if any change is to be made, it is done prior to commencement of e-auction. Once the e-auction is started, no change is allowed. Similarly, any change in the lot Number, locations, description of material, quantity, unit of sale, tax rates, etc. is conformed before commencement of the e-auction. Suitably, pre-bid EMD Clause/Caution Money Deposit is stipulated in the e-auction terms and conditions. In such case, the bidders have to send the Pre-Bid EMD to MSTC directly through DD, NEFT/RTGS one day prior to the commencement of the e-auction. On receipt of the above Pre-Bid EMD/Caution Money Deposit, MSTC activates those bidders for participation in the e-auction. Other bidders, who do not remit the Pre-Bid EMD/Caution Money Deposit, are not permitted to enter the e-auction floor. They are restricted to also view the e-auction process.

1.1.d. The Post e-auction steps

It is specified that H 1 Bid is compared with the Reserve/Guide Price by the system and if the H1 bid is more than the Guide price, it is automatically approved by system and Bid Sheet to be downloaded (In case of Scrap, Ball Clay etc.). If the H1 bid is less than the Guide price, then the option of accepting it lies with the seller. Automatic receipt of sale intimation letter by email to the bidder to submit the requisite payment within fixed time indicating bank details for RTGS/NEFT transfer is generated. Sale order is issued by MSTC after the receipt of EMD amount from the successful bidder indicating the last date for remittance of balance amount, penalty clause for belated balance payment remittance, last date of delivery of materials without ground rent and last date of delivery with ground rent. After the receipt of balance payment, delivery order is issued against the production of Photo ID card issued by MSTC, Letter of Authority (in case of lifting other than the person to whom the Photo ID is issued), Insurance. The buyers arrange their own transport and lift the material along with the delivery challan and invoices issued by NLC. In case of failure to lift the materials within the delivery period, even after the remittance of ground rent the left over materials belongs to the NLC and it disposes it at its discretion.

1.2. a. Indian Railways(Integral Coach Factory-ICF) e-procurement system

e-procurement is a system of convenient method of buying any product through internet based online system, which encourages wider participation. Procurement/tender function per se is undergoing a shift in managing transaction in a transparent way especially in the private manufacturing limited companies. The seller and buyers have power to negotiate price in a buy in the traditional working procurement system. e-procurement system of buying any product through a net based online system, in which transparency and secrecy are ensured, apart from wider participation. There are three different types of e-procurement in integral coach factory. E-procurement for the several items, e-booking for the metal item and e-procurement for the wood item. In the process of E-procurement for the purchase of many items, the use of information technology has made purchasing easier, cheaper, and more accountable through electronic procurement, at every level of the Transaction, but government agencies have slowed down to implement technology to improve the procurement process.

1.2.b. Benefit of IREPS (Indian Railways E-procurement system)

E-procurement has special benefits like double bid system, reverse auction, global tender, tender, transparency and fairness, efficiency, 24x7 availability, time saving & centralization of data. There were about 4.70 lack tender published, 2000 crores of scrap sold, 3000 railways user, 2000 vendors and 2000 bidders inter linked in the business operation.

The main achievement and feature of e-procurement was PKI (digital signature) based web application of Indian railway, 3-Tier central architecture based on Java (J2EE), uniform approach, minimized human errors, improved transparency, wider reach, reduction of procurement cycle, cost saving etc, ease of access to vendors allow them to put bids 24*7 from their places, and no physical threat to stop their participation, improved quality of offers and material mediators avoided, security tested by STQC seamless integration with SBI net banking were adding value to the system. Centre for Railways Information System [CRIS] has been developed by e-procurement system and is implemented in all Railway zones. In this e-procurement system, the auction is conducted on line through internet by the Auctioneer M/s.CRIS via their e-Commerce Portal (www.ireps.gov.in). Both ICF and the bidders have to register on-line for participating in the e-procurement, accepting Auctioneer's general terms and

conditions. Centre for Railway Information System (CRIS), has developed fully secure and completely user friendly application system which permits vendors to search, view, download tenders pertaining to Indian railways directly from CRIS's secure website. Vendors participate and submit online offers for the e-tenders directly from the website in a fair, secure and transparent manner maintaining complete confidentiality and security through tender downloading, bid submission and evaluation process.

1.2.c. e-procurement system and its procedure

The major two Division of ICF are (i) Shell Division and (ii) Furnishing division. On behalf of the president of India, the controller of stores, Integral Coach Factory, the purchaser invites electronic tenders for the supply as set forth in the notice inviting tender and "item details" page attached with each electronic tender "financial rate page screen". The instructions given are applicable for all tender electronic/otherwise, invited from office of controller of stores/shell division and office of the chief material manager/furnishing division.

The first step to participate in e-tender is to register with CRIS. Vendors desiring to submit offers register their name with CRIS through online using the link "new vendors" available in the home page of the website and obtain separate user ID, password and vendor code from CRIS for participation in e-tender. Authorized vendors' users to have an active e-mail account for submitting their log in registration request. Login registration to the website is available on free of charge basis. Their registration request, after due verification, is accepted and details of their separate account such as vendors ID, login ID, password etc. for the usage in the e-procurement portal is sent to them through e-mail. The vendors have to obtain a class III digital signature certificate with company name issued by controller of certifying authorities(CCA) licensed certificate is obtained in the name of person who is authorized by the company/vendor to submit electronic offer and authorized to sign (Name as Digital Signing as per I.T.ACT 2001). All the details of the digital certificate, as obtained from the certifying Agency(CA), showing the identity of the person who is authorized to sign and submit an electronic offer, gets auto attached along with the electronic offer and is verified by CRIS.

1.2.d. Post e-procurement steps

It is specified that L1 Bid is compared with the Reserve/Guide Price by the system and if the L1 bid is less than the Guide prices it is automatically approved by system and Bid Sheet to be downloaded. If the L1 bid is less than the Guide price, then the option of accepting it lies with the buyer. Automatically, receipt of buy intimation letter by email to the bidder to submit the requisite deliver within fixed month indicating advertising details. Received part of amount RTGS/NEFT transfer to particular concern will be generated by ICF. Purchases order is issued by successful concern after the receipt of EMD amount from the successful bidder indicating the last date for remittance of balance amount, penalty clause for belated balance payment remittance, last date of delivery of materials without penalty and last date of delivery with balance amount stopped. After the receipt of balance payment, delivery order is issued against the production of Photo ID card issued by ICF, Letter of Authority and Insurance. The buyers arrange their own transport and lift the material along with the delivery challan and invoices issued by ICF. In case of failure to lift the materials within the delivery period, even after the remittance of balance amount the left over materials belongs to the ICF and it drops at its discretion.

1.2.e. Criteria for splitting of tender quantity

The Purchaser reserves the right to distribute the procurable quantity on one or more of the eligible tenderers. Zone of consideration of such eligible tenderers is the right of the Purchaser. Whenever distribution / splitting of the tendered / procurable quantity is made, the quantity distribution depends upon the differential of rates quoted by the tenderers quoted delivery schedule vis-à-vis the delivery schedule incorporated in the tender enquiry in the manner detailed in the table below:

In cases of recommended splitting between three firms, where L-2 tender happens to be a part-II source, the standard percentage of distribution formula between three firms is not be applicable in such case and the following formula is applicable : (a) In cases where only 15% quantity is proposed on L2 Part II source (Three source)

(b) In cases where more than 15% quantity is proposed on L2 Part II source based on the performance of previous execution of higher quantity (Three sources)

Table-1. Criteria for splitting tender

Sl. No	Price differential between L1 and L2	Quantity distribution ratio between L1 and L2
1	Up to 3%	60 : 40
2	More than 3% and up to 5%	65 : 35
3	More than 5%	At least 65% on the L1 tenderer
Price differential between L1,L2 and L3		Quantity distribution ratio between L1, L2 & L3
1	Up to 3%	50:15:35
2	More than 3% and up to 5%	55:15:30
3	More than 5%	At least 55% on the L1 tender
Price differential between L1,L2 and L3		Quantity distribution ratio between L1, L2 & L3
1	Up to 3%	50:25*:25
2	More than 3% and up to 5%	55:25*:20
3	More than 5%	At least 55% on the L1 tender

* 25% or highest quantity supplied on previous orders whichever is lower. If L2 is eligible for >15% but <25%, the quantity to be ordered on L3 will vary accordingly.

2. REVIEW OF LITERATURE

e-marketing related studies

The study of e-marketing vis-à-vis e-procurement calls for various formats of research conducted across the world. It is essential to understand the contributions made over the years in the field of new format of marketing known as e-marketing that involves predominantly e-auction as the key tool for processing marketing transactions.

Robert J Kauffman and Charles A. Wood (2005) studied online e-bay auction using reserve price shilling bid and its effect on premium bid occurrence About 10260 e-bay auction during April 2001 involving 322 sellers 1583 bidders in to 919 auctions. Using valuation signal, 23% of auction have been categorized as premium bidding and using least square regression model, winners curse and online selling through reserve price shilling bid and a ratio between selling price and average have been reported.

Kristy E.Reynolds James H.Gilkeson, Ronald W. Niedrich (2009) studied seller strategy on winning price in online, seller minimum opening price and auction length. A hidden reserve price, number of bidder and moderators was analyzed to test a e- bay auction. It was reported that the effect of minimum opening price the potential buyer rely more on signal as opening and reserve price.

Chu-Fen Li (2010) studied the effect of the factor on internet auction variant and stresses about bidder's need to stay about reliability. Seller's characteristics could affect evaluation. Employees collect e-bay data set to analysis the effect of bidder and seller characteristics, seller items for sale (SIFS) bidders and Lifetime positive feedback (BLPF). It was indicated that Seller's lifetime positive feedback (SLPF) SLPF plays a major role in affecting the final price (51.2%) and both SLFS and BLPF were leaving critical roles. BLPF and SLPF also are important to affect the final price (4.5%). The duration of auction of the SLPF explain variation in seller performance on the duration of auction or final price.

Gillian Ku, Deepak Malhotra, and J.Keith Murnishan (2005) studied public art exhibit of 300 life size fiber class cows. The participants were 140 internets and live person auction the cow almost seven times their initial estimate. The final price provided impetus for model of decision making competitive arousal. The internet bidding for survey data 21 auctions throughout North America tested. The laborite's

experiment that investigate similar and difference between escalation & compressive arousal. The implication of these finding and on the broder use of compressive arousal and escalation and the impact decision making.

Matthias fuchs. Alexander eybl, wolfram hopken (2011) studied about low entry and exit barriers that emerged as a valuable distribution channel. It effectively augmented the distribution potential of whole business. It positively affected the final price level obtained in online auction.

Varol O Kayhan, James a McCart. Anofbhattache (2010) studied cross bidding in online auction and the action of bidder simultaneously monitor the advantage of price, outcomes of cross bidding behaviour and contingent. It is reported that there is significant price discount compared to non-cross bidders.

E-Procurement related studies

Clifford McCue and Alexandru V. Roman (2012) said that the public procurement play a significant role in promoting accountability and transparency. The purpose of the research is to measure the level of satisfaction with the current e-procurement system as well as to identify the possibilities for increasing the benefit associated with the e-procurement system. The instrument was designed to five major areas such as, status of e-procurement implementation, integration of e-procurement software with existing platforms, levels of usage, degree of satisfaction and strategic impacts.

William D. Presutti (2003) stated that supply chain management need to adopt the e-procurement strategies to influence the competitive advantage. The potential e-procurement holds for making the corporate strategy. In the electronic procurement, the proactive uses of internet, they improved the effectiveness and efficiency of the supply chain. It provided the unique opportunity for supply managers for two reasons. First, the technology boost competitiveness and profitability, second is the application of technology to supply management that spend in dollars. e-procurement was helpful to reduce the labor cost in purchasing process.

Sylvia Mercado Kierkegaard (2006) stated that information technology bring several changes in many ways, the e-procurement in business they can increase their efficiencies and maximize savings on purchases and internal purchasing process and it helped to make better use of resources and capital. The information technology is useful to make the purchasing process as easier, cheaper, and more accountable through electronic procurement at every level of transaction but government agencies act slow to implement technology to the improvement of the procurement process.

James Mauti Mose et al (2013) explained that e-procurement as a system for online purchasing. The study has focused on the e-procurement adoption in large scale. Descriptive method established the factors that influencing in the success of e-procurement. Kenya has adopted e-procurement with the following e-procurement practice i.e., online advertisement of tenders, receiving online submission of proposals for the tenders, and short listing suppliers online among others and the critical successful factors also identified.

Peter Trkman and Kevin McCormack (2010) has measured the risk and benefit of e-procurement. The benefits happed through e-procurement are, it's efficiency and integration provide contribution to firm performance. E-procurement leads to increase competitiveness in firms through cost reduction, as well as the reduction in transaction cost, order fulfillment, cycle time, number of suppliers or reduction in price paid and also the number of staff are support the purchase transaction. It was reported that decrease in cost and time of bid not happen simultaneously, organizational changes/ process improvement bring the greater savings to them with the implementation of simple technology.

2.3 Research Gap

There are more similarities and less differences observed between e-marketing vis-à-vis e-procurement, in terms of the system, procedure, terms and condition for the registration and participation. It is essential to take up a study. The outcomes of the system in the both e-operators set out different indicators. Keeping in view of the characteristics features of both systems, there is a research gap to relate the on-line system as one-on-one in marketing and procurement operations.

3. RESEARCH METHODOLOGY

It is understood that the process is in vogue and therefore it is imperative to use descriptive method of study. The study is aimed at covering all the methods of e-auction and e-tender to assess characteristics' features in all the objectives set for the purpose of study. Proportionate method of stratified random sample

is used identify the bidders and suppliers in the process of marketing through e-auction and procurement through e-tender. Initially, in the preliminary stage 22 numbers of sample bids for both buyers and suppliers were selected to understand the intricacies of the process. Based on the outcome of the preliminary study and the reported statistics 200 numbers of size of sample was decided with 100 each for e-marketing and for e-procurement. The essence of e-auction & e-tender performance are given for the purpose of confirming the scope for conducting research to measure its features with in two public sector undertakings.

3.1 Need for the study

It is evident that there are several factors emerge in the process of e-marketing and e-procurement very specifically in the process of e-auction and e-tender in order to encourage participation as well as pricing bids. The reserve price and guide price, seller's characteristics and final bid price are various determinants to understand the effect of e-auction and e-procurement system. It is also understood that the input in the form of information to the sellers and buyers and products have been considered to be essential aspects of competitive system in a transparent manner. Hence, researcher has attempted to study the unique characteristics feature of e-marketing vis-à-vis e-procurement with a view to identity similar and dissimilar functions.

3.2 Research Objective

The following are the objectives of the study to evaluate the effect of e-marketing and e-procurement system in a public sector organization. (refer Figure 1)

- 1.To evaluate e-marketing system on e-auction offering, e-auction notice, bidding, payment and delivery vis-à-vis e-procurement system on e-tender offering-tender notice, e-tender advertisement, bidding in public sector undertaking organization.
- 2.To assess e-marketing vis-à-vis e-procurement on its transparent process, wider participation, competitive bid price, bidder feeling of win/lose and time saving in public sector undertaking organization.

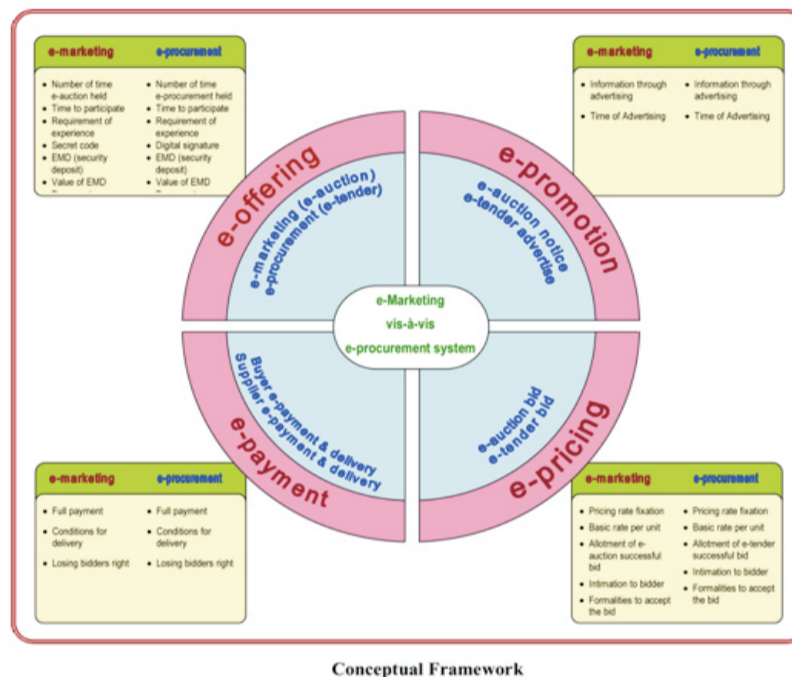


3.3 Research proposition

The proposed two proposition and conceptual framework is pre-tested (refer Figure 2)

P1: the e-marketing system on e-auction offering, e-auction notice, e-bidding, buyer's payment vis-à-vis e-procurement system on e-tender offering notice, e-tender advertisement, e-bidding are significantly influenced by nature of buyer's/suppliers, organization, experience and number of branches in public sector undertaking organization.

P2: the e-marketing system on e-auction offering, e-auction notice, e-bidding, buyer's payment vis-à-vis e-procurement system on e-tender offering, e-tender notice, e-tender advertisement, e-bidding, have positive relationship with transparent process, wider participation competitive bid price, bidder feeling win/ lose time saving among the buyer/suppliers of public sector undertaking organization.



Conceptual Framework

3.4 Research design

The study is proposed under descriptive design and it is imperative to use design of research for the similar process as a comparative assessment. The survey has been conducted for the buyers of Neyveli Lignite Corporation Ltd, and suppliers of Indian Railway's ICF (Integral Coach Factory). The study has been designed based on a e-marketing and e-procurement scale designed by researcher.

The independent variables identified for the study are nature of organization, experience of organization, number of branches, participation in e-auction, experience in e-marketing, and prior products e-marketed in NLC such as (raw lignite, ball clay, scraps) and material sourced by Indian Railways such as (metal, wood, and others) stockholders participation e-auction/e-procurement. The profile variables identified for the study are identity (name) of the employee, age, educational qualification, position/designation and name of the organization

The profile of the stakeholders (buyers and suppliers) has been studied on the nature of organization, experience in the on-line process and number of branches.

The Assessment criteria for e-marketing & e-procurement has been presented in the table 2.

Table-2. Assessment criteria for e-marketing & e-procurement

E-marketing	E-procurement
1. e-auction Offer [7 items] <ul style="list-style-type: none"> a. Number of times e-auctions held b. Time to participate c. Requirement of experience d. Secret code e. EMD [Security Deposit] f. Value of EMD g. Documents 	1.e-tender Offer [7 items] <ul style="list-style-type: none"> a. Number of times e-tender held b. Time to participate c. Requirement of experience d. Digital signature e. EMD [Security Deposit] f. Value of EMD g. Documents
2. Promotion [2 items] <ul style="list-style-type: none"> a. Information through advertising b. Time of advertising 	2. Promotion [2 items] <ul style="list-style-type: none"> a. Information through advertising b. Time of advertising
3. Pricing [5 items] <ul style="list-style-type: none"> a. Pricing rate fixation b. Basic rate per unit c. Allotment of e-auction successful bid d. Intimation to bidder e. Formalities to accept the bid 	3. Pricing [5 items] <ul style="list-style-type: none"> a. Pricing rate fixation b. Basic rate per unit c. Allotment of e-tender successful bid d. Intimation to bidder e. Formalities to accept the bid
4. Payment and Delivery [3 items] <ul style="list-style-type: none"> a. Full payment b. Conditions for delivery c. Losing bidder's right 	4. Payment and Delivery [3 items] <ul style="list-style-type: none"> a. Full payment b. Conditions for delivery c. Losing bidder's right

3.4.b. Key information required to fulfill the objective

There are five key variables of e- marketing, e-procurement and disposal, introduced for the purpose of study, namely transparency, participation, bid price, knowledge and time. The variable “transparency” is identified with e- marketing and e-procurement process in order to increase the extent of an biased approach in the public or specific process of marketing and procurement.

The variable “participation” is identified with the e-marketing and e-procurement process as a measure of the number of participation, participant details, approach in participation, process of the equality treatment among the bidders etc. The variable “bid price” is identified in the e- marketing and e-procurement process as a measure of the opportunities, supplementary information, addition information number of bidders, time, initial price, etc. The variable “bidder knowledge” identified is the e-marketing and e- procurement process as a measure of the knowledge about complete information and feedback analysis. The final variable “time saving “is identified in the e-marketing and e-procurement process of bid details, distance of bidders place from the place of auction and duration of participation in auction of e-marketing

Table-3. e- marketing assessment of measuring scale (Ramamoorthi J & Selvarasu A 2014).

Statement table with mean standard error and standard deviation of e-marketing and disposal system in NLC ltd.

Sl.No	e-Marketing	Mean		Std. Deviation
		Mean	Std. Error	Variance
e-auction tender notice				
1.	Opportunity	4.73	0.141	0.467
2.	Information	4.73	0.141	0.467
3.	Time	4.73	0.141	0.467
4.	Openness	4.64	0.157	0.505
5.	Experiences	4.64	0.152	0.674
6.	Security	4.55	0.157	0.522
7.	Confidential	4.55	0.182	0.522
8.	Best practice of Secret code	4.55	0.157	0.82
9.	EMD	4.45	0.203	0.522
10.	Document Need	4.45	0.203	0.688
11.	Number of Documents	4.45	0.207	0.688
e-Auction Advertisement				
12.	Print ad	4.45	0.203	0.934
13.	Online advertising	4.45	0.207	0.934
14.	Eligibility message	4.36	0.234	0.674
15.	Reach of Ad	4.36	0.237	0.674
Bidding				
16.	Interaction	4.36	0.234	0.809
17.	Delay in allotment	4.36	0.251	0.809
Payment and Delivery				
18.	Winner's payment	4.36	0.244	0.924
19.	Delivery	4.36	0.244	1.027
20.	Authorized offers intervention	4.36	0.247	1.027
21.	Auction committee response	4.36	0.237	1.286
Transparent in auction process				
22.	Transparency	4.27	0.273	0.786
23.	No intermediately	4.27	0.273	0.786
24.	Qualified Buyer	4.27	0.27	0.905
25.	Free from human intervention	4.27	0.282	0.905
26.	High Secrecy	4.27	0.273	1.009
Encouraging Participation in Tender				
27.	More Bidders	4.27	0.279	1.191
28.	More Buying Organisations	4.27	0.282	1.272
Improving the Bid Price				
29.	Easy online price	4.18	0.302	0.603
Bidder Win/Lose in e-Auction				
30.	Genuine bidding process	4.18	0.285	0.982
Time Saving				
31.	Less timing	4.18	0.296	0.982
32.	Speed	4.18	0.296	0.982
33.	Sufficient time	4.18	0.304	0.982
34.	Effectively on time	4.18	0.296	1.079
35.	Quick payment	4.18	0.302	1.079

Table-4. e-procurement assessment of measuring scale (Ramamoorthi J & Selvarasu A 2014).

Statement table with mean, standard deviation, standard error in Indian railways

S.No	e-Procurement	mean	Std. Error	Variance
e-tender Notice				
1.	1 Opportunity	4.18	0.122	0.405
2.	2 Information	4.36	0.152	0.505
3.	3 Time	4.09	0.163	0.539
4.	Satisfaction	4.09	0.163	0.539
5.	Openness	4.09	0.163	0.539
6.	Participation	4.09	0.163	0.539
7.	Digital Signature	4.18	0.182	0.603
8.	Secrecy	4.18	0.182	0.603
9.	Handling bid price	4.2727	0.19498	0.64667
10.	Digital Signature functioning	4.36	0.203	0.674
11.	Relationship	4.45	0.207	0.688
Tender advertisement				
12.	Print ad	4.09	0.211	0.701
13.	Online advertising	4.09	0.211	0.701
14.	Eligibility message	4.18	0.226	0.751
15.	Reach of Ad	4.18	0.226	0.751
Bidding				
16.	Interaction	4.18	0.226	0.751
Transparency in Tender Process				
17.	Human Intervention	4	0.234	0.775
18.	Secret	4	0.234	0.775
Encouraging Participation in tender				
19.	Participation of new organizations	4	0.234	0.775
Improving their Bid Price				
20.	Easy online price	4.27	0.237	0.786
21.	Price Evaluation	4.09	0.251	0.831
Bidder's Win/Lose				
22.	Successful Bids	4.18	0.263	0.874
Time Savings				
23.	Less Time	4	0.27	0.894
24.	Effectively on time	4	0.27	0.894
25.	Span of time	4.27	0.273	0.905
26.	Quick Payment	4.09	0.285	0.944

3.5 Main Study

The study is based on stratified random sampling method in the selection of buyer and supplier of e-marketing and e- procurement respectively. The simple random sampling method of statistical

probability sampling of “cost of travel” has been adhered in the next stage identifying sample respondents suppliers of Indian Railways and buyer of Neyveli lignite Corporation Ltd in Tamilnadu.

Sampling

In order to establish the sample size, probability stratified random sampling has been used. The total population of suppliers is 175, out of which a sample of 100 respondents has been chosen, using Schaeffer's formula. The population of buyers is 2662, out of which 100 were selected as sample size, using Schaeffer's formula. The whole population has been divided into strata's using Schaeffer formula, the procedure wherein, firstly stratification and then simple random sampling is known as stratified random sampling. The sample size is decided using the formula based on cost of sampling in stratum:

$$n_i = \frac{n \cdot N_i \sigma_i \sqrt{c_i}}{\frac{N_1 \sigma_1}{\sqrt{c_1}} + \frac{N_2 \sigma_2}{\sqrt{c_2}} + \dots + \frac{N_k \sigma_k}{\sqrt{c_k}}} \quad \text{for } i = 1, 2, \dots, k$$

Where the selected final statement based on mean value and standard deviation and standard of mean error. Based on the mean value of above 4.00 and standard error of mean which is below 0.285, 26 statement of main variable of Indian railways suppliers' side and mean value above 4.00 and standard error below 0.304, 35 statement of main statements variable for assessing Neyveli Lignite Corporation Ltd. buyers. The sample size of 200 has been used by researcher throughout the study.

Statistical Tools

The researcher has adopted relevant statistical tool for analyzing data. The tools used for analyzing the data set are ANOVA, cross tabulation, chi-square test, correlation, Factor analysis and multiple regressions.

Limitations of the Study

The present investigation, though carried out on scientific lines, suffers from the following limitations. The study is made for a specific period only and not continuously for periods. However the above limitations are no way affecting the validity of the longitudinal results of the study.

CONCLUSION

Assessing on line E-marketing and disposal vis-à-vis e-procurement system is a modern state of the art technique that uses e-auction and e-procurement system for the purpose of making buyers and sellers in a competitive market process in a transparent way and approach in a Public Sector Organizations. NLC Ltd and Indian Railways (ICF) is not an exception; it has acclaimed NLC Ltd, status of Navaratna in Indian business context and India Railways (ICF) is very Largest Purely Indian Government sector. The study describes various factors that are responsible for the success of the e-marketing and e-procurement system in the organization in three different formats for scrape material, Coal/Lignite and raw coal of NLC Ltd, and matel item wood item and all other item in Indian Railways (ICF). It is true that the organization has raised its sales, purchases and revenue with remarkable achievement. The study is aimed at adding value to the concept of e-marketing and disposal and e-procurement system using e-auction and e- tender as key tools. The study adds strength to the concept as well as theory of marketing.

ANNEXURE

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