

FACTORS AFFECTING B2B E-COMMERCE ADOPTION DECISION: AN ANALYSIS OF INDIAN TEXTILE INDUSTRY

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ABSTRACT

With more than 276.52 M subscribers to Internet services in India, the country is well on its path to 'digital India': A flagship campaign promoted by the current government. Under the initiative, there is impetus to digitize sectors such as banking and finance, retail, education, healthcare, etc., and bring about a digital revolution. Indian online consumers are expected to cross the 100 M mark by 2017 as reported by an ASSOCHAM study, which is close to half the online subscribers. B2B e-commerce while forming an important pillar of the digital marketplace and showing relative growth over the last years, as yet remains shrouded in many hurdles from a tech infrastructure, capital, consumer acceptance and policy perspective. While the growth and adoption of e-commerce in consumer markets is well documented, the same cannot be applied to B2B markets as the B2B players operate on substantially thin margins, thus differing in scale and volume of operations. The acceptability of E-commerce among B2B sellers in emerging markets also needs a deeper understanding, as policy initiatives without underlying acceptance cannot be expected to deliver comprehensive results. This paper documents the factors that affect B2B adoption among sellers and assigns weights to these factors based on their relative importance in decision making. It explores these factors under the broad themes of policy, culture, marketplace and organizational factors. The paper is relevant for start-up entrepreneurs, digital B2B sellers, policy makers and academia.

Keywords: E-commerce, B2B E-Commerce Adoption, Digital Marketing, Digital Platform.

INTRODUCTION

The past years in the digital marketplace have been marked with not only unprecedented growth but also reengineering of many conventional businesses as they struggle to go online to keep pace with the digital revolution. India in particular witnessed substantial increase in pure click set ups along with brick and click establishments. The modern consumer's exposure to online retail formats via e-commerce and m-commerce applications, coupled with more secure and user-friendly payment safety protocols have been a key factor behind the exponential increase in consumer e-commerce sector. B2B e-commerce on the other hand remained constrained to a few dominant sectors such as IT and banking and finance. With the global shift in world economy towards liberalization and internationalization B2B e-commerce saw a rapid boost as the tool to facilitate cross border trade and bring about an artificial geographical proximity. Fervent support from export promotion councils, handloom promotion councils, commodities boards, etc., encouraged many local suppliers to adopt digital trade platforms to

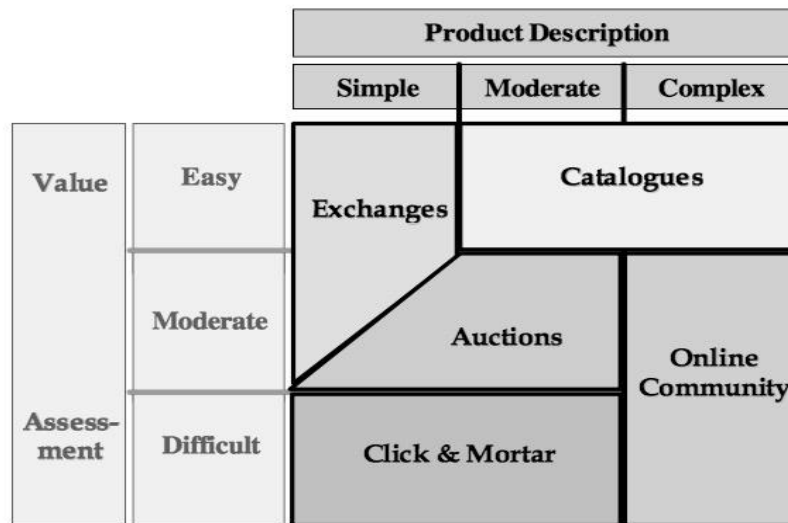
reach global business partners. Since 1991 to 2018, Indian exports have shown average growth rate of 11.2% recorded on monthly basis (CEIC: A Euromoney Institutional Investor Company, 2018), which is undoubtedly aided by digital technology bringing suppliers and business partners in one global marketplace. An IBEF report pegs the growth of Indian e-commerce and India's internet economy to 44.8% CAGR and from US \$125 to \$250 respectively (Indian Brand Equity Foundation, 2017). In a study by Gartner it was estimated that digital commerce market would grow at CAGR of more than 15% till 2020 globally (Columbus, 2016). With rapid innovation in digital technology in both developed and emerging markets, B2B selling is slated to see application of advanced pricing algorithms, supply chain reengineering, e-CRM applications, big data analysis, web analytics, etc. With advent in B2B ecommerce platform it is imperative that we develop lucid understandings of the factors that drive the business model and facilitate its adoption among sellers.

REVIEW OF LITERATURE

B2B e-commerce is defined as the process of using information and communication technology (ICT) to support the end-to-end value chain from manufacturers to suppliers to customers (Thatcher, Foster & Zhu, 2006). Traditionally, Electronic Data Interchange has been the basis of Supply Chain Management Systems, in which suppliers and customers are able to send formatted messages electronically. Since the usage of internet increased, it opened new ways of B2B interactions. Suppliers are able to cooperate and collaborate with their customers using Customer Relationship Management Systems (Peppers & Rogers, 2001). Suppliers and customers are required to share information and data for effective management and coordination of supply chain. This flow of information is affected by various factors that include national culture, competitive environment, IT Culture & infrastructure, etc. (Shore, 2001).

Previous studies in the digitalization domain broadly touched upon the adoption and diffusion of information technology in business process reengineering of international, multinational, transnational and global organizations. Small suppliers and businesses were later added to the study focus as the digital innovation percolated to early adopters. Literature on the B2B digital commerce is largely dominated by studies addressing the digital ecosystem of developed economies, which enjoy greater internet literacy and penetration. Emerging economies on the other hand offer unique and often unforeseeable challenges in light of the diverse financial health, infrastructure requirements and culture affecting adoption of digital innovation (Sabbagh, Friedrich, El-Darwiche, Singh, Ganediwalla & Katz, 2012). Sabbagh, Friedrich, El-Darwiche, Singh, Ganediwalla & Katz, in the World Economic Forum report measured digitization for 150 countries and identified four distinct stages: 1) Constrained economies: Faced challenges in basic infrastructure for digital innovation such as reach and affordability hindering transition to e-business models. 2) Emerging economies: Largely have addressed the affordability challenge and have achieved significant progress in providing affordable and widespread access. Yet, the reliability of services in emerging digitization nations remains have addressed the reliability challenge and provide citizens with access to ubiquitous, affordable and reasonably reliable services. 4) Advanced economies: These countries have made significant strides in addressing ICT usability and developing a talent base to take advantage of available technologies below par and capacity is limited. 3) Transitional economies: Countries in the transitional stage, products and services while improving the speed and quality of digital

services. Thus emerging markets faced a different set of challenges during the digital adoption phase as opposed to developed markets. Early literature on entry strategies of organizations into the digital model focused on either the institutional side (Brouthers & Brouthers, 2000; Meyer, 2001; Hitt, Ahlstrom, Dacin, Levitas & Svobodina, 2004) or the resource-based side (Anand & Delios, 2002). With the advent of the Internet and the rapid progression of digitalization there is a reason to revisit basic assumptions and theories used to explain e-commerce and the adoption of channels in order to address the opportunities and potential for e-commerce in emerging markets. Growth strategies in emerging markets while earlier addressed through the lens of structure of market (Khanna and Palepeu, 2006), competitive rivalry (Ghemawat and Hout, 2008) and mode of entry (Elg, Ghauri & Tarnovskaya, 2008) did not focus primarily on digitalization of operations as a prominent growth strategy. Previous studies touch upon other factor that may act as points of influence such as supplier capacity, competitive structure of the market in terms of digital operations, acceptability of digital transactions in the business networks, capital and tech availability and affordability, etc., (Hoskisson, Eden, Lau & Wright, 2000). Other factors such as lower cost of operations in online setup or high resource demand in brick and mortar establishments may also be a deciding factor in the digitalization process. On the other hand Coussy’s (2009) characterization of emerging economies suggests that emerging economies by virtue of being latecomers to the digitalization phenomenon gain a distinct advantage over developed countries by learning from third party experience. Many digital organizations in emerging markets are born global and/or born click organisations that benefit from digital readiness right from the inception stages. Such organisations show a greater affiliation towards e-commerce portals than traditional establishments that must undergo a transitional phase. Thus, many emerging markets such as the BRICS nations have shown rigorous growth in B2B e-commerce especially in cross border trade. Mahadevan has also categorized the B2B market structure in terms of product description and value assessment, shown in Illustration 1.



Source: Mahadevan, 2002

FIGURE 1
CLASSIFICATION OF NEUTRAL B2B MARKET STRUCTURES

Relationship between organizational factors and theoretical adoption is explained theoretically using innovation and adoption research (Premkumar, Ramamurthy & Crum, 1997).

Technology acceptance model, infusion model and task-technology fit model are used to explain users' perceptions of technology and assume that the innovation adoption decision is based on rational decision-making (Gibbs and Kraemer, 2004).

Successful IT adoption relies on organizational readiness and appropriate IT infrastructure (Lacovou, Benbasat & Dexter, 1995). Conversely, studies done across countries have shown that business cultures do not support innovation in technology leading to low organizational readiness (Gibbs, Kraemer & Dedrick, 2003).

Size of the firm also defines the adoption of IT and Supply Chain Management Systems, since large firms have the IT resources and capabilities to adopt IT systems. It is also argued that small and medium sized firms in emerging economies act as inhibitors to adoption and use of e-commerce (Gibbs, Kraemer & Dedrick, 2003).

Extra organizational and organizational factors influence relationship and communication between corporations. Organizational factors that influence data sharing between organizations are: The nature of the industry, government support and national culture (Shore, 2001).

It was found that companies customize the web content displayed on their foreign website in accordance with the cultural values of the target country, but this adaptation is not yet extensively followed (Singh, Kumar & Baack, 2005).

In a 2007 study by Tan, Tyler & Manica, in China, the culturally influenced factors were explored in reference to adoption of business to business e-commerce. The broad themes in the study were related to internal trust, enterprise wise information sharing and attitude towards failure and change adaption. The culture specific factors were found to be a deterrent to wide adoption of e-commerce platform among the business-to-business sellers. The study also brought to light the variation in business and cultural philosophies of developed versus emerging economies (Tan, Tyler & Manica, 2007). A United Nations Industrial Development Organization report on e-commerce development in China mentions that Chinese government considers e-commerce development is an important instrument for economic transition and is constantly building up the infrastructure to support and promote e-commerce. The report has listed the major initiatives taken by Chinese government to promote e-commerce development within the country (Hongfei, 2017).

As per the study in Indian context, government policies, firm's culture and size, competition, market forces, etc. have a significant impact on information technology adoption decisions made by firms (Dasgupta, Agarwal, Ionnidis & Gopalakrishnan, 1999).

Based on the above review of literature, four themes were identified that affect the adoption of e-commerce-policy, culture, marketplace and organization. This paper studies and documents the factors under each theme that affect B2B adoption among sellers and assigns weights to these factors based on their relative importance in decision-making in context of textile industry.

RESEARCH QUESTIONS

In view of the literature review of past research studies in the related field, this paper aims to study the factors impacting the decision making in adoption of B2B E-commerce model in emerging markets. The key research questions addressed under the study are:

- What are the factors relating to policy, culture, marketplace and organization that affect the adoption of B2B e-commerce in Indian organizations?
- What are the challenges faced by Indian organizations in adoption of B2B e-commerce?

RESEARCH METHODOLOGY

Qualitative and interpretive methodology was used in accordance with the objectives of this research study (Miles and Huberman, 1984). Convenience sampling technique was used for selection of respondents (Marshall, 1996) from textile industry. The data was collected through semi-structured interviews with officials of organizations from their IT departments, CEOs, CIOs, etc. and Government organizations. Reports of previous studies, recorded documents of organizations and government departments were also referred. The interviews focused on information pertaining to organizations relationship with their suppliers and business partners, source of information about new suppliers, knowledge of existing B2B e-commerce platforms, willingness to adopt B2B e-commerce systems and hurdles in implementation, etc.

DISCUSSION AND FINDINGS

All the information collected from each organization was carefully transcribed and analysed in context with the factors pertaining to policy, culture, marketplace and organization and its importance on B2B e-commerce adoption decisions was studied, as shown in Table 1.

Themes	Factors	Importance in context of Textile Industry
Policy	1. Govt. policies supporting B2B e-commerce	Low
	2. Govt. subsidies and tax exemptions for B2B e-commerce	High
	3. B2B e-commerce Export Promotion policies	Medium
	4. Govt. portals matching International Standards	High
	5. Technical trainings for Suppliers/traders	Medium
Culture	1. Power distance	Medium
	2. Uncertainty Avoidance	Low
	3. Time Orientation	Medium
	4. Individualism v/s collectivism	Medium
Marketplace	1. Competitors	High
	2. Customers Attitude towards Digitization	High
Organization	1. IT Infrastructure	High
	2. Size of the firm	High
	3. Past Experiences	Medium

The factors that came up in the analysis of data and their importance with respect to the textile industry are explained ahead.

Policy

It was found that the government policies play an important role in attitude formation of organizations in textile industry towards digital media. Indian government has recently been actively promoting textiles sector through various initiatives, such as, 'Make in India', 'Skill India' and 'Digital India' campaigns. Government is providing all possible assistance to traders, suppliers, manufacturers, etc., under these campaigns. As a step taken towards Digitizing India and promoting exports, government has eased out the application process for exports by digitizing the entire process and quick issuance of export import code. Though, some found it difficult than paper application mode due to lack of computer knowledge among the traders.

"...government has digitized the IEC application process for our benefit as it saves time but it has become more difficult for people like us who have little knowledge of computers, we have to find out somebody who can do it for us..."

However, nothing remarkable has been done so far for B2B E-commerce promotion that matches international standards or is successful in encouraging suppliers and business partners towards adoption of B2B E-commerce.

"...there are certain platforms and government is trying hard to digitize the industry but the operating portals are of poor standards..."

"...if tax exemption or subsidy is given for trading through e-commerce platforms, then it might motivate a lot of businessmen to adopt such methods..."

Thus, government policies do play a role in adoption of B2B e-commerce but they are not solely responsible for decision-making. Government should realize that matching international standards is of crucial importance and that many traders and suppliers in India are not enough computer literate to be able to handle e-commerce systems. Therefore, focus should also be on technical education for them. Moreover, tax rebate/subsidy or exemption might act as a great incentive for suppliers and traders to opt for B2B e-commerce platforms.

Culture

India is known for its cultural diversity. National culture explains more differences in work related values than demographics like gender or age (Hofstede, 1980). We studied whether or not and in what ways do cultural factors influence the adoption decision of B2B e-commerce systems.

The four of five dimensions that came up in the study by Hofstede (1980) based on survey of 1,60,000 employees and managers across 40 countries are defined below:

- Uncertainty avoidance is defined as the degree of feeling uncomfortable with uncertainty and ambiguity that members of a society have.
- Individualism and collectivism is the extent to which a person sees himself/herself as an individual rather than part of a group.
- Time orientation is understood as the relative importance of 'here and now' versus 'future'.
- Power distance is defined as the extent of acceptance by members of a society that the power is distributed unequally in organizations.

In textile industry, there have been fewer efforts by government or top management or other associations to facilitate decision making on B2B e-commerce adoption. Most of the respondents were aware of the benefits of B2B e-commerce and understood that they need to adopt this in order to survive. The deterrent to adoption being the power structures of society or organizations to make such investment decision.

It was found that uncertainty avoidance attitude was prominent in most of the respondents as it is a typical trait of most Indians. Many textile firms have adopted e-commerce platforms or have at least tried to integrate it in the supply chain process specially to reach out to their retail customers. The textile industry being primarily production or manufacturing driven, efficiency is given more importance than responsiveness. Thus, more focus has been on cost reduction than automation of processes. Some firm find doing business electronically to be more risky than face-to-face and they also mentioned about building inter-personal relationships and trust with their customers that are factors of utmost importance when dealing is done on credit.

“...it is important for us to build a relationship of trust with our suppliers because most of the time the transaction is done on credit...for online customers nobody will give goods on credit...”

In India, Government and policy makers make strategic decisions and policies on long-term basis to bring about a positive reform over a period of time. Many of the respondents felt that they need to integrate backward or forward along the supply chain to ensure survival in coming times and B2B e-commerce would bring them closer to their customers by eliminating transaction agents.

It was found in the study that though most of the respondents showed collectivistic attitude for certain policy related and industry related issues. They believed that government initiative or formation of an association can bring about the positive change in adoption of B2B e-commerce by players in the industry. The highly competitive nature of the industry rendered the suppliers hesitant and insecure in resource sharing and knowledge sharing.

Marketplace

It was seen that while competitors played an important role in defining e-commerce adoption decision, they were not the most significant factor in decision making. Suppliers were found to be aware of the fact that their competitors having e-commerce systems have competitive advantage over them. Yet, many preferred the existing ways of interaction with their customers. Customers' openness and attitude to use e-commerce platforms was another important factor in adoption decision. Most of the traders were not sure if their customers will accept the innovation or will they lose them to their rivals. It came up that educating customers about the importance and advantages of e-commerce systems is of prime importance.

“...Customers might not want to opt for e-commerce mode of transactions or interaction...there is no guarantee...they might also not be much aware like many of us...”

Organization

The study reinstated the findings from previous studies that IT infrastructure and size of the firm plays an important role in adoption of B2B e-commerce systems. Larger organizations

have high investment and risk bearing capacities and therefore, are more open to adopt such changes. IT infrastructure shows the capabilities of an organization to adopt any ICT system. Past experiences also had somewhat importance in decision-making, as there were certain respondents who had tried e-commerce platforms and were not happy with the response. It is proffered that enlightening them with what went wrong in their previous decisions and guiding them in future to ensure their bad experience isn't repeated will help them adopt B2B e-commerce systems successfully.

CONCLUSION AND SCOPE FOR FUTURE RESEARCH

The findings of this research study have shown consistency with previous research in establishing that government policy, marketplace, organization and culture are prominent factors in adoption of digital platforms in B2B selling. This paper adds to previous literature in extending that when it comes to decision-making, all factors do not carry equal weightage with some factors are deemed more important than others. Of the four factors discussed in the study, government policy and roadmap for digitalization featured most prominently as important by respondents. This is again consistent with the current Indian government's strategic push towards digitalization. Similar impetus is observable in other emerging economies such as China where the government provides support in the form of digital infrastructure development, accessibility and affordability of internet services, subsidies, trainings and skill development to digital start-ups and entrepreneurs. The export promotion councils for textiles also added as mentors in promoting e-commerce operations to broaden global reach of Indian textiles. Technical handholding and financial support from the government were seen as key factors by the respondents in their digitalization process. However, it is to be noted that the factors may often show an unsegregated influence due to confluence. Cultural factors specially cannot be studied in isolation as they may be influenced by marketplace, organizational and policy factors. The same holds true for other factors also. The study did reveal that the aforementioned factors under the four themes have impact in varying degree to the process of digitalization in B2B commerce. The study was limited by focusing on the textile industry alone. Future studies may choose to undertake comparative analysis of these factors and themes across various sectors. Other themes such as nature of the business and organizational design, leadership style etc. may also be explored as having relevance for digitalization process in B2B commerce.

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