



## VIRTUAL SHOPPING CART ABANDONMENT AND CONSUMERS' AFFINITY TOWARDS CONVENTIONAL SHOPPING BEHAVIOR

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### Abstract

Global Online shopping - Highly Acknowledged 'Current Era Habit' of internet users. This empirical study investigates the reasons for online consumer's non buyer behaviour. 'The Show stopper' can be, the retailer's own Virtual cart itself. High frequency of non-buyer behaviour has put off lights on Online marketer's face, as it delays the ROI radically. 88% of online shoppers that is, out of 10 online shoppers 7 individuals abandon the virtual cart. This is critical for this matured state of the technology which has been introduced since 2 decades. The purpose of this study is to find out the dominant factors influencing Virtual Cart Abandonment, confined to Virtual Shopping Cart(VSC) interface and its navigation system. A framework was created with Structural Equation Model (SEM) with new buyer perspectives, To measure the affinity towards Conventional Shopping Behavior, The study findings show that Information Architecture was negatively related in cart abandonment behavior. Correspondingly other psychological attitudes are also studied to come up with practical implications and inferences.

**Keywords:** Cart Abandonment, Virtual shopping cart, Online shopping behavior, Conventional buying, Information Architecture, Bangalore working Women.

### Introduction

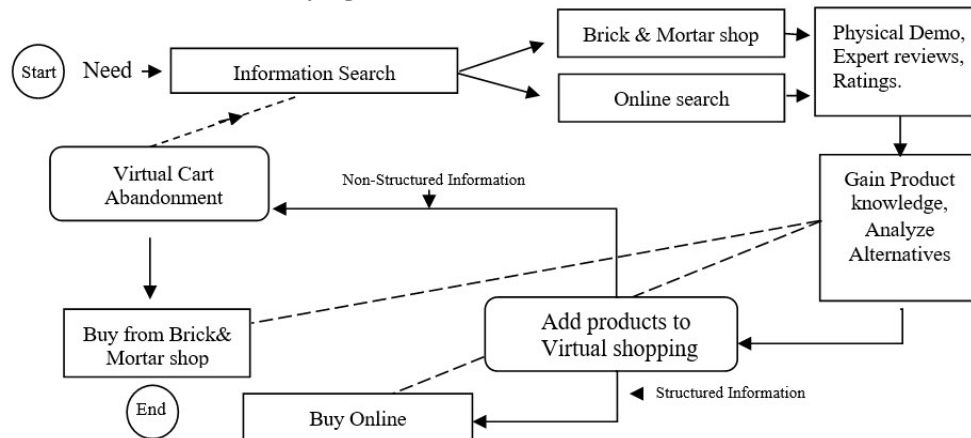
Marketers are investing on VSC Development and unable to control Online shopper's behavioral intention on Virtual shopping Cart Abandonment. Industry reports (Forrester) says that 88% of online shoppers had abandoned their cart after selecting their favorite products. There can be number of possible distractions from the Virtual shopping cart interface module itself, due to complex information, as well as from the Indian shopper's belief system and attitudes. Though retailer can fetch product relevant demands and the profile of its target consumers with this abandoned cart data, It is not reliable to make assumptions for any future guaranteed sale. Despite comfort, and discounts 88% of online shoppers says that they they have abandoned VSC this is same as five years ago, which shows that retailers are still inside the puzzle to find a way.

Indian shoppers are likely to spend almost 85% more on global online marketplaces in 2017 across categories, say a report jointly published by PayPal and Ipsos. According to Morgan Stanley Research report (2015) India is the second largest in terms of Internet users, counting 277 Million a 50% increase from the previous year, which probably contributed to a steep growth in the gross merchandise value for Online retailers. Google has predicted that women will increase their share of online shopping, as their contribution will grow by 5 times in the next 4 years (Track.in). Per capita incomes are likely to double by 2025 in India and this should drive higher aspirations of online shopping among the Indian consumers. Exposure to social media and other group chats applications share information about P&S before release, Social networking sites integration with shopping cart also bring in Consumer engagement to share shopping experiences (Forsythe et al., 2010), Also discussions around price advantages, Value for money, new features are analyzed and published as reviews. A recent study on the 'State of Ecommerce' in India conducted by ASSOCHAM and Comcast has unearthed several interesting aspects of Internet usage in the country, and the penetration of retail shopping using digital medium. Adoption of eCommerce is much faster in Tier 2 cities as compared to Tier 1. Virtual Shopping Cart can be an Effective -Technology Enabled Decision Aid (tool). However, marketers are losing money on increasing bounce rate (Cart Abandonment) by online Shoppers. This study will focus to reduce the earlier studied constructs with new perspective and report the dominant factors which will help the marketer to sustain the competition.

### Digital Environment and the Act of the Purchase

A system utilized to store items for making purchase decision by online shoppers, which are called Virtual shopping cart. Online shopper has an intension to search the web, Items are pushed to this system when identified as worth exploring or Comparing to finalize selection. This system can handle a set of object related information and relevant navigation to proceed with different payment options. In 1979 Michael Aldrich the pioneer of online shopping stats that online shops can enable 'closed' corporate information systems to be opened to 'outside' correspondents not just for transaction processing but also for e-messaging and information retrieval.

### Affinity Created towards Conventional Buying Behavior



**Figure: 1 Stages in purchase decision cycle – Researcher's own model**

Online customers place the item in the cart to quickly access and gather more information about the product. As the medium eliminates human-to-human interaction, it is ambiguous for consumers to proceed with the interactive medium (Krithika M& Rajini G. 2017). Building relationship between sellers and customers requires trust, familiarity, and references from past experiences. In Brick and Mortar outlets commitment to the customer is performed by its sales employees, and transactions are made rewarding their service excellence and product expectations. They maintain key advantages over online channels like demonstration by product expert Nielsen (2016). This expert consulting feature creates significant influence on traditional purchase inclination. Consumers who know precisely what they want are probably less vulnerable to influences from Sales Agents, Show Room Experts. However, the consumer can exploit their services with no guarantee in immediate purchase Baumesister.R (2002).

### Research Methodology

The current study used both primary and secondary data. The primary data is collected from Working Class women in Bangalore Structured Questionnaires are prepared with 18 items for 5 items per dimension.

### Data Collection

Primary data collected from 322 respondents from which 247 are eligible (10% sample).

### Sample Design

Convenient Sampling is used to collect data from the respondents. This study was conducted between 2015 April -2017 April among working class women in Bangalore,

### Area of Study

The area of study chosen was Bangalore.

### The Study Contribution:

This study has made few theoretical contributions with are critical findings, Discussed inferences may be highly useful to the Online retail marketers in minimizing the cart abandonment problem caused by information overload.

### Theoretical Background

There are relatively limited studies are available on Virtual Shopping cart Abandonment (VSCA) as it has been a mystical area to understand due to the fact that consumers do not remember why they did abandoned some thing? Vs What they have purchased?. An important study by Kinney & Close A. 2009 conclude that Consumers shortlist items in the cart as a part of their selection for consideration to organize their transaction but they leave the choosen products behind and purchase alternatively from a physical store. According to Nielson (2016), Consumers are visiting physical outlets to gather information then going online in search of the lowest cost option same set of information seekers decide to buy from a physical shop after their information search. There are only limited studies are available on this topic of online cart abandonment compared to other online scenarios, A fantastic study by Kim, (2016) have reviewed connecting topics like Hedonic Activity, Cynical Activity, and Affinity towards Conventional Buying. Despite the accelerating pace at which technology-based service systems are trending in retailing, scholarly research on this chapter is still at a nascent stage.

Researchers have reported online shopper's critical concerns on Website Design, Responsiveness, Pre/Post sales service and Site Reliability. System Security and Customer support provided by the specific online retailer are major factors influencing

the purchase decision. Bauer, 1960 stated that shopping is a risky activity in which purchase decision phase is critical and may affect transactions due to uncertainty Whereas Nazir.S (2012) prime obstacles are privacy and lack of trust in disclosing Credit / Debit card information and Karthika M. (2017) has investigated the determinants of consumer's electronic shopping cart is more than simply a utilitarian space to store goods. Salam, Al (2003) work state that when perceived risk is high, online shopper's tends to skip the buying process. A primary tone was set by Kinney . MK & Close. A.G (2009) which is confirmed by He .B & Bach.C (2014) for product search and product evaluation as key phases in cart abandonment in the purchase decision phase. Thus online shoppers may refrain from placing an item of interest for fun, entertainment or to escape boredom. Researchers have made limited contributions to this specific title as abandonment of Virtual Cart, were as researcher has reviewed relevant journals to find the gap for further study. This study focuses on the factors which determine the fact why online shoppers are hesitant to make purchase decision? How to engage the online shoppers to minimize the non-buyer attitude.

### **Research Problem and Purpose of the Study**

Marketers are continuously investing on technology with great expectation on improving the aspects of ROI. Once the marketer has lost the customer for any reason ,there is no guaranteed result though bringing the customer to revisit. There are millions of such abandoned cart data which is unreliable to make any sales assumption, based on which Marketer can stock the product. At the same time we cannot neglect the data completely as recent marketing material like smart messages and omnichannel approach have seen positive results, there are successful conversions logged with personalized promotions. Hence the study is important to find the primary factors, which affect virtual shopping, cart abandonment.

**Research Questions:** Why Online shoppers abruptly leave their shopping cart? Where do they shop alternatively? What are the distracting elements?

**Purpose of the Study:** To find the primary factors and to measure the relationships for cart abandonment with online shopping behavior.

### **Information Architecture**

Online shoppers are obsessed with information on their different types of search, While they short list products in the Virtual cart they just need adequate information only, According to Tugade B. & Engle, (2004), A large part of information processing is eased with visual clarity and logical grouping Study of Information acquisition patterns is necessary for a theory of consumer information processing Hoffman and Novak (1996), studied about the cognitive state experienced during online shopping experience. It states that navigation is the key determinant of online experience based on the information clarity and alignment, a high level of challenge may become obvious in this telepresence. Richard Saul Wurman, first man who coined the term states, Information Architecture (IA) is the structural design of shared information environments; According to Kinney. Mk & Close. A. (2009) many e-commerce websites generally suffer from incomplete information and have disintegrated content with no hierarchical approach which can help to proceed with a transaction. Nielson states that most important aspect of any online retail is findability of information without much difficulty. Taxonomy agrees with general logical thinking habit (Nie, J., Hao, H., 2007). Meanwhile, when search target is not clear or keywords are inaccurate, application of this method can improve search efficiency. Online retailers provide relevant P&S data for the online shopper's consumption. This visualization of data in a need based scenario can be a powerful and effective marketing strategy to provide sufficient P&S information. Brick and Mortar outlets regular counter displaying of P&S are replaced by product pictures with additional zoom functions and a few orthogonal views.

According to Zhao.X et al (2017) When an online retail website demonstrates cluttered, non-standardised layout with less engaging Virtual Shopping Cart the online shoppers get frustrated in first place due to the fact that mental workloads were significantly higher Poor Information Architecture (IA) shall not support readability and findability of information. In addition, sites with navigational restrictions from Virtual shopping cart to product info or product review section may not be user friendly. Stigler.G.J(1950) on utility states that a negative influence is created in scenarios when marketer engage with personal messages, prominent announcement on a target amount spent in order to avail free delivery, Offer Coupons with Up selling and Cross selling messages, which distract online shoppers from their main purchase focus.Site reliability can be achieved by providing information which are logically grouped and well-structured for readability and findability. User may browse several times to fetch information and his journey requires to be smooth from the shopping cart to the product info and reviews,

### **Hedonic Attitude (H.A.)**

H.Aattitude consumers shall consider adding items to the Virtual cart as a fun activity Oliver RL,& Shor M (2003). Payment cycle may be aborted. Hedonists believe that there are only two motivators of human action, pleasure and pain and that decisions should only be made to further our pleasurable experiences and minimize or completely eliminate our painful ones. The hedonic attitude is first used in purchase context (by Hirschman and Holbrook1982). Associated terms, which carry

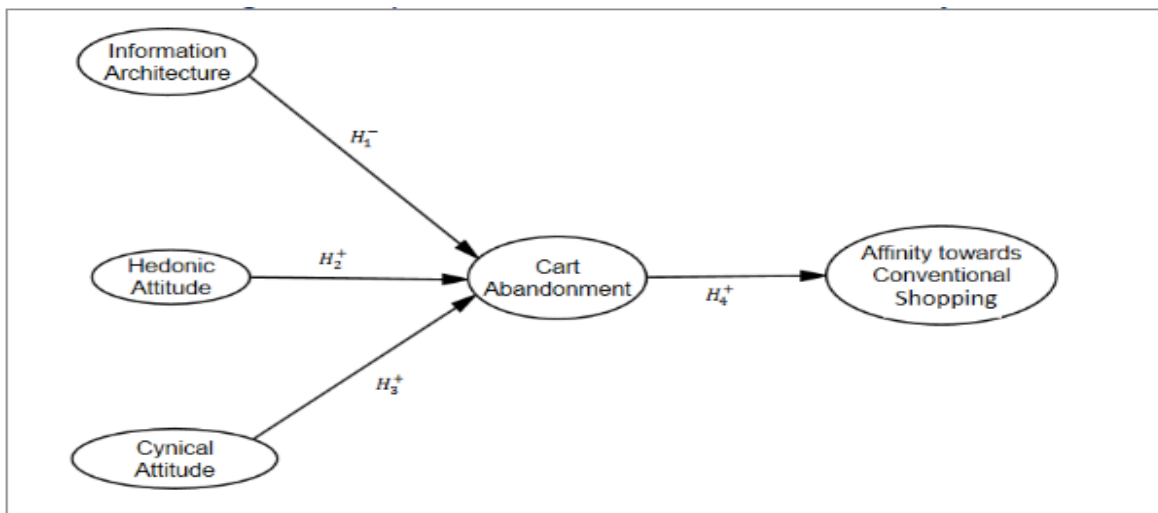
emotions like leisure, fantasy, and enjoyment, are acceptable. Bonera (2011) has established that these hedonic attributes of an online consumer also have a role in determining customer's online shopping behavior. When an online shopper has a hedonic motivation, she gets benefit from experiential and emotional aspects of online shopping cart, which can be fantasized. Hedonic consumers love to stay on different online sites and keep adding items and it may or may not have any purchase motivation. The reason could be merely to get enjoyment to kill the boredom. Researchers state that hedonic buying models differ from others and are most unpredictable. Moe 2003; Wolfinger and Gilly termed this behavioral attitude as Experiential motives in their study for finding the cart abandonment in 2001. Where the online shoppers add items to the virtual cart with no logical reasons or any motive for need satisfying aspects but the activity associates them more towards future aspirations and sharing ideas in social networking sights. H.A attitude does not commit to any transaction hence the purchase intention is not strong enough (Mathwick et al. 2001). Thus, entertainment-seeking shoppers may place items in a cart for hedonic reasons. Such "experiential shoppers" (Novak et al. 2003; Wolfinger and Gilly 2001)

**Cynical Attitude (C.A.)**

Cynical is a synonym of Skeptical: means "having reservations". Someone who is skeptical will not easily be convinced, will be hard to persuade. The main meaning of cynical is "believing the worst of people", or as NOAD states that users are skeptical in trusting system integrity. Online User may have different goals and looking for a solution online. Due to the complexity involved in finding the match or the right information they surf different portals and it is easy to get lost in the links. According to Wang H. et al (2016) online retailer falls in the informational search and exposed to the most popular and finds it to be the best user experience. Li X et al, (2016) shoppers would directly search on the portal rather being redirected from an intermediating search engine. In this context marketer attempts to grab the attention of the user by customized messages and recommend products based on the initial key word search, but this may not be effective when the context is not met. The Cynic takes a negative attitude towards the marketer's unsolicited action. Cynics remember everything that has gone wrong, every bad thing. The marketer's goal is to maximize profit which in turn conflicts with the shopper's goal. Conflict among goals leads to undermine self-control too, although the relevance is high if two online shoppers give different prescriptions, Cynical behavior is less consistent (Maphet and Miller 1982). [7] Fischbein (1967a) initially adapted the perspective of Hullian learning theory. He postulated that an individual first forms a concept, associated with which are a number of responses. These responses constitute a habit-family-hierarchy called a belief system. Beliefs contain mediating evaluative responses, which summate through classical conditioning and generalization to become an attitude.

**Conceptual Frame Work**

Structural Equation Model was chosen to plot the construct in the below diagram. The hypothesized model or framework of determinants or factors influencing online shopping cart abandonment is depicted in Fig 2. As observed, all the constructs namely Information Architecture, Hedonic Attitude and Cynical Attitude are formative in nature. In essence, these three constructs are the determinants or the influencing factors for Virtual shopping Cart Abandonment. Observations were on poor navigation controls in Virtual Carts over different Online retailing shops. More often customers struggle to access Product details from the Cart interface. Also similar experience noted for Product Review section due to less contrast to the navigational links. Also some Shoppers are not familiar with the labels used in the Cart buttons Example: Terminology used for payment is Checkout, Which is not a regular word used by Indians in purchases.

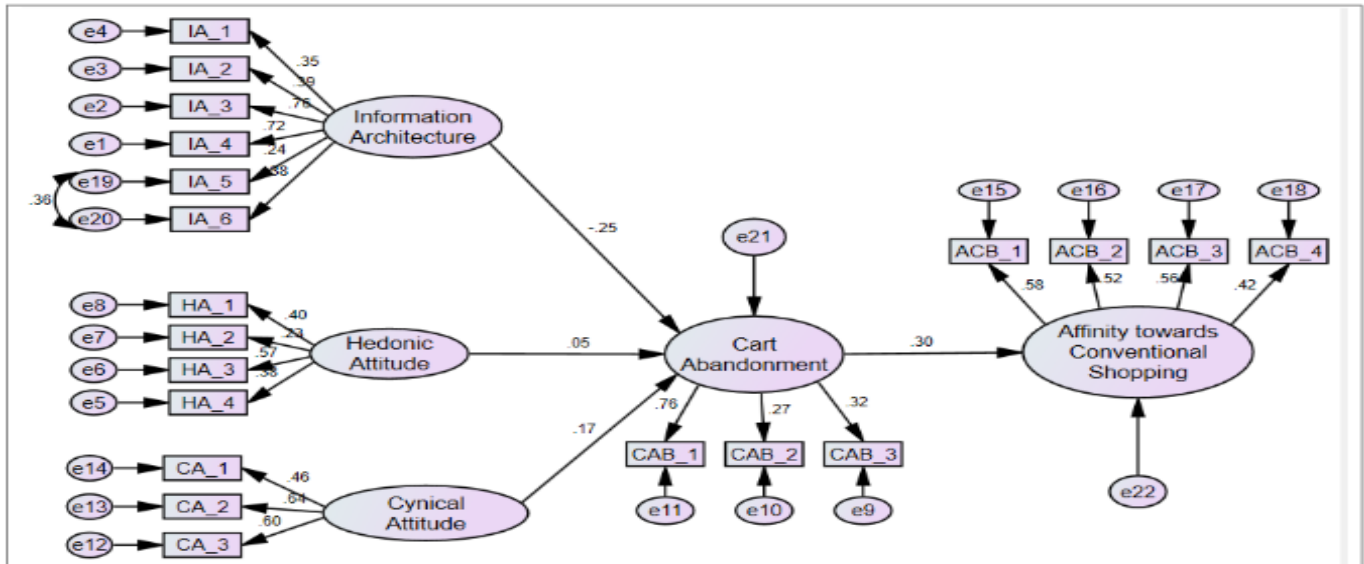




**Fig 2: Conceptual Frame Work of the Research Study**

Based on the above conceptual model, the study developed 20 item questionnaires to study the formulated hypotheses:  
**H<sub>1</sub>**: Information Architecture (IA) has indirect and significant relationship with the VCA towards online shopping.  
**H<sub>2</sub>**: Hedonic Attitude (HA) has a direct and significant relationship with VCA towards online shopping.  
**H<sub>3</sub>**: Cynical Attitude (CA) has a direct and significant relationship with VCA towards online shopping.  
**H<sub>4</sub>**: Cart abandonment (CAB) of online shopping has direct and significant relationship with affinity towards conventional shopping.

The above hypotheses are tested using Structural Equation Model [SEM]. The SEM is carried out using SPSS AMOS 21.0 version. Accordingly, SEM model result is shown in Fig 2



**Fig 3: SEM Model for Cart Abandonment and Affinity towards conventional Shopping**

**Findings & Discussion**

This section allocated for interpreting and discussing the findings of the study. The details of Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett’s Test of Sphericity are given in Table 1.

**KMO and Bartlett's Test**

The KMO statistic tests whether the partial correlations among variables are small. It should be greater than 0.6 for a satisfactory factor analysis to proceed.

**Table 1: KMO and Bartlett's Test Result**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.707
Bartlett's Test of Sphericity	Approx. Chi-Square	708.145
	df	190
	Sig.	0.000*

\* Significant at 5 % level.

Large values for the KMO measure indicate that the data collected for factor analysis is adequate. We can see from the table above that KMO measure of sampling adequacy is 0.707. Another indicator of the strength of the relationship among variables is Bartlett's test of sphericity. Bartlett's test of sphericity is used to test the null hypothesis that the variables in the population correlation matrix are uncorrelated. The observed significance level is .000. So, at 5% level of significance the p-value is small enough to reject the null hypothesis that the population correlation matrix is an identity matrix. Thus there is adequate correlation among the variables to do a factor analysis. It is concluded that the strength of the relationship among variables is strong. Hence, it is a good idea to proceed with factor analysis for the data.

The details regarding number of factors to be extracted and the variance explained are given in Table 2

**Table 2: Reliability and Item Loadings of Measurement Model for Cart Abandonment**

Latent Variable	Indicators	Standardized Loadings	Composite Reliability	Cronbach Alpha	Average Variance Extracted (AVE)
Affinity towards conventional shopping	ACB_1	0.420	0.600	0.603	0.275
	ACB_2	0.562			
	ACB_3	0.522			
	ACB_4	0.580			
Information architecture	IA_1	0.351	0.646	0.681	0.262
	IA_2	0.394			
	IA_3	0.763			
	IA_4	0.718			
	IA_5	0.237			
	IA_6	0.376			
Cynical attitude	CA_1	0.463	0.589	0.593	0.327
	CA_2	0.636			
	CA_3	0.603			
Hedonic attitude	HA_1	0.401	0.432	0.454	0.172
	HA_2	0.230			
	HA_3	0.574			
	HA_4	0.381			
Cart abandonment	CAB_1	0.758	0.447	0.500	0.250
	CAB_2	0.267			
	CAB_3	0.323			

**Table 3: Goodness-of-fit & Incremental Indices of Cart Abandonment and Affinity towards conventional shopping**

Fit Indices	Accepted Value	Model Value
Absolute Fit Measures		
$\chi^2$ (Chi-square)		267.832
df (Degrees of Freedom)		165
Chi-square/df ( $\chi^2$ /df)	< 3	1.623
GFI (Goodness of Fit Index)	> 0.9	0.902
RMSEA (Root Mean Square Error of Approximation)	< 0.10	0.050
Incremental Fit Measures		
AGFI (Adjusted Goodness of Fit Index)	> 0.80	0.876
NFI (Normed Fit Index)	> 0.90	0.833
CFI (Comparative Fit Index)	> 0.90	0.810
IFI (Incremental Fit Index)	> 0.90	0.818
RFI (Relative Fit Index)	> 0.90	0.878
Parsimony Fit Measures		
PCFI (Parsimony Comparative of Fit Index)	> 0.50	0.703
PNFI (Parsimony Normed Fit Index)	> 0.50	0.550

Table 4 depicts the Goodness-of-fit & Incremental Indices of Measurement model for Cart abandonment and affinity towards conventional shopping. From the result, it is clearly observed that majority of the indices are above the acceptance value and hence we conclude it is a good fit model.

### Regression Result

**Table 4: Direct Effect of Research Model: Standardized Regression Weights for Cart Abandonment**

Relationships between Exogenous and Endogenous			Standard Estimate	S.E.	C.R.	P-value
Cart Abandonment	<---	Information Architecture	- 0.251	0.059	-1.923	0.054*

Relationships between Exogenous and Endogenous			Standard Estimate	S.E.	C.R.	P-value
Cart Abandonment	<---	Hedonic Attitude	0.052	0.092	0.447	0.655
Cart Abandonment	<---	Cynical Attitude	0.170	0.061	1.979	0.046*
Affinity toward conventional shopping	<---	VCA	0.303	0.239	2.335	0.020*

\* Significance at 5 % level

The regression results are provided in Table 10. Accordingly, it is observed that the p-value of the relationship between Information Architecture and Cart Abandonment ( $\beta = -0.2511$ , C.R = -1.923,  $p < 0.05$ ) is less than the significance alpha level of 0.05, we accept  $H_1$  and conclude that a dip in Information Architecture is negatively related to Cart Abandonment. The interpretation is that, for one unit improvement shown in the Information Architecture, one could expect about 0.251 times (approximately one fourth times) decrease in Cart Abandonment by the online shoppers.

On the other hand, it is observed that Hedonic Attitude is not significantly (statistically) related to Cart Abandonment ( $\beta = 0.052$ ; C.R = 0.447,  $p > 0.05$ ), thus,  $H_2$  could not be asserted. This is because; the p-value (0.655) is greater than the significance level alpha level of 0.05. In essence, there is no statistical evidence to conclude that Hedonic Attitude will definitely influence the shoppers to abandon the cart in the middle of the online purchase of goods.

Nonetheless, it is observed that Cynical Attitude has a significant relationship (influence) on VCA ( $\beta = 0.170$ ; C.R = 1.979,  $p < 0.05$ ), thus,  $H_3$  could be asserted. Finally, it is observed that Cart Abandonment has a significant relationship (influence) on Affinity toward conventional shopping ( $\beta = 0.303$ ; C.R = 2.335,  $p < 0.05$ ), thus,  $H_4$  could be asserted. The Summary of test results of the study Hypotheses is provided in Table 5.

**Table 4: Summary of test results of the study Hypotheses**

Hypotheses	Study Hypotheses	Result
$H_1$	<b>Information Architecture</b> has indirect and significant relationship with the Virtual Cart abandonment towards online shopping. (Area 01)	Fully Supported
$H_2$	<b>Hedonic Attitude</b> has a direct and significant relationship with Virtual Cart abandonment towards online shopping (Area 02)	Not Supported
$H_3$	<b>Cynical Attitude</b> has a direct and significant relationship with Virtual Cart abandonment towards online shopping (Area 03)	Fully Supported
$H_4$	Virtual Cart abandonment of online shopping has direct and significant relationship with affinity towards conventional shopping (Area 04)	Fully Supported

### Conclusion

The present study postulates the pivotal role of Information Architecture (I.A) in determining Virtual transaction. Hence our findings are critical to know that VCA can be reduced by one fourth if there is an improvement made on IA for one unit. A poor Information Architecture can influence affinity towards conventional shopping behaviour indirectly. Virtual carts possess strong utility feature that helps online shoppers to do one tap purchase as they revisit, via push or pull marketing messages. When ever VSC has information clutter, its perceived easiness is not met, and this produces negative result. Key pointers from observations are a) Usage of nonstandard layout, icon elements which are less intuitive or familiar to the user.

Area 01: The result of the empirical evidence shows that Information Architecture (I.A) has indirect and significant relationship with the Cart abandonment towards online shopping.

Area 02&03: As discussed the two main buyer attitudes which leads to cart abandonment are Cynical and Hedonic attitudes (C.A) & (H.A) , However the study report that the influence of these two buyer attitudes are less significant over the previously stated influencing factor ( I.A) in VCA is concluded.

Area 04: Online shoppers who are unable to complete the transaction due to the poor labeling or lack of clarity in presentation would not complete the transaction and the result of time wasted online will be accounted in their belief system. This Virtual cart negative experience may lead to affinity toward conventional shopping experience were the time wasted will be lesser than their online experience.

### Limitations and Direction for Future Research Opportunities

There are challenges in collecting data, Hence the respondent requires to re-live (Remember) their purchase experience, to respond. A collective study on product review and Screen capture test analysis which later can be studied / analysed to gather insights .There are future technology like Virtual reality and Augmented reality, which can be used in Cart sensory experience endless variation and refinement which researchers cannot resist.

### Recommendations & Managerial Implications

Creating a seamless online shopping experience is the key differentiator, Its important to develop a visual language with iconography and graphics which make the look attractive but also easy to recognize rather recall. The virtual cart should have standard interactions with minimal distracting features like cross promotional messages etc.

- 1) Provide uncluttered layout with contextual level of information.( shall reduce 50% online shopper`s learning curve)
- 2) Also personalized help chat may improve Virtual cart reliability.
- 3) Co-Browsing feature with Social integration.
- 4) Call before VCA (Auto detect the behaviour and a call is initiated avoid frustration
- 5) Use consumer online journey map intelligence to assist for ultra fast checkout.
- 6) Demonstrate smartness like show items added twice in single row, price changes, Out of stock alert.
- 7) Use Visual guide to know relative scale which may improve decision making process and improve confidence.

The research found that most online shoppers experience the Virtual Cart`s characteristics as `Rigid` than `flexible` in nature, as user from perspective. Abandoned carts recovery campaigns with personalized message would not be smart enough if the information is out of context and work have to work in omni channel environment. Hence Online retailers` Show stopper element can not be successful customer engagement which is handled more with VSC may get necessary treatment.

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