B2c Ecommerce Adaptability- An Analytical Paradigm

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Abstract- With the exponential growth of Internet and online sale/purchase emerging trend, there is a massive prospectus of ecommerce market that basically deals with online business transactions. Although the nature of transactions varies from Business-to-Business (B2B), Business-to-Consumer (B2C), Consumer-to-Consumer (C2C) and Consumer-to-Business (C2B) but B2C segment is more prospective. Various Demographic factors, e_Secuirty_Quality and Trust factors affect the B2C market segment includes IT_usage, age_group, income, education, occupation, geographic location, gender, martial_status, innovative_behavioristic, user behavior, attitude, product_category, trust, e_shopping_experience, E-Service Quality, web_functionality, perceived_risk, e-marketer-repo, privacy, security, culture and country. These parameters are chosen to examine the significant influence on consumers' adaptability of B2C ecommerce. This study reports that B2C ecommerce adaptability is seems situation depends upon dynamic psychological field DeT (Demographic factors, e_Secuirty_Quality and Trust) according to customer's DeT Traits which are composite in nature. A composite behavioral trait value DeT is computed dynamically. The computed value is the measure result that denotes a single feature which must composed of variables (α, β, γ) that have correlation(s) as well as shared variance. This shared variance is the extract which indicates that how they move together to impact B2C consumer behavior. Further Empirical rules are to be applied on the basis of which we have to decide whether the B2C Consumer is aligned towards B2C ecommerce adaptability or not. This composite behavioral trait DeT is the entity describe the B2C ecommerce adaptability behavior.

I. INTRODUCTION

The use of ecommerce is increased many fold in the recent past due to internalization of business and commerce. The growth of information and communication technology is the main cause of globalization of the commerce and business. The ecommerce market basically deals with online business transactions. Nature of transactions in ecommerce domain varies from Business-to-Business (B2B), Business-to-Consumer (B2C), Consumer-to-Consumer (C2C) and Consumer-to-Business (C2B). B2C segment is more prospective in all these business models. The use of Internet, is one of the most effective and popular innovations in the modern world, due that a large number of e-business opportunities are created along with various threats to ecommerce business models [1,3]. Internet services are commonly used as a distribution channel through which numerous number of products and services are delivered in far reaching areas of almost in all nations. Although some are in e-business [2,4] willingly others are reluctantly. Different organization whether they are of public or private nature, are in the process of business reengineering or realigning their policies or strategies so that they can reap the benefits of this e-business model although there are challenges and obstacles in the way to operate as well as to deliver the things (goods/services). Competition is at cloud nine in online business also just like offline business.

The objective of the use of ecommerce and e-business include cut on business cost which includes reduction in operating cost, increasing the market segment, raising the efficiency of the business concern and increasing return-on-investment as online business provides diversified market, timely delivery and information, wider range of product and services, better and almost prompt services. Even another important cause of the implementation of ecommerce is the lack of required goods and services in the local market or even in the living country. The ecommerce players are so perfect that they convert potential customers in active customers by using their superior digital marketing strategies [5]. Different terms like e-service, online business, e-business, online services are used interchangeably that refers to online business or electronic business. India has second largest Internet user base in world, only behind China. The penetration of e-commerce is low as compare to developed countries like the United States (266 M, 84%), or France (54 M, 81%) [22,23]. However, there is a growing trend at an unprecedented rate in India. Around 6 million new entrants are added up every month. Cash on delivery is the most preferred payment method in India although other online payment methods [4,6,7]are prevailing but trend is to be changed due to Digital India campaign. Largest e-commerce companies in India are Flipkart, Snapdeal, Amazon India, Paytm. E-commerce market of India is growing many fold. Its worth was about $3.9 billion in 2009 that went up to $12.6 billion in 2013 [16,23]. Studies shows that around 70% of India's ecommerce market is travel related. Although products of many categories are sold online using e-commerce but, Electronics and Apparel are the biggest categories in terms of sales. It is expected that, online apparel sales will grow four times in coming years. By 2020, India is expected to generate $100 billion online retail revenue out of which $35 billion [22,23] will be through fashion e-commerce.

II. B2C ECOMMERCE ADOPTION STIMULATING FACTORS

Like other ecommerce business-model services (Business-to-Business (B2B), Consumer-to-Consumer (C2C) and Consumer-to-Business (C2B)), B2C model services are also affected by various factors. Diffusion of Innovation is one of them. According to Rogers' (2003) diffusion of innovations theory, diffusion is "the process by which an innovation is communicated through certain channels over time among the members of a social system". (Roger 1995) study identifies the

five characteristics of an innovation that are its relative advantage, compatibility, complexity, trialability and observability. In addition to it, other factors that affect consumers' adaptability towards ecommerce are IT_usage, age_group, income, education, occupation, geographic location, gender, martial_status, innovative_behavioristic, user behavior, attitude, product_category, trust, e_shopping_experience, e-service_quality, web_functionality, perceived_risk, e-marketer-repo, privacy, security, culture and country.

IT (Information Technology)-Usage is one of the determinants to adopt B2C ecommerce not only India but in almost in the whole world. This feature is also known as Technology Adopter feature (Rogers (2003)). The usage of IT mainly depends on age (primarily young age Group) (Wong and Sculli (2005), wealth (primarily high income), occupation (Gilligan and Wilson (2003)), geographic location (primarily urbanized population) and literacy (appropriate level of education that can use IT easily) (Choudrie and Papazafeiropoulou (2006), as Technology Adopter customers are more potential or active B2C customers that non-adopter [8,9].

As reviewed that Demographic factors like age, wealth, education and geographic location significantly affects the ecommerce adoption, additionally gender (primarily male) (MacGregor and Vrazalic, 2006 notable feature in many countries including India in context of ecommerce adoption [10,13] but in some countries like Saudi Arabia, women are dominating in B2C e-commerce business.

Innovative_behavioristic feature refers to individuals that are more innovative. These individuals are generally more social and participative, better communication abilities and positive attitudes. Researchers' studies (Chinn and Fairlie (2004) & Marchionni & Ritchie (2007)) significantly concluded that Innovative_behavioristic are more B2C ecommerce adaptive.

Product_category affects the user behavior of adoption of B2C ecommerce. Studies (Gatignon and Robertson (1985)) concluded that product category does matter in user context of ecommerce adaptability, as no two products can have same degree of adoption and it also varies from person to person abut perceived degree of adoption of particular product category or service. [12,14,18] fact that no two products or innovations can be used or adopted in equivalent degree and are usually perceived in a different way from person to other (Bolton, 1983; Dickerson & Gentry, 1983).

Andaleeb (1996) defines Trust as the desire of one party to depend on the behavior of others, especially when these behaviors have implications for the first party. Wei et al. (2009) concluded that there is significant relationship between trust [11,17,25] and B2C ecommerce adoption. Various factors e_service quality, web_functionally and security feature, privacy feature, Trust of customers, e-shopping experience, user-reviews (online/offline) are trust building factors that must be kept into mind by B2C business organization. The success of ecommerce is highly rated with the trust of B2C customers. The study by Ha and Stoel (2009) shows that lack of trust is hindrance to B2C ecommerce.

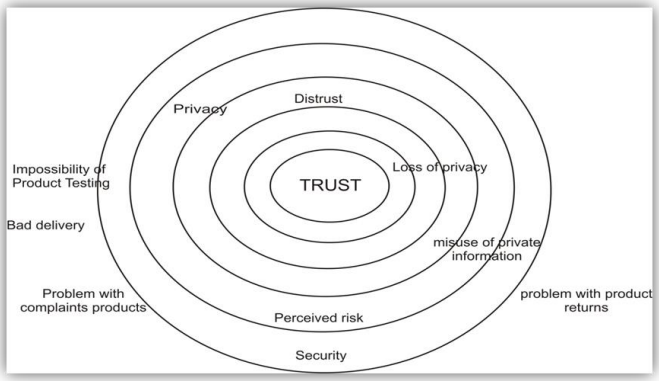

Fig.1: Trust determinants in context of B2C Ecommerce Adaptability

Culnan [23] argued that, Privacy is one of the serious concern in adaptability of B2C electronic commerce. Authors in [27], refers to privacy as the degree to which the online shopping web site is safe and protects the customers' information. Although privacy is handled seriously by the Ecommerce service providers but still there are so many vulnerabilities through which privacy of customers can be harmed. Customers have not much control over personal information storage [19, 24] over web servers or cloud servers even though they manage their accounts by way of passwords. Passwords are also susceptible to be hacked. Besides "privacy", [27] so many other terms coin with it are like identification, authentication, anonymity, digital persona, auditing, and confidentiality.

Security: Security on the Internet is one of the critical issues that determines the successful implementation of electronic commerce operations (Chang, Torkzadeh, & Dhillon, 2004; Andoh-Baidoo, 2006). Cheung and Lee (2001) concluded that Internet users have the perception that Internet service providers provides all the required security related to ecommerce services. Security which is a noticeable critical issue refers to protection against possible threats. In context of ecommerce, security [26,28] is defined as the ability to protect customers' personal and financial information so that it cannot be stolen while performing online operations using Internet. Degree of security refers to the security control to which extent an e-commerce website is perceived to be secure and able to protect the customers' information from potential threats [19,29] Security becomes more concerned issue for B2C customers after happening of attacks on top category of Internet sites, which includes Amazon, eBay, CNN and Yahoo that resulted loss of approximately $1.2 billion USD to these companies (Hesson and Alameed, 2007).

Eservice quality includes quality of website, user friendliness, ease to use, customer satisfaction, Speed of Internet. Actually, online business service quality is part of the consumer shopping satisfaction [11,21,30] which is based on consumer shopping experience that ultimately affects the overall satisfaction level. Hence study signifies that e_service quality is highly related to customer satisfaction. There is positive correlation and significant relationship between e _service quality and B2C e-commerce adoption.

III. PROPOSED WORK

In this paper, B2C ecommerce adaptability model is proposed. As reviewed that there are various determinants that affects the adaptation behavior of B2C customers. When a consumer is responding to or deciding how to act in context of B2C ecommerce adoption situation various characteristics, in effect are weighted by that situation. Furthermore, in respect to that situation, the consumer's behavioral dispositions themselves are weighted by his expectations about the outcome of his manifest behavior about situation.

B2C Ecommerce Adoption Model

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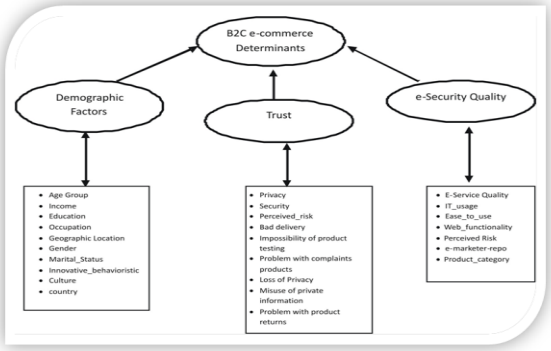

FIG.2: B2C ECOMMERCE ADAPTABILITY MODEL

IV. Weighted DeT Traits Space

B2C ecommerce adaptability is seeming situation depends upon dynamic psychological field DeT according to customer's DeT Traits (Demographic factors, e_secuirty quality and Trust) which are composite in nature. And these DeT components are weighted towards certain responses and is concrete composite of many potentials of the situation. All the components are weighted by customer's DeT expectations of each choice as per situation. This leads to the situation as seems by a B2C ecommerce customer in his dynamic field weights of his relevant DeT components. Furthermore, due to the customer's DeT choice and will, a customer is disposed to specific trait. The choice of customer's behavior, however, depends on the weighting given to these DeT factors, his reading of the outcome of each of his potential traits. These DeT behavioral potentials, are latent functions [1,2,3]. Here, attempts are made to understand a manifest behavior based on these latent functions, and therefore, the relationship between manifest and latents, as defined in Equation-1, applies here. That is given in Equation –i below

$$X_{i1} = \alpha_{11} f_1(\ ) + U_{i1},$$
$$X_{i2} = \alpha_{21} f_1(\ ) + \alpha_{22} f_2(\ ) + U_{i2},$$
$$X_{i3} = \alpha_{32} f_2(\ ) + U_{i3},$$
$$\vdots$$
$$X_{im} = \alpha_{m1} f_1(\ ) + U_{im},$$
$$X_{in} = \alpha_{i2} f_2(\ ) + U_{in},$$
$$\vdots$$
$$X_{ip} = \alpha_{p1} f_1(\ ) + \alpha_{p2} f_2(\ ) + U_{ip}.$$

(Equation-i)

Here, Xim be a datum, a particular manifestation m, for system i, alpha (α) coefficients denotes that each manifestation is a differently weighted function of the latents of functions f Uij defines the unique sources of this manifestation (such as Trust).

Now the equation for DeT field choice is:

$$\beta_{11}W1 + \beta_{12}W2 + \ldots + \beta_{1k}Wk = \alpha 11P1 + \alpha 12P2 + \ldots + \alpha\ 1pPp + U1$$ **(Equation-ii)**

Here, W1, W2, . . . , Wk denotes the latent functions defining the customer's potentials trait of customer i on the k components of i's trait space, that is, the components of vector i in customer's trait space;

$\beta_{11}, \beta_{12}, \ldots, \beta_{1k}$ are the expectations that i has about the outcome of each W with regard to situation α1, that is, the different betas (β) are the components of vector β_1;

P1, P2, . . . , Pp are the latent functions f1( ), f2( ), . . . ,fp( ) defining i's trait , and the components of vector i in traits space (DeT determinants);

α11, α12, . . . , α1p are the latent functions [1,2,3] of the situation α1, that is, the different alphas (α) are the components of the vector α1;

U1 is that part of customer traits resulting from i's unique trait space.

The situation as seeming by B2C ecommerce customer in his dynamic field weights of his relevant DeT components. These equations are not just proposed simply as a model of behavior nor as representations of choice situations. These equations are psychological-behavioral reality,[1,2] in the same way that our local three-dimensional physical space is our reality describe the space of B2C customer's ecommerce adaptability behavior.

Here we designed a Composite behavioral trait DeT whose mathematical representation is specified on the basis of its key design principles. It is shown below:

Let α (Demographic factors), β (e_secuirty quality), and γ (Trust) are different independent variables that represent a composite behavioral trait DeT (dependent variable),Where β >0 and α, γ are unique indicators such that

DeT = α. β + γ where

$0 \leq \gamma < \beta$, therefore

DeT = α. β + γ that represents a composite behavioral trait.

The values of independent variables α, β and γ are computed using weights of their determinants. [13,29]The composite behavioral trait value [29] is computed dynamically. The computed value is the measure result that denotes a single feature which must composed of variables (α B, γ) that have correlation(s) as well as shared variance. This shared variance is the extract which indicates that how they move together to impact B2C consumer ecommerce adaptability behavior. Various categories of features that results in the B2C consumer behavior [7,8] adaptability finding, i.e. DeT traits consists of Demographic factors, e_secuirty quality and Trust which are

further composite in nature. Further Empirical rules are to be applied to check whether the value of DeT lies within the stipulated values (hypothesis(s)) or not and for how much time and frequency, it lies within stipulated boundaries on the basis of which we have to decide whether the B2C Consumer is aligned towards B2C ecommerce adaptability or not. This composite behavioral trait DeT is the entity describe the B2C ecommerce adaptability behavior.

V. CONCLUSION

Foreseeing the behavior of B2C ecommerce customers in ecommerce adaptability is an important issue in online business. Weighted DeT Traits Space approach is suggested in this work. Various DeT factors affect the B2C market segment includes IT_usage, age_group, income, education, occupation, geographic,location,gender,location,gender,martial_status,,innovative_behavioristic,user behavior, attitude, product_ category, trust,e_shopping_experience,E-Service,Quality,web_ functionality,perceived_risk,e-marketer-repo, privacy, security, culture and country. These parameters are grouped together depending upon demographic, Trust and e_secuirty quality features of B2C ecommerce adaptability domain of customers. This study implies that Composite Weighted DeT Traits Space approach can be significantly used to conform the B2C ecommerce adaptability traits of B2c ecommerce customers in seems situation in dynamic psychological field of universe. This approach has advantages that the number of comparisons can be reduced by using composite weighted DeT method.

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