DOI: 10.2478/ejes-2018-0048

An Empirical Analysis of Customer Experience in E-Business Supply Chain

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Abstract

From being a buzzword, E-business has become a norm in today's globalized economy. The advent of computers and mobile phones have acted as effective enablers in information sharing and improving efficiencies while allowing companies to cut costs. (Brown, 2004) defines e-business as "*the use of inter-organisational electronic networks to transact, process and collaborate in business markets – it incorporates e-commerce*". Today, success of an e-business fundamentally relies on effective e-commerce implementation (Chiu, 2014). While the strong growth of e-business is a welcome sign, this growth along with almost infinite propositions that are under offer for customers also brings along with it undue pressure on supporting logistics functions (Agatz, Fleischmann, & Van Nunen, 2008), (Auramo, 2002). This has led the e-business supply chains to shift their focus from cost efficiencies and to embrace responsiveness.

Keywords: empirical, analysis, customer, experience, e-business, supply, chain

Introduction

Although in a conventional sense, responsiveness is a term which indicates the agility of an e-business to accommodate and successfully fulfil customer orders on-time, the ambit of definition today includes agility of multiple e-tail channels of fulfilment and related logistics support functions (Muffatto, 2004). For instance, Brand-fulfilled and Seller-fulfilled, Cash-on-Delivery, Order Cancellations, Tracking facilities, Convenient return policies have all been introduced by the e-businesses in the recent years as a response to the customer requirements. This agility calls for a responsive supply chain at the backbone of the e-business with all the information networks with real-time inventory status, demand schedules and shipment schedules in place that can both fulfil orders and replenish inventory in a seamless fashion (Agatz, Fleischmann, & Van Nunen, 2008).

Also, the dynamics of the e-business supply chain would be different for alternate channels. For example, Brand-fulfilled items like FMCG goods may be served from the warehouse of the e-business whereas the seller-fulfilled items like electronics would be directly served by the seller to the customer. But the needs of the customer and satisfaction of the customer could be different for these two channels. Therefore, it is important to look at the customer perceptions towards the physical, information and financial flows through these emerging multiple channels of fulfilment in e-businesses to throw light on the needs of different channels of distribution. This paper attempts to address this research question.

The paper is organized as follows: Section 2 covers related literature and impact of e-business on logistics support functions, Section 3 provides conceptual model, Section 4 descriptive analysis of the model, Section 5 research questions, Section 6 hypotheses and its testing, Section 7 predictors of satisfaction level, Section 8 Discussion and scope for further research.

Impact of E-business on Logistics Support functions

Proliferation of internet technologies and advancement in telecommunications helped for business advancement and connected various processes across globe through virtual space. This gave quick adopters to develop new products and services that can widen opportunities of growth and reach out larger market. Furthermore, adoption in financial services and payment gateway enabled firms to transact in many ways like business to business and business to customers. Such advancement galloped new opportunities, improved valuations and enabled better business processes and models. Customers became fulcrum for new e-business as they saw value creation and reduction in cost and improvement in service levels.

Globally, countries have embraced and adopted the concept of e-business in varying degrees of diffusion (Kshetri, 2007). Ability to seamlessly link processes for physical flow, information flow and financial flow helped for evolution of supply chain. Service providers and people capability reached new levels of growth in certain markets. While pioneers like US and China are early adopters, countries like India have been late entrants to the market. This is evident from the fact that the revenue from e-businesses account for about 20BN USD by India as compared to over 150 BN USD for both US and China (PWC). Previous research also points out to fact that e-commerce adoption in India is low ((Sharma & Gupta, 2003).

The difference in the penetration rates of the e-businesses in the countries could be due to a multitude of factors: technology infrastructure, telecommunications infrastructure, efficiency (Lawrence, 2010) and Logistics infrastructure (Matopoulos, Vlachopoulou, & Manthou, 2007). Technology infrastructure was more to do with adoption of internet technologies and the financial platforms enabling e-business transactions. Service companies can build technology in operations of distribution centres and other support systems which also facilitates growth of e-business.

The next area which is discussed in literature as important aspect is that of telecommunications infrastructure. A communications network is a collection of transmitters, receivers, and communications channels that send messages to one another. Such an infrastructure describes availability of bandwidth, regulatory guidelines and service providers who help to connect devices through signals.

In a country like India which is still developing and heterogeneous in terms of multiple stakeholders, such infrastructure may follow a slow progression. Further, priorities like setting up telephone connections across the country becomes critical even before pushing public policy for adoption for e-business. One may also note Indian economy and social system faced an unprecedented challenges in spectrum allotment (Sukhtankar, 2015) and this possibly delayed advancement of the telecommunications industry and those derived based on its growth which include e-business.

Another factor which is discussed in literature is that of efficiency in e-business process maturity for enabling e-business operations. This factor is largely related to people capability in support functions like logistics and third party supply chain service providers, financial transaction gateway and user industry capability and efficiency in order processing, delivery and configuration of new products and services. For instance, one of the earlier works (Matopoulos, Vlachopoulou, & Manthou, 2007) argues that logistics processes is one of the most important areas to focus in order to understand impact of e-business and also is an area which is least understood. It may be useful here to note that e-business order management require handling of nodes namely distribution centres (DC), inventory, effective inbound transportation to DCs and outbound transportation to customers and efficient management of supply network design for optimizing cost of service for any desired service level. Thus, logistical features play a significant role.

With respect to the logistics infrastructure, India still remains at the weak end of the spectrum, with a major part of logistics infrastructure focusing on the metro cities while the rural areas which account for more than 90% of the population have poor infrastructure. However, this situation is starting to change. India's leading e-businesses have started to expand their base organically by setting up regional warehouses which can be used for brand fulfilment (PWC). They are also tying up with local third party sellers who directly serve the customers from their location. This trend is sustainable only if this organic growth is augmented by strong distribution channels in order to ensure proper service level.

The efficiency of the distribution channels can be gauged from understanding the customer perceptions towards each of the physical, information and financial flows happening in the e-business supply chain. This is mainly because ultimately customer perception of such logistical support is what determines success and growth of e-business. Hence, in this study, we focus on these aspects.

In order to understand the customer perceptions, we conducted a survey among 284 respondents who have transacted through e-business were selected. The sample size was determined by the fact the respondents must be large and widely

spread. They should have done at least one routine purchase and one non-routine purchase. Routine purchases are those which are repetitive in nature and is more like a consumable product or service which is purely transactional in nature. This could be buying of grocery or buying of an insurance product for vehicle or health and so on. Consumer need not necessarily perceive high risk and must be familiar of repetitive nature of buying. He would not be dependent for a large during the sale or post sale support for the product or service. On the other hand, non-routine purchases can include buying of an asset or a durable whose use can spread across years like that of an LED television, refrigerator or an air-conditioner and so on. Consumer validates a number of parameters like user feedback, understanding of product specification, post-sale service or a financial or credit support tie up and so on. When we examine the sample, effectively we have a representative group having a minimum of 284 multiplied by an average of more than four transactions. Thus, the sample brigs out a large size experience and would be useful for inference.

First, the questionnaire was spread electronically and respondents were contacted and explained of the context of the study. Second, every response was checked for quality and replaced if required by a suitable sample representative. Third, respondents were from different groups by way of geographic location, employment, educational background and salary levels to have a comprehensive understanding of the problem.

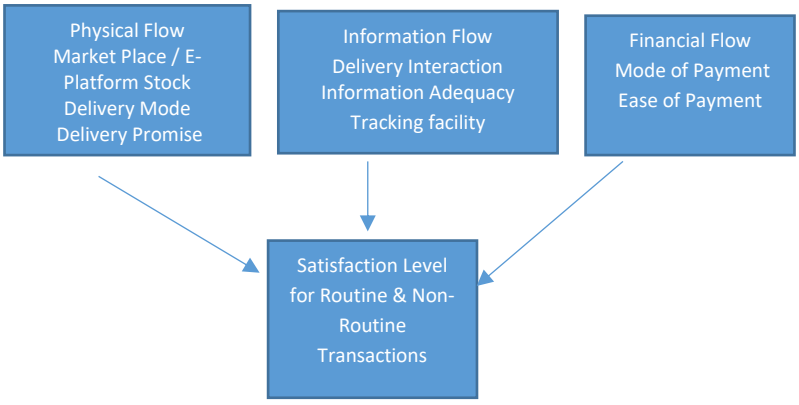
Conceptual Model

Our conceptual model of the customer experience is based on the structural and other aspects of the e-business supply chain which may be manifested in different ways of interaction with the customer. As mentioned earlier, channels of fulfilment is a fundamental characteristic of the e-business supply chain. Drawing upon this idea, we include aspects of physical flow namely delivery mode and promise of delivery.

Information flow is a natural medium in e-business supply chain. Adequate information for customer, interaction of e-business with the customer, delivery tracking are all important aspects. In this study, we capture this.

Financial flow overarches the other flows at least in Indian context. The choice of mode of payment include such things as cash on delivery which is a contemporary phenomenon. Also, ease of payment methods is an equally responsible one. Our study includes this aspect as well (Fig. 1).

Figure 1 Three supply network flows leading to customer satisfaction



Further, the study also focuses on one of the key aspects in e-business where e-platform may provide its own stock or product as a private label or it can direct the brand owner to deliver and the platform merely facilitates the transaction. This is going have serious consequences on future of e-business as these platforms increasingly are taking inventory of brand owners and also introducing their own private label.

Possible physical flows are depicted in Fig 2 and 3. When customers become conscious about the same it may have repercussions in business.

Fig 2 Brand Fulfillment Model

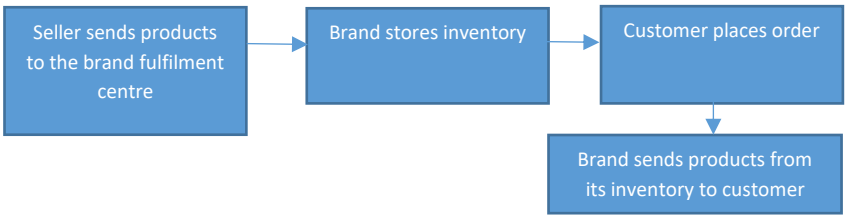


Fig 3 Seller Fulfillment Model

Descriptive Analysis of the Survey

In this section, we give a descriptive analysis of the survey conducted. Broadly, this section is covers the following analyses:

Respondent profile for purchases made in routine vs non-routine transactions

Delivery interaction summary

Information adequacy summary

Satisfaction level summary

Summary of Purchases Routine Vs Non Routine

Respondent Profile

Table 1 presents a summary of Non-routine purchases made by the respondents. In this study, majority of the non-routine purchases were less than 4. Next, higher level of transactions that happened was between 4 and 6. This shows a good adoption rate of e-business for non-routine purchases.

Table 1: Number of non-routine purchases Count:

Row Labels	Count of Sno
1	48
Less than 4	133
Between 4 and 6	55
More than 6	45
(blank)	3
Grand Total	284

Since the study aims at comparing the perception of customers between routine and non-routine transactions, a summary data would provide an overview of the characteristics of the purchases. From Table 9 (Section 6A), we can see that 162

respondents have made 6 transactions on a routine basis. The next majority transactions happen to be less than 9 where 70 respondents have made these many number of routine transactions. It is also interesting to note that respondents tend to make more than 12 transactions if they have crossed 9 transactions in a year.

Summary of Delivery Interaction

Supply chain functions efficiently only if the information flow augments the other flows effectively. Customer interaction during delivery is a key aspect of an e-business. Constant interaction with customer with necessary delivery related clarifications help build a loyal customer. Thus, in this study, we captured extent of delivery interaction by the e-business.

Table 2: Average Delivery Interaction Satisfaction for non-routine items

No. Non-routine Transactions	Average of Delivery interaction	No. Routine Transactions	Average of Delivery interaction
1	2.50	6	3.06
<4	2.75	12	3
4-6	3.34	<9	3.25
>6	3.20	>12	3.23
Grand Total	2.94	Grand Total	3.13

From Table 2, it is evident that there is not much difference in the perception of respondents with regards to delivery interaction. The overall average remains at 2.94 for non-routine transactions and 3.13 for routine transactions. This may indicate there is a scope for improvement with respect to regularity of information flow as we would expect it to be close to 5 as customer satisfaction level needs to be benchmarked to the highest level. This has to be the standard maintained by the e-business.

Summary of Information Adequacy Routine items

Information flow can also be measured with regards to extent of delivery interaction. Majority of respondents who have made 6 routine transactions were incrementally satisfied with the delivery interaction. The Table 3 presents another important information in that the respondents who have rated e-business on sufficient quantum of interaction also feel that the extent of information provided is more.

Table 3: Summary (Average) of Information Adequacy of E-business on Routine and Non-routine transactions

No. of Routine Transactions	Information Adequacy	
	No	Yes
6	2.00	3.17
<9	3.85	3.12
>12	2.33	3.47
12		3.00
Grand Total	2.73	3.19

No. of Non-Routine Transactions	Information Adequacy	
	No	Yes
1	2.77	2.43
<4	2.80	2.75
4-6	3.64	3.31
>6	3.00	3.21
Grand Total	3.07	2.88

Summary of Satisfaction Levels

Satisfaction level for non-routine items

Table 4 illustrates the satisfaction level of respondents for the transactions made for non-routine items. The respondents who purchase rarely tend to have a lower satisfaction level compared to customers who purchase frequently. This may be due to unsatisfactory products delivered by the e-business. This needs to be explored.

Table 4: Average Satisfaction levels of market place stock for non-routine items

Row Labels	Average Satisfaction level
1	2.75
<4	3.17
>6	3.53
4-6	3.87
Average	3.33

Summary of satisfaction level of respondents for routine items:

Since one of the objectives of the study was to compare market place fulfilment versus brand fulfilment, an overview of satisfaction level is desired. Table 5 highlights that with respect to routine transactions average satisfaction level is 3.14 overall. This seem to slightly lower compared to the 3.29 overall for non-routine items. This may indicate that there is a scope for improvement in any of the physical , information and financial flows of the e-business

Summary of Payment Information

Summary of Ease of Payment Routine Items

Financial flow forms the key component of an e-business supply chain. Hence, in this study we also collected data on ease of payment. We found that majority of the customers were happy with the choice of payments offered (Table 5). This goes to show that one of the key aspects of indian e-businesses that they are responding the needs of the indian consumer effectively.

Table 5: Summary of Ease of payment for routine items

Count of Payment	Column Labels	
Row Labels	No	Yes
6	6	156
12		9
<9	3	67
>12		43
Grand Total	9	275

Research Questions

Previous research has highlighted that customer trust is an important influencer for purchase decisions especially with respect to B2C e-commerce (Slyke et al.). Our research relates to this idea and studies the perception of customers towards different fulfilment channels of e-business. In accordance with this, we postulate the following research questions for the e-business supply chain:

Does the perception of customers differ with respect to different channels of fulfilment in an e-business supply chain?

If there is a difference in perception for these channels, what are the supply chain factors (physical, information and financial) which influence these perceptions?

Hypotheses

To answer the first research question, we need to look at customer perceptions towards physical, information and financial flows and their satisfaction level in brand-fulfillment and market-fulfillment channels.

Customer Behaviour in Different Channels

To answer the first research question, we need to look at whether the customer perceptions towards purchasing routine items vs non-routine items are same. Thus, we postulate the following:

H1: Customers perceive that the transactions of routine and non-routine items equally.

In order to test this hypothesis, we use a chi-square test. The results of the chi-square tests are given in Table 6.

Table 6: Crosstabulation of Number of purchases in routine and non-routine items

		Number of purchases which are routine in the last 12 months (Count)				Total
		<9	>12	12	6	
Number of Non-routine transactions	<4	22	19	6	89	136
	>6	15	18	0	12	45
	1	12	3	0	33	48
	4-6	21	0	6	28	55
Total		70	43	12	162	284

Table 7: Results of Chi-Square Tests for number of purchases made

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	79.855[a]	12	.000
Likelihood Ratio	77.929	12	.000
N of Valid Cases	284		

a. 8 cells (40.0%) have expected count less than 5. The minimum expected count is .10.

From Table 7, we see that the results are of Chi-square tests are significant at 5% level. This indicates that the customer perception towards the number of purchases made in routine and non-routine items are not the same. These results indicate that the necessary supply chain factors need to be probed further. Our interaction with respondents chosen randomly indicate that customers expect better information adequacy for non-routine transactions.

Customer Perception Towards Fulfillment Channels

As mentioned earlier, this study addresses the different fulfilment models. With regards to this, we postulate the following hypothesis:

H2: Customer perception towards the Physical flow (as characterised by Marketplace stock, Delivery Mode and Delivery when promised) for routine and non-routine items are the same.

Transactions Made Through Seller-Fulfilled Stock

In order to address this question, the customers were asked about whether the items were served from the seller-fulfilled stock or brand fulfilled stock.

H2a: Customer perception towards the Physical flow (as characterised by Marketplace stock) for routine and non-routine items are the same.

Then we look at whether the fulfilment happened in the same way for both routine and non-routine items. This data is then analysed using Chi-square test. The results are presented in Table 8 and 9.

Table 8: Crosstabulation of Brand vs. Seller Fulfilment Stock

% of Total

		Was it a buy from market place stock (Routine)			Total
		No	Not aware	Yes	
Was it a buy from market place stock (Non-routine)	No	4.2%	1.1%	6.3%	11.6%
	Not aware	6.7%	29.9%	4.6%	41.2%
	Yes	3.2%	4.6%	39.4%	47.2%
Total		14.1%	35.6%	50.4%	100.0%

Table 9: Chi-Square Test results of Fulfillment Channels

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	159.416[a]	4	.000
Likelihood Ratio	171.433	4	.000
N of Valid Cases	284		

a. 1 cells (11.1%) have expected count less than 5. The minimum expected count is 4.65.

The Table 9 highlights the fact that both the channels had a different way of fulfilment. Thus, it is worthwhile to explore further using the other physical flow variables. It can be observed that a large number of respondents were not aware whether the stock was fulfilled from stock of brand or the seller. This requires further probing because it can become a business challenge for the e-businesses in a longer term.

Perception Towards Delivery Promise Time for Routine and Non-Routine

We expect that the perception of delivery promise time for routine items to be different from the delivery promise time for non-routine items.Thus, we conduct a chi-square test to see if there is a difference in perception towards the delivery time.

H2b: Customer perception towards the Physical flow (as characterised by Delivery Promise Time) for routine and non-routine items are the same.

Table 10: Crosstabulation of Delivery time perception

			Delivery when promised_routine				Total
			Ahead of time	Delayed	Not aware	On time	
Delivery when promised (Non routine)	Ahead of time	Count	38	0	3	3	44
	Delayed	Count	0	19	0	3	22
	Not aware	Count	0	0	3	3	6
	On time	Count	14	3	0	195	212
Total		Count	52	22	6	204	284

Table 10 highlights that majority of the e-businesses have understood the importance of delivery time and promise deliveries on-time. In fact, for some respondents they were able to make promises ahead of time.

Table 11: Results of Chi-Square Tests for Delivery promise

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	445.988[a]	9	.000
Likelihood Ratio	266.939	9	.000
N of Valid Cases	284		

a. 10 cells (62.5%) have expected count less than 5. The minimum expected count is .13.

Table 11 indicates that the perception towards different delivery promises are different for routine and non-routine items. Our probing again indicates that customer value information quality as critical for non-routine purchases.

Customer Perception Towards Information Flow in E-Business Supply Chain

Information flow is another metric that forms a critical component of an e-business supply chain. In fact, the success or failure of an e-business can be solely judged by the ability of the e-business to handle information effectively and also act accordingly. Thus, we postulate the following hypothesis:

H3: Customer perception towards the information flow (as characterised by information adequacy, delivery interaction and tracking facility) for both routine and non-routine transactions are the same.

Customer Perception Towards Information Adequacy

Adequate information on services provided for the customer can represent the extent of visibility of the entire supply chain. Thus, we postulate the following with respect to information adequacy:

H3a: Customer perception towards the information flow (as characterised by information adequacy) for both routine and non-routine transactions are the same.

Table 12: Crosstabulation of Information Adequacy
% of Total

		Was Information given adequate_routine		Total
		No	Yes	
Was Information given adequate_non routine	No	10.9%	13.0%	23.9%
	Yes	2.1%	73.9%	76.1%
Total		13.0%	87.0%	100.0%

The Table 12 results indicate that nearly 76% of non-routine transactions and 87% of the routine transactions have adequate information provided for. Although, this number is high, there is a scope for improvement for non-routine items.

Table 13: Results of Chi Square test for Information adequacy

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	83.653[a]	1	.000
N of Valid Cases	284		

Table 13 indicates that the perception of customers towards information provided is not the same for routine and non-routine transactions. This supports the hypothesis H3a.

Customer Perception Towards Delivery Tracking

Another dimension of information flow is delivery tracking. Ability of e-business to connect with logistics partners to provide timely tracking for the customer may improve the customer satisfaction. Thus, we propose the following hypothesis:

H3b: Customer perception towards Information flow(as characterised by delivery tracking) for routine and non-routine items are the same.

We test the hypothesis, using the crosstabulation.

Table 14: Crosstabulation of Delivery tracking
% of Total

		(Routine) Did you receive SMS / Mail			Total
		No	Not aware	Yes	
Did you receive SMS / Mail (Non_routine)	No	4.6%		1.1%	5.6%
	Not aware		1.1%		1.1%
	Yes	3.5%	2.1%	87.7%	93.3%
Total		8.1%	3.2%	88.7%	100.0%

As Table 14 provides, 93% of customers who purchased non-routine items were provided tracking facility and 89% of customers who transacted routine items were provided tracking facility. Thus, routine items need some attention by the e-business supply chain.

Table 15: Results of Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	214.347[a]	4	.000
Likelihood Ratio	80.547	4	.000
N of Valid Cases	284		

Results from Table 15 indicate that the customer perception towards tracking facility is not the same. This supports our hypothesis H3b. Customers expressed that they need more information pertaining to routine purchases.

Customer Perception Towards Satisfaction Levels

Our expectation is that frequent buyers tend to have higher satisfaction levels. Hence, for a routine item we would expect satisfaction level to be more compared to a non-routine item. So we postulate the following:

H4: There will be significant difference in the variance of satisfaction levels of customers buying in the routine versus the non-routine transactions.

The satisfaction level of the customers is measured in a Likert scale of 1 to 5 with 5 being the highest satisfaction level. This hypothesis is tested using ANOVA method.

Table 16: Results of ANOVA for satisfaction level.
If market place delivery, rate transaction sastisfaction level

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	207.791	4	51.948	105.828	.000
Within Groups	136.952	279	.491		
Total	344.743	283			

Table 17: Robust Tests of Equality of Means
If market place delivery, rate transaction sastisfaction level

	Statistic[a]	df1	df2	Sig.
Welch	103.373	4	95.653	.000

a. Asymptotically F distributed.

From Table 16 & Table 17, we can conclude that the variance of the satisfaction levels between routine and non-routine transactions are not the same. Thus, it supports our hypothesis H4.

Predictors of Satisfaction Level

Our analysis from the previous sections point towards that all the variables considered were perceived to have different effect on the satisfaction. However, one of the limitation of the analyses from previous section is that it does not analyse the impact of multiple variables on the satisfaction levels. Hence, in this section we provide an analysis to overcome this limitation.

We had used number of variables to capture the perceptions:

Customer research on willing to buy an item

Delivery interaction

Delivery promise time

Mode of payment

Ease of payment

Satisfaction level

Mode of delivery

Delivery tracking

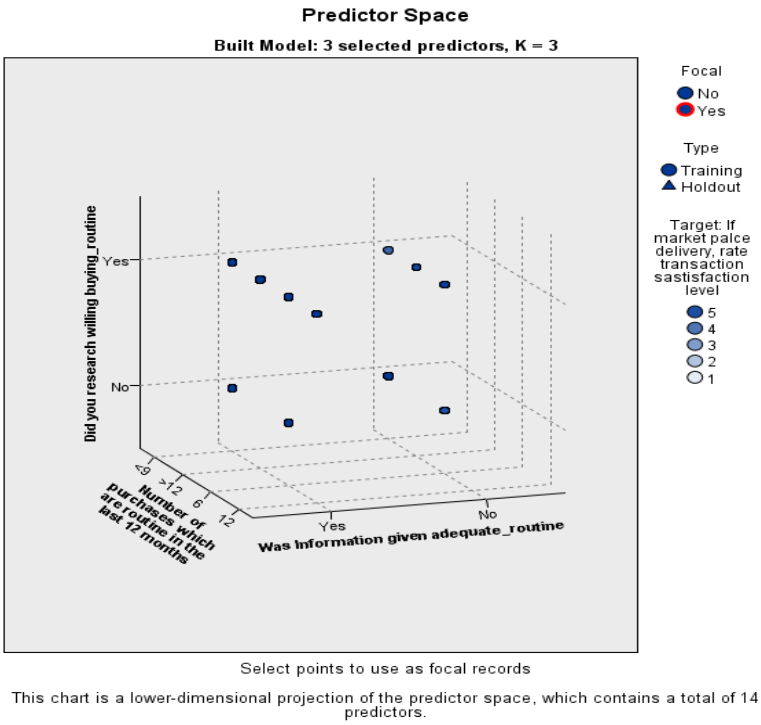
Brand fulfilled or Seller fulfilled

It should be noted here that apart from delivery interaction and satisfaction levels, all the other variables are categorical variables. Thus, using a tool like multiple linear regression may not yield desired results. Hence, it is decided to undertake a classification model with a forced target variable.

Since our objective is to analyse the impact of the variables on the dependent variable which is satisfaction level, we use this variable as a forced target variable in the classification model. The classification model used for this purpose is KNN (K Nearest Neighbors) algorithm. This method is robust enough to accommodate categorical variable at the same time providing inference on the influence of multiple variables.

We undertake this analysis in two parts with first one being for routine items and the second one for non-routine items. The results of the KNN model run with 9 predictors is presented in the Figure 4 for routine items.

Figure 4: Predicting Satisfaction Level of Routine Items Using Knn Model:



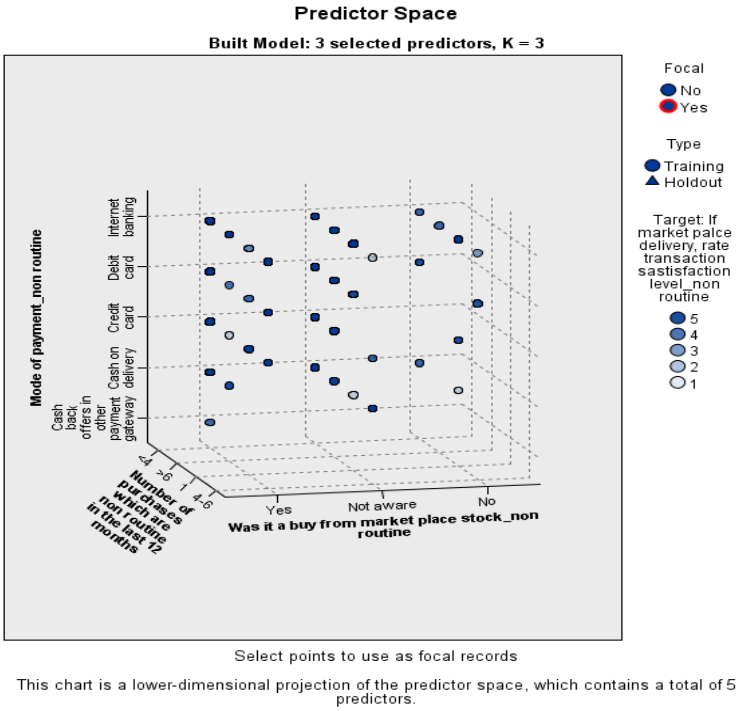
The Fig. 4 provides 3 predictors which were found to be significant with overall error being 104.6. Specifically, the analysis tells us that Customers willingness to research before buying, Number of purchases made in the last 12 months, Information adequacy can explain the satisfaction levels of customers for routine transactions. The model provides insights for the e-business. Number of purchases made along with willingness to research tends to give a higher satisfaction score. Similarly, If the information provided is not adequate, the satisfaction level tends to be low. Hence, it is important the e-business ensures timely information for the customer and also encourage customers to buy more of routine items by designing suitable loyalty programs and/or promotional offers.

A similar analysis was run with 9 predictors but this time for non-routine items. The results of the analysis is presented in Figure 5. The model had an overall error of 127.6.

The KNN model this time provides us with different insight. Apart from the number of purchases made in the last 12 months, mode of payment and channels of fulfilment awareness turn out to be significant. This model provides e-business different insights. For a customer who purchases non-routine items, mode of payment is a significant variable. Ability of an e-business to provide multiple payment modes is thus justified. Also, customers who bought fully understanding that they are buying from marketplace tend to have higher satisfaction levels compared to those customers who are buying brand fulfilled stocks.

This insight has a significant impact on e-business supply chain. This may indicate that the sellers who are fulfilling the customer orders are able to provide better customer service compared to brand fulfilment items. Although brands may have own warehouses, since they must deal with almost infinite number of items their service level may suffer. Whereas, since the seller serves limited stocks, he may be able to focus on the aspects of supply chain better. However, this observation may need further examination.

Figure 5: Predictors of Satisfaction Level for Non-Routine Items



Discussion

The most important finding from this study is customers' perception of routine and non-routine transactions in e-business supply chain differ. This has a significant implication in which the e-businesses may need to perform. While it may be natural to expect that customer experience in e-business is indeed important, our study highlights this from a supply chain perspective providing different insights. The backbone of e-business supply chain namely physical flow, information flow and financial flow need to align with the customer interests. Some of the implicative insights from this study are:

Repeat customer purchases may result in a higher customer satisfaction level

Channels of fulfilment and hence marketplace stock is an important driver of customer satisfaction level for non-routine items

Mode of payment is an important contributor for customer experience for the non-routine category.

The information provided for non-routine items are less compared to routine items. Hence, there is a need to look into more customer interaction through information flow.

From an e-business supply chain perspective, it is imperative to look at how to attract customers to come back for repeat purchases. From this angle, it may be worthwhile to look at customized loyalty programs for routine items and/or to engage in promotional offers for these customers. One of the limitations of the study could be that the sample may have sampling and respondent bias as authors have intervened with respondent's quality. To this extent, this may be treated as judgemental and convenience sampling which is important for this kind of problem.

This research can be further extended by suitably including the effect of mediation and/or any other suitable supply chain constructs.

Acknowledgement

We like to thank and acknowledge the work of Ms. Chitra Bari, Full-time PGDM student of LIBA, 2016-18 batch for helping us in creating soft copy of the questionnaire and also collecting data for pilot study.

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