

Testing the Moderating Effect on Product, Company and Situational Factors towards Buying Decision of Industrial Bar Code Printers and Accessories

Dr. Ankit Katrodia

North West University

School of Management Sciences, South Africa

Abstract

Exploratory research design was adopted for this research study. Materials and receivables mangers were chosen as samples for study. Snowball sampling method was adopted to derive 621 samples from the total population. A self-administered structured Questionnaire was used to collect primary data The Questionnaire was bifurcated based on factors involved in the theoretical research model such as product specific factors, company specific factors, situational factors, autonomous decisions, joint decisions and supplier or brand choice. The collected data was further analysed using appropriate statistical techniques and software to draw inferences for this research study.

Keywords: Industrial Buyer Behaviour, Electronic Barcode Accessories Market, Barcode Forecast and Opportunities, Product Portfolio and Market Intelligence.

1. Introduction

India is the second largest consumer market in the world. The Indian consumer profile has been developed and changed in terms of education, income, occupation, and reference group and media habits. There is a shift in consumer brand preference for durables products for the past decade with the influx of modern technology. The consumer buying preferences are rapidly changing and moving towards high-end technology products with acculturation. Products which were once considered luxury items have become a necessity because of the changing lifestyle and rising income levels. With growth in disposable incomes, the demand for high-end products such as television, washing machine, refrigerator, and air conditioners has increased considerably. It is also facilitated by the easy availability of finance and prevalence of nuclear families. Increasing in demand for consumer durable in the market the fall in prices as Indian consumers are continue to attach a high degree of importance to value for money. The consumer is brand-conscious, but not necessarily brand-loyal, and might even pick up a reliable private label if it offers good price and quality values (Sathya and Indirajith, 2018). In marketing process, there is a need to understand why customer or buyer purchases goods and services. Current literature associated with industrial buyer behaviour that has tended to focus on modelling and mapping the industrial buyer behaviour (Parkinson et al, 1986). Highlights some of the major conceptual and methodological issues involved in organisational buying behaviour. Aims to avoid pitfalls involved in the utilisation of research regarding specified issues at the same time stimulating research aimed at the resolution of these issues. Reviews the current status of organisational buying behaviour, follows this by identifying five

potential groups of users of information on organisational buying behaviour. Goes on to focus on the conceptual and methodological issues involved in organisational buying research. Suggests new research directions which, if implemented, could help advance the relevance and quality of organisational buying research. States that academic studies, directly concerned with a better understanding of organisational buying behaviour can be classified as falling into one of three areas the: buying centre (least studied area); organisational buying centre and process; or factors affecting the organisational buying centre and process. Purports that these three concepts can provide the basis for organising much of the diverse research efforts in organisational buying behaviour and goes on to illustrate findings from each of these areas and discusses them in depth (Wind and Thomas, 1980).

2. Motivation of the Study

According to recently released TechSci Research report, *“India Barcode Market Forecast and Opportunities, 2020”*, electronic barcode accessories market in India is forecast to register a CAGR of around 19% during 2015 – 2020. This robust growth in the country’s electronic barcode accessories market is expected to take place on account of expanding business of E-commerce companies coupled with increasing government focus on projects such as digitization of *Public Distribution System (PDS)* and using barcode technology for issuing ration cards and driving licenses. The usage of electronic barcode accessories market is growing across various sectors such as automotive, pharmaceutical and healthcare, E-commerce and retail, warehousing and logistics, etc. In recent years, processes related to modernization of assembly lines, and inventory management in warehouses have also catalysed the usage of electronic barcode accessories market. Zebra Technologies, Honeywell, SATO, and TVS Electronics are few of the leading players of India’s electronic barcode accessories market that operate through their respective distributor and dealer networks in the country. In 2014, the country’s northern and southern regions collectively accounted for a majority share of the electronic barcode accessories market, and this trend is expected to continue over next five years. Growing number of multinational logistics service providers is one of the major factors expected to significantly contribute to the growth of electronic barcode accessories market in India. *“The electronic barcode accessories market has witnessed some market consolidation over the last few years as the leading industry players have been increasing their focus on horizontal integration to achieve economies of scale and strengthen their product portfolio”*, said Mr. Karan Chechi, Research Director with TechSci Research, a research based global management consulting firm. *“India Barcode Forecast and Opportunities, 2020”*, has evaluated the future growth potential of India barcode market, and provides statistics and information on market structure, size, share and future growth of Indian electronic barcode accessories market. The report will suffice in providing the intending clients with cutting-edge market intelligence and help them in taking sound investment decisions. Besides, the report also identifies and analyses the emerging trends along with essential drivers and key challenges faced by the Indian electronic barcode accessories market.

3. Literature Review

As per Mostafa (2007), purchase conduct alludes to the utilization of items that are altruistic or advantageous to the climate, recyclable or conservable and delicate or receptive to biological concerns. Clem (2008) uncovers that becoming environmentally friendly mirrors a social awareness around saving and propelling the Earth's characteristic assets, safeguarding and securing them for human progress. Consumers are getting increasingly more mindful of natural issues and this has expanded the interest for environmental items. If consumers have a good mentality toward ing climate, they are more disposed to purchase items. The consistent attention to natural issues may thusly change consumers' mentalities and purchase aims too. Consumer purchase goal has been a significant idea in promoting writing. Past investigations have uncovered that consumer with goal to purchase items show higher real purchasing rates than those clients who exhibit that they have no aim of purchasing (Brown, 2003). Blackwell et al. (2001) additionally uphold this by demonstrating that purchase goals address what consumers figure they will purchase. Moreover, conduct towards a specific article is approximated by an expectation to play out that conduct (Malhotra and Mccort 2001). Accordingly, purchase expectation decidedly influences the likelihood of a client choice that he will purchase items. Ecological concerns assume a significant part on consumers' aim to purchase items. Hence, natural concerns are not by any means the only factor for the consumers to purchase harmless to the ecosystem items. There are different elements that lead to the purchases. consumers have been demonstrated to address a greater expense for harmless to the ecosystem items (Laroche et al, 2001; Peattie, 2001). An exorbitant cost of item is a pointer of natural execution, on the grounds that less contaminating items are all the more expensive to create (Mahenc, 2008). An investigation directed by D'Souza et al., (2006) opposite detailed that for the most part, view of items is contrarily connected with client's goal to purchase them on the off chance that they are of more exorbitant costs and inferior quality in contrast with customary items. Item's quality is likewise a concerned factor for most consumers. consumers by and large trust on these brand and are not prepared to settle on quality. As there is an assumption with respect to clients that all items offered ought to be ecologically protected without a need to forfeit quality, organizations should upgrade item quality just as spotlight on natural advantages of an item, and offer these angles with clients to accomplish the acknowledgment on the lookout (D'Souza et al, 2006). Thus, these uncover that conventional item attributes, for example, brand name, its cost and quality are as yet the main ones that consumers thought about when settling on buying choice (Gan et al, 2008). Different investigations have shown that numerous consumers are reluctant to swear off fundamental item benefits during their purchase choice. So hence, items should likewise perform seriously as indicated by natural perspectives, yet in addition based on other significant item attributes for example accommodation or solidness (Diamantopoulos et al, 2003). Consumers' decision for items can be intensely impacted by the bundling as well. Bundling credits can convince consumers to purchase the item. As indicated by Dantas et al., (2004), bundles and names have a couple of moments to have an effect

on the consumer’s psyche; during that time, it should get the consumer’s attention, and persuade the customer that it is the ideal alternative on the rack (Rowan, 2000). Johnsen (2018) uncovers efficient survey of modern purchaser conduct papers is directed, exhibiting that an enormous and developing number of buying and supply the executives audits have been distributed in mechanical purchaser conduct and that a huge extent of these depend on the modern purchaser conduct Interaction Approach as hypothetical viewpoint. Creator examines topics of buying and supplies the executive’s research and proposes three roads of future PSM research for modern advertising researchers: 1) guessing on the idea of supply organizations, 2) returning to the thought of overseeing supply organizations and 3) discussing set up “accepted procedures” in buying and supply the board. Sangroya and Nayak (2017) study builds up a multidimensional apparent worth scale to gauge existing levels of consumers’ apparent worth. The scale considers apparent incentive as a multidimensional second request build involving utilitarian worth, social worth, contingent worth and enthusiastic worth measurements. Such an endeavor has not been made before which features the creativity estimation of the current examination. McCabe (2015) investigates purchasing conduct for an inconsistently purchased capital gear item. The degree to which the noticed information fits a Negative Binomial Distribution of purchase occurrence is evaluated. The examination shows that recurrent purchasers represent a moderately little extent of purchases. Stenroos and Makkonen (2014) expects to give understanding on how the purchaser can prepare experience-based data spread around the business organization, by methods for client references, verbal exchange and notoriety, and how this encourages the purchasing cycle.

Table 1 - Distribution of Articles by Journals in the Period 2001-2018

S.No	Name of the Journal	Publisher Details	2001-2004	2004-2008	2008-2012	2012-2018	Total
1	Industrial Marketing Management	Elsevier Publishing	0	1	5	8	14
2	European Journal of Marketing	Emerald Publishing	2	3	4	2	11
3	Journal of the Academy of Marketing Science	Springer Publishing	3	3	5	2	13
4	Journal of Business Research	Science Direct	4	2	4	2	12
6	Harward Business Review		2	2	1	2	7
7	Marketing Theory	SAGE Publishing	1	2	1	1	5
8	Journal of Business-to-Business Marketing	Taylor & Francis	6	4	3	2	15
9	Journal of Management Studies	Wiley Publishing	2	3	2	4	11
10	International Journal of Technology Marketing	Inderscience	2	6	4	3	15

4. Research Gap Identified

Gap 1: Very little literature is available on industrial buyer behaviour in emerging barcode market in Indian context.

Gap 2: Industrial buyer behaviour in emerging barcode market is not fully explored and not much has been done in Indian context.

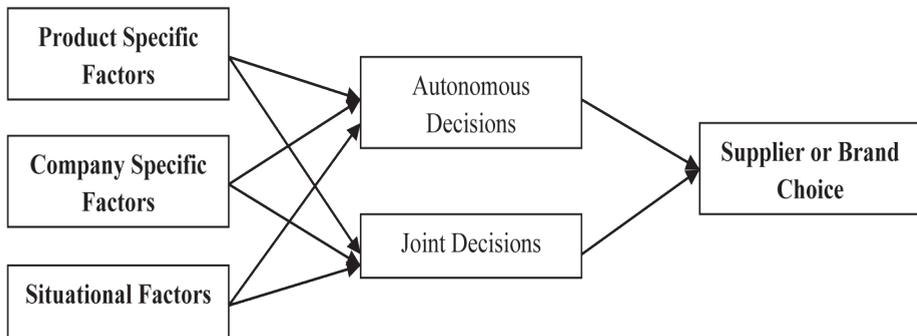
Gap 3: None of the researcher has concentrated the study with product specific factors, company specific factors, situational factors, autonomous decisions, joint decisions and supplier or brand choice factors on Indian electronic barcode accessories market

Gap 4: Represents variation between delivered service of barcode brands and what material and logistics managers were actually perceived about the service.

Gap 5: The past research gap was the difference between the industrial buyer expectations of the electronics barcode brands and the company's provision of the service and delivery.

5. Methods

The major aim of this research study is to analyse industrial buyer behaviour in emerging barcode market in Indian context. Exploratory research design was adopted for this research study. Materials and receivables mangers were chosen as samples for study. Snowball sampling method was adopted to derive 621 samples from the total population. A self-administered structured Questionnaire was used to collect primary data The Questionnaire was bifurcated based on factors involved in the theoretical research model such as product specific factors, company specific factors, situational factors, autonomous decisions, joint decisions and supplier or brand choice. The collected data was further analysed using appropriate statistical techniques and software to draw inferences for this research study.



6. Proposed Theoretical Model

6. Reliability and Validity

The reliability and validity score examines for the factors in industrial buyer behaviour in emerging barcode market (IBB). The confirmatory factor analysis (CFA) has been executed for this purpose. The overall reliability and validity of identified factors for industrial buyer behaviour in emerging barcode market (IBB) has been generated and analysed with the help of Cronbach alpha. The result of reliability and validity test has been presented in the table 2.

Table 2: Reliability and Validity Test

Factors	Cronbach Alpha	R ²	Delta	Composite Reliability (CR)	AVE
Product Specific Factors	0.711	0.61	0.53	0.741	0.69
Company Specific Factors	0.756	0.52	0.51	0.756	0.61
Situational Factors	0.752	0.56	0.56	0.715	0.56
Autonomous Decisions	0.741	0.68	0.57	0.751	0.65
Joint Decisions	0.822	0.81	0.62	0.759	0.71
Supplier Or Brand Choice	0.865	0.74	0.58	0.711	0.58

The measurement model displays the value of normed Chi square 11.536, GFI as 0.811, AGFI as 0.812, CFI as 0.871 and RMSEA as 0.074. 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 individual factor reliability of the items is evaluated using factor loadings and average variance extracted, factor loadings and Cronbach alpha above 0.5 is acceptance. Arrived AVE value is less than 0.5 to ensure and accept convergent validity of the proposed theoretical model.

Table 3: Data Examination and Preparation

Factors	Communnality	Normality		Homogeneity	
		Skewness	Kurtosis	Levene Statistic	Sig.
Product Specific Factors	0.621	-0.911	1.235	0.521	0.125
Company Specific Factors	0.521	-0.563	-1.251	0.562	0.256
Situational Factors	0.655	0.231	-1.241	0.632	0.325
Autonomous Decisions	0.788	0.568	1.002	0.625	0.075
Joint Decisions	0.912	-0.582	0.961	0.514	0.089
Supplier or Brand Choice	0.811	0.236	0.841	0.569	0.251

The data examination and preparation observed from the above table that the communality, normality and homogeneity value in respect of all the identified factors exceed the threshold level and hence all factors in industrial buyer behavior in emerging barcode market in the proposed research model. Since, the data available will be used for further research process and statistical techniques.

7. Results and Discussions

Table 4: Profile of Decision Maker on IBB

Profile of Decision Maker on IBB	Frequency	%
Materials Manager	370	60
Logistics Manager	251	40
Total	621	100.00

Table 4 shows the designation and profile of decision maker on IBB distribution of the sample. There are 370 respondents belongs to material manager and 251 respondents belongs to logistics manager. The percentages of the two groups are tabulated along with their percentage.

Table 5: Differentiation Analysis for Product Specific Factors (PEF) on Industrial Buyer Behavior in Emerging Barcode Market

Variables in PEF	Mean score among respondents in		‘t’
	Materials Manager	Logistics Manager	
Reputation	3.41	4.12	2.135**
Pricing	3.22	4.25	2.156
Product Size	3.56	3.25	2.012**
Brand	3.58	3.25	-2.365
Color and Model	3.20	3.10	-2.351**
Technological aspects	3.45	3.89	2.542**
Product Placement	2.15	3.51	2.510*

** Significant at 1% level * Significant at 5% level

Table 5 shows the decidedly significant variables in product specific factors (PEF) for materials manager, logistics manager are reputation (3.41, 4.12), product size (3.56, 3.25), colour and model (3.20, 3.10), technological aspects (3.45, 3.89) and product placement (2.15, 3.51) mean scores are respectively. The above five variables are highly significant difference among the materials manager and logistics manager by performing ‘t’ statistics are significant at five per cent level.

Table 6: Differentiation Analysis for Company Specific Factors (CSF) on Industrial Buyer Behavior in Emerging Barcode Market

Variables in CSF	Mean score		‘t’
	Materials Manager	Logistics Manager	
Social Relevance	3.25	4.25	2.362
Personal Importance	3.26	3.65	2.152**
Time saving	3.51	3.56	-1.236
Cost effectiveness	3.69	3.10	2.365
Reduction of ideal time	3.54	3.58	-2.545
Employee efficiency	3.56	3.26	2.685
Easy usage	3.54	2.16	2.368**

** Significant at 1% level * Significant at 5% level

Table 6 shows the decidedly significant variables in company specific factors (CSF) for materials manager, logistics manager are personal importance (3.26, 3.65) and

easy usage (3.54, 2.16) mean scores are respectively. The above two variables are highly significant difference among the materials manager and logistics manager by performing 't' statistics are significant at five per cent level.

Table 7: Differentiation Analysis for Situational Factors (SF) on Industrial Buyer Behavior in Emerging Barcode Market

Variables in SF	Mean score		't'
	Materials Manager	Logistics Manager	
Speedy actions	3.25	3.56	1.524**
Consumer awareness	3.65	2.35	-0.265
Consumer acceptance	3.21	4.58	0.356
Consumer satisfaction	3.25	4.65	2.589
Customer care support	3.69	3.54	1.025**
Service	3.65	3.58	2.510
Post purchase evaluation	3.25	3.54	-0.263

** Significant at 1% level * Significant at 5% level

Table 7 shows the decidedly significant variables in situational factors (SF) for materials manager, logistics manager are speedy actions (3.25, 3.56) and customer care support (3.69, 3.54) mean scores are respectively. The above two variables are highly significant difference among the materials manager and logistics manager by performing 't' statistics are significant at five per cent level.

Table 8: Differentiation Analysis for Autonomous Decisions (AD) on Industrial Buyer Behavior in Emerging Barcode Market

Variables in AD	Mean score		't'
	Materials Manager	Logistics Manager	
Product knowledge	2.45	3.56	2.536*
Individual buyer behavior	3.56	3.25	0.214
Personal satisfaction	2.56	3.54	-0.258*
Word of mouth	2.58	3.69	1.265
Brand loyalty	4.11	4.89	1.247**

** Significant at 1% level * Significant at 5% level

Table 8 shows the decidedly significant variables in autonomous decisions (AD) for materials manager, logistics manager are product knowledge (2.45, 3.56), personal satisfaction (2.56, 3.54) and brand loyalty (4.11, 4.89) mean scores are respectively. The above three variables are highly significant difference among the materials manager and logistics manager by performing 't' statistics are significant at five per cent level.

Table 9: Differentiation Analysis for Joint Decisions (JD) on Industrial Buyer Behavior in Emerging Barcode Market

Variables in JD	Mean score		‘t’
	Materials Manager	Logistics Manager	
Reference Group	3.25	3.56	2.514**
Competitors usage	3.26	3.21	2.256
Group satisfaction	3.25	3.65	-2.147
Joint acceptance level	3.21	3.69	2.140
Technology acceptance level	3.25	3.25	2.142
Cost estimation and efficiency	3.69	3.54	-2.415
Group dynamics on purchase behavior	3.56	2.69	2.569**

** Significant at 1% level * Significant at 5% level

Table 9 shows the decidedly significant variables in joint decisions (JD) for materials manager, logistics manager are reference group (3.25,3.56) and group dynamics on purchase behaviour (3.56,2.69) mean scores are respectively. The above two variables are highly significant difference among the materials manager and logistics manager by performing ‘t’ statistics are significant at five per cent level.

Table 10: Differentiation Analysis for Supplier or Brand Choice (SBC) on Industrial Buyer Behavior in Emerging Barcode Market

Variables in SBC	Mean score		‘t’
	Materials Manager	Logistics Manager	
Trust Building	3.52	3.52	2.515**
Purchase timing	3.63	4.25	1.235
Uniqueness	3.51	4.65	2.365**
Innovation	3.26	4.84	2.512
Group influence	3.26	3.11	2.256**
Purchase Rate	3.24	3.26	2.351
Brand Consideration	4.26	3.58	2.011*

** Significant at 1% level * Significant at 5% level

Table 10 shows the decidedly significant variables in supplier or brand choice (SBC) for materials manager, logistics manager are trust building (3.52, 3.52), uniqueness (3.51,4.65), group influence (3.26,3.11) and brand consideration (4.26,3.58) mean scores are respectively. The above four variables are highly significant difference among the materials manager and logistics manager by performing ‘t’ statistics are significant at five per cent level.

8. Implications

- Designation and profile of decision maker on IBB distribution of the sample, there are 370 respondents belongs to material manager and 251 respondents belongs to logistics manager
- It was observed by the researcher the following variables are highly important for dimensions on product specific factors namely reputation, product size, colour and model, technological aspects and product placement.
- The following variables are highly important for dimensions on company specific factors namely personal importance and easy usage.
- It was observed from the study the following variables are highly important for dimensions on situational factors namely speedy actions and customer care support.
- Major variables are highly important for dimensions on autonomous decisions namely product knowledge, personal satisfaction and brand loyalty.
- It was observed by the researcher the following variables are highly important for dimensions on joint decisions namely reference group and group dynamics on purchase behaviour.
- The following variables are highly important for dimensions on supplier or brand choice namely trust building, uniqueness, group influence and brand consideration.

Conclusions

The conclusions that can be identified or drawn from this exploratory research are that there are differences when the buying organization is deals with an electronic barcode accessories product with a non fundamental product and a fundamental product. Not only does the industrial buying behavior within the electronic barcode market but also depending on factors influencing the autonomous and joint decision center become high, moderate or less prominent. When reviewing the industrial buyer behavior framework the only supplier or brand choice that shows variance is the brand loyalty. The proposed model itself is the similar but within the constructs or moderator differences arises.

To conclude, differences in the industrial buying behavior on emerging barcode market has been analyzed, identified and investigated. From this researcher identified that when organization face a fundamental product the main constructs and factors that affect their industrial buying behavior were reputation, product size, colour and model, technological aspects, product placement, personal importance, easy usage, speedy actions, customer care support, product knowledge, personal satisfaction, brand loyalty, reference group, group dynamics on purchase behavior, trust building, uniqueness, group influence and brand consideration. The proposed research model for industrial buying behavior on emerging barcode market is highly accepted and validated in anyway, but instead the variables within the proposed research model are valued differently, as explained and derived earlier literatures.

References

- Aarikka-Stenroos, L., & Sakari Makkonen, H. (2014). Industrial buyers' use of references, word-of-mouth and reputation in complex buying situation. *Journal of Business & Industrial Marketing*, 29(4), 344-352.
- Blackwell R D, Miniard R D and Engel P W (2001), *Consumer Behavior*, New York, Harcourt College Publishers.
- Brown M (2003), "Buying or Browsing? An Exploration of Shopping Orientations and Online Purchase Intention", *European Journal of Marketing*, Vol. 37, Nos. 11/12, pp. 1666-1684.
- Clem W (2008), "5 Things you need to know about going Green", Downloaded from <http://www.greencar.com/articles/5-things-needgoing-green.php> on 18/10/2013.
- D'Souza C, Taghian M and Khosla R (2007), "Examination of Environmental Beliefs and its Impact on the Influence of Price, Quality and Demographic Characteristics with respect to Green Purchase Intention", *Journal of Targeting, Measurement and Analysis for Marketing*, Vol. 15, No. 2, pp. 69-78.
- Diamantopoulos A, Schlegelmilch B B, Sinkovics R R and Bohlen G M (2003), "Can Socio-Demographics Still Play a Role in Profiling Green Consumers? A Review of the Evidence and an Empirical Investigation", *Journal of Business Research*, Vol. 56, No. 2, pp. 465-80.
- Gan C, Wee H Y, Ozanne L and Kao T H (2008), "Consumers' Purchasing Behavior towards Green Products in New Zealand", *Innovative Marketing*, Vol. 4, No. 1, pp. 93- 102.
- Johnsen, T. E. (2018). Purchasing and supply management in an industrial marketing perspective. *Industrial Marketing Management*.
- Laroche M, Bergeron J and Barbaro-Forleo G (2001), "Targeting Consumers who are willing to pay more for Environmentally Friendly Products", *Journal of Consumer Marketing*, Vol. 18, No. 6, pp. 503-520.
- Mahenc P (2008), "Signalling the Environmental Performance of Polluting Products to Green Consumers", *International Journal of Industrial Organization*, Vol. 26, pp. 59-68.
- Malhotra N K and McCort J D (2001), "A Cross-Cultural Comparison of Behavioral Intention Models: Theoretical Consideration and an Empirical Investigation", *International Marketing Review*, Vol. 18, No. 3, pp. 235- 269.
- McCabe, J. D. J. (2015). Capital Equipment Purchasing: A Stochastic Model of Industrial Buying Behaviour. In *Revolution in Marketing: Market Driving Changes* (pp. 155-159). Springer, Cham.
- Mostafa M M (2007), "A Hierarchical Analysis of the Green Consciousness of the Egyptian Consumer", *Psychology and Marketing*, Vol. 24, No. 5, pp. 445-473.
- Parkinson, S. T., Baker, M. J., & Moller, K. (1986). *Organizational buying behaviour: purchasing and marketing management implications*. London: Macmillan.
- Peattie K (2001), "Golden Goose or Wild Goose? The Hunt for the Green Consumer", *Business Strategy and the Environment*, Vol. 10, No. 4, pp. 187-199.
- Rowan C (2000), "Packaging by Design", *Food Engineering International*, Vol. 2, pp. 19-25.
- Sangroya, D., & Nayak, J. K. (2017). Factors influencing buying behaviour of green energy consumer. *Journal of cleaner production*, 151, 393-405.
- Wind, Y. P., & Thomas, R. J. (1980). Conceptual and methodological issues in organisational buying behaviour. *European Journal of Marketing*, 14(5/6), 239-263.