Investigating Effects of E-Commerce on Customer Behavior in Home Businesses in Kermanshah, Iran

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**ABSTRACT**

E-commerce is one of the most observable approaches in the digital economics. This paper attempts to study the effects of Information Technology and commercial intelligence on home business in order to form the management of direct contact between corporations and customers and the relationships between using e-commerce and important variables such as satisfaction, confidence and loyalty of the customer. Totally 100 questionnaires were distributed among the people who had home business in Kermanshah city, Iran and results were analyzed in SPSS. Results showed that enhancing contact with customer in e-commerce brought about stable competitive advantage and decreased costs and also it made entrepreneurship prosper, organizations were found to obtain an accurate and timely understanding of the market situation.

**INTRODUCTION**

Today, rapid development of Information Technology has created new ways of collaboration of corporations and customers. Regarding the importance of information in organizational management and also the development of Information technology, a number of commercial applicable systems have been developed which enable corporations and organizations to take decisions with a higher level of knowledge and productivity (Sanaye’ei, 1999). In the current market which is severely competitive and increasingly precarious, the quality and timeliness of business intelligence (BI) of the organization could not only signify the difference between advantage and disadvantage, but also explain the difference between survival and bankruptcy (Bahrami, 2012).

Business intelligence is one of important concepts of organizational management and has become an advanced institution in the world markets which provide all activities and processes with advantages. Businessmen and organizations always try to be informed of what their rivals are doing. A wide range of technology exists for collecting information and knowledge in a level of organization and also for helping the process of business intelligence through analysis of this information by forming an inquiry (Bahrami, 2012).

Most people, who buy online, prefer those websites which present the customer-friendly products and services. This suggests the importance of customer-friendliness in establishing electronic loyalty. The active participation of the customer in designing product develops a more efficient and powerful relationship with the commercial brand which in turn results in the loyalty of commercial brand (Sha'abanollahi et al., 2010). In home business and Internet entrepreneurship, the product loyalty and repurchasing should be taken into account since they are considered among the main factors of marketing. The main features of electronic commerce and home business are facilitating the commercial processes, removing the unnecessary processes in commercial tasks and consequent decreasing of costs, improving access to market and increasing diversity for customers. Lack of information about e-commerce and communications infrastructures, low internet speed, software and hardware problems may be considered the problems in this kind of commerce in Iran. However, The impact of this kind of commerce on the rapid access to information, ordering products quickly, bringing more variety in comparison with the traditional method have made customers to bias toward this kind of commerce. Therefore, in this study the impacts of this kind of commerce on the behavior of customers will be studied and so the main problems to be discussed in this research involve the investigation of the following factors:

a) Which effects do the confidence, satisfaction and loyalty parameters have on customer's tendency to electronic purchase in home business?

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b) How improving the contact with customers in e-commerce leads to loyalty and stable competitive advantage and decreased organizational costs?

c) Which role does confidence in business intelligence play in the field of home business and market changes?

Review of Literature:

E-commerce denotes doing commercial exchanges through networks especially the Internet. E-commerce goes beyond having an Internet website and involves ordering, doing employment tenders, marketing and exchanging information which is carried out using information technologies (Elahi et al., 2010). Accordingly we try to use the following researches and papers for investigating the obtained results of other studies and reviewing literature of the study in order to provide a guide for new studies.

<table>
<thead>
<tr>
<th>No</th>
<th>Title of study or research</th>
<th>Author and year</th>
<th>Methodology</th>
<th>Statistic sample</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Information Technology(IT) as An Improvement Tool For Customer relationship management (CRM)</td>
<td>Mahdi Bahramia, Mazaher Ghorbani b, S. Mohammad Arabzad (2012)</td>
<td>A research paper with the library field method</td>
<td>The modern Information Technology tool is used as an input for gathering useful information from the customers and then the data are collected and the needed procedures are conducted in the section of contact with customers.</td>
<td>Results showed that improving contact with customers caused a competitive advantage and a decrease in organization cost.</td>
</tr>
<tr>
<td>2</td>
<td>Innovation In Market Management By Utilizing Business Intelligence: Introducing Proposed Framework</td>
<td>Mahdi Bahramia, S. Mohammad Arabzad, Mazaher Ghorbani (2012)</td>
<td>A research paper with the library field method</td>
<td>The theories of such scientists as Michael Porter are used and the functional components of business intelligence is studied and results are obtained through library findings and diagrams.</td>
<td>Business intelligence makes organizations to have a correct and timely understanding of market situation including income increase, getting new competitive opportunities, having more time for marketing, rising the customer satisfaction</td>
</tr>
<tr>
<td>3</td>
<td>Repurchase Intention in B2C E-commerce: A relationship Quality Perspectiv</td>
<td>Yixiang Zhang a,b, Yulin Fang c, Kwok-ker Wei c, Elaine Ramsey d, Patrick Mcole e, Huping Chen (2011)</td>
<td>A research paper with a statistic questionnaire (descriptive-survey)</td>
<td>10 employees and 12 university students are selected as samples; They are asked some questions about their purchase and e-mail address</td>
<td>Repurchasing by customers is rooted in their attitude toward the established relationship between seller and customer and also their mutual confidence and satisfaction</td>
</tr>
<tr>
<td>4</td>
<td>Evaluation of the effect of mark origin on the special value of commercial mark in the customer's opinion</td>
<td>Dr.Javad Mehrabi, Ayyub Khoshmanzar; Acceptance date: 14/4/1390 (2011)</td>
<td>A research paper with a statistic questionnaire (descriptive-survey)</td>
<td>The students of Azad University, Ghazvin branch are considered as statistical population of this study and each hypothesis is analyzed by the correlation coefficient and significance level</td>
<td>Information about the commercial mark is assumed an important source of decision making which establishes the competitive advantage for producers</td>
</tr>
</tbody>
</table>

E-commerce has developed important opportunities for corporations through which they could expand their market share and enter into the international market. This is applicable with the least cost and the minimum investments. In the world of e-commerce, corporations are able to have more contact with both producers and customers, and have access to more resources with the suitable prices and less cost and advertise their commercial brand among rivals by maintaining their customers.

Developing Theories and Conceptual Model:

Effective Factors in Customer Behavior:

Cultural, social, personal and psychological factors have many effects on the customer behavior. Although marketers cannot have any control over these factors, this does not mean that they may be ignorant of them (Cho, Namajae, Park, Sangyuak 2001). The customer is the most important side of the business and corporations should know customers well for their success; also, for home business which is a kind of economic activity that one starts in his living place by home equipment, the customer's satisfaction and confidence should be provided assiduously (Elahi et al, 2010).

The Functional Elements in the Market Management Process:

Intelligent corporations often develop a strategic system of marketing in business field in order to supervise the market changes and align with these changes and use encouraging rules. The whole process of market management consists of 4 main stages including:

Market Analysis:

The environment is complex and permanently changing; it raises new chances and threats at the same time.
A corporation and its strategic systems should always be under supervision. The environment needs a lot of information, including those of customers and how they should purchase. This information includes intelligence systems and markets studies and evaluation of organizational consumptive markets. It is necessary to know market especially those who generate similar products and remove the defects (Jahromi, 2012).

Selection of the Target Markets:
There are different corporations which create powerful diversity in generating similar products according to customer's taste and no corporation is able to offer services to all dissatisfied customers. Any corporation which intends to exploit its potential capabilities best and select the best position in market, needs to study 4 stages of measuring and demand predicting, market sharing, target market and position in market (Bahrami, 2012).

Combination of Marketing Elements:
One of the basic concepts in modern marketing and home business is the very concept of combining; a set of variables which are involved in market and their purpose behind combining is to respond to requirements. Due to the effect of this combination on market some tools are organized. This combination includes product designing, product distribution, pricing and advertisements in new key markets in business (Bahrami, 2012).

Considering Brands and Activities of Rivals:
This stage involves the analysis of rivals and competitive policies in market and programming, applying and marketing organization and controlling the program. Among the important aspects of the great companies is analyzing their rivals who continuously determine the price for products and distributing and advertising methods and promote the competition; because organization have customers and feelings toward company is a serious subject (Jahromi, 2012).

New Technologies Protecting Customer Relation Management (CRM):
The development of Information Technology leads to changes in different areas of marketing and business environment and home business makes one to get income without leaving home; so the advantages of computerized programs are used here.

E-CRM:
It is one of the newest versions of the applied software of CRM which is related to the real value of electronic business. E-CRM helps the corporations in improving the efficiency of their interactions with their customers. It demonstrates the use of electronic tools and platforms for conducting the corporations' tasks and enables the institutions to offer services to their customers more rapidly and more accurately in a wide time and place range and with less cost and also enables them to customize the products and services for the customers.

M-CRM:
It is a new type of CRM which works by wireless; a device called CRM is based on mobile or M-CRM. From a technological perspective, Information Technology is seen as an empowering entity which provides the possibility of promoting close contacts with customers for the organizations (Bahrami, 2012).

Business Intelligence:
BI includes such features as collecting, processing and accumulating information available to all the organization levels regarding their needs and helping them in forming future and protecting them against competitive behaviors. The term business intelligence of collecting information is related to rivals and environment for providing and maintaining the competitive advantage. Also in developing the competitive advantages it forms a purposeful supervision over the strategic decisions in competitive environment for activities in organization. Information analyses depict a correct understanding of the current state and future commercial perspective of the organization (Castro, Carmen Barroso, 2007).

Different Factors Important and Effective in Arriving at Business Intelligence:
- The degree of focus on the vocational skills in the core of business intelligence and preventing its distraction.
- Developing appropriate infrastructures for business intelligence among strategic goals of competitive organizations.
- Improving the intelligence through programming of organization and updating the site for attracting more customers (Bahrami, 2012)

The main components of business intelligence:
data resources:
Resources of data could be databases (information centers), historical data, external data, for example, from
market research companies or from Internet or information from the present data in the current environment of datawarehouse. Data resources could be reciprocal information sources or any other data structure which follows the level of business applications (Bahrami et al., 2012).

Data Warehouse:
Data warehouse makes it possible to promote data physically through managing various experiences of organization for integrating, classifying and inquiring the tasks. It is defined as a set of using integrated data for technical decision making for company in a wide level in a special area and involves the current information not just only a summary of them. Data warehouse is designed so that changing, removing or adding could be done rapidly to accelerate the statistic operations and report-receiving (Cassivi, 2005).

Data Offering Center:
A data offering center is described as a set of organized subjects for protection of decisions based on a section’s needs. Financial, marketing, selling affairs, each has a special center of data-offering. The data-offering center for marketing has little similarity with data-offering center of any other section. Perhaps the most important sections are hardware, software, data and programs sections which form data-offering center (Bahrami, 2012).

Inquiring and Reporting tools (OLAP):
Statistic analysis, prediction and data-mining which provides multi-dimensional perspectives and a summary of business data which are used for reporting, modeling and programming for business optimization. Reporting software generates associated perspectives in order to inform the management of its business state. Also, determining the production strategy would be one of the most important effects of electronic commerce on management (Merrilees, Tino, 2007).

The Final Factor in Customer Behavior:
In some organizations, CRM is only a technology which improves the organizational activity through developing the automation tools for selling and marketing. Consequently, effective contact with customers and a shared customer-centered culture are developed which at last guide the organization in achieving the long-term advantages (Bahrami, 2012). The closer customer’s relation is with corporation, mutual confidence becomes deeper. Therefore, the issue of customer satisfaction is of special priority (Elahi et al., 2010).

Customer Satisfaction Model:
Customer satisfaction is the most important issue for corporations. Satisfying customers leads to the achievement of other goals in market, such as increased benefits and market share and enhanced quality. Researchers believe that customer satisfaction has close relationship with loyalty; there is strong relationship between the brand of business product and satisfaction level of customers with the intention of repurchasing and there is much evidence for supporting the causal relationship between loyalty and satisfaction.

Brand Loyalty:
When a customer continues to buy a commercial brand, this is an instance of brand loyalty. The commercial brand origin is a very important variable which might influence the specific value of the brand. The marketing managers in international trade are cognizant of the importance of this issue and recognize the sources of special value of commercial brands (Bahrami, 2012-CRM).

Customer Loyalty to Repurchasing:
Customers' continual purchase from one shop is called customer loyalty (JOSIAH, Royce -1995). Of course, a satisfied customer tends to be more loyal to a commercial brand or shop in course of time than a customer whose purchasing is due to such factors as time or information limitations (Collin, A &Ivanovic, 1997).

Confidence and Commitment:
Confidence and commitment are important factors in relations between customer and seller (Collin, A &Ivanovic, 1997). Confidence, that is, being sure of an individual or system's reliability on the basis of obtained
results in a way that takes the form of belief in other side, has received increasing importance (Levy, 2001). In a virtual organization, confidence is the most important issue which is placed on top of management priorities.

Introducing the Proposed Framework:

All Information Technology tools which organizations utilize in their business processes are defined as "inputs". It is the input channels of contact with customer like web, phone centers that are employed in collecting customer data. In process stages, raw data sent to home companies from different input channels through this technology are analyzed and processed by experts. In "output" stage, very useful and valuable results and data are provided. It is necessary for companies which use technology for more effective relationships with their customers to maximize these output benefits.

Fig. 1: the influence process of electronic commerce on customer behavior model.

In the world of electronic business, many factors influence the decision to purchase through websites. The virtuality of the Internet network, customers’ low confidence in virtual purchasing and etc. result in customer’s unwillingness to do electronic purchase. The tendency of people to enter the new commercial world increases with use of technology; also through permanent feedback, removing defects of service system, selling and delivering products timely, electronic payment method, returning the defected product and etc, customer loyalty and corporation brand purchasing could be achieved.

Methodology of Research:

The research model was studied concluding upon the literature of the subject. 100 questionnaires were distributed among centers which have home business in Kermanshah and H0 and H1 were tested by means of SPSS software. In this paper, satisfaction is the most important variable in dealings; in electronic commerce due to its virtuality, confidence is also an important issue and the relation between confidence and using electronic commerce should then be studied. Loyalty is a relationship between corporation and customer which in its highest level, customer becomes the partner of corporation and supports it. Therefore, this variable is of high importance in electronic commerce because of its possible effects on using this kind of commerce. It could help entrepreneurship and home business.

The Research Hypotheses:

Hypothesis1: There is a significant relationship between using e-commerce in home business and customer satisfaction.

Hypothesis2: There is a significant relationship between confidence in business intelligence in home business and market changes.

Hypothesis3: There is a significant relationship between e-commerce and loyalty through competitive advantage.
**Research Variables:**
In this research, the dependent variable is the amount of using e-commerce which was assessed through a questionnaire with questions including: the amount of purchasing from virtual shop (through Internet), availability of Internet and evaluation of electronic purchase versus traditional way of purchasing. The independent variables of this research include: satisfaction, loyalty and confidence of customer. Customer satisfaction was assessed as the component of satisfaction level from electronic purchase.

**Data Analysis and Information Collecting Method:**
In this research, the descriptive-correlational method was employed in order to test the hypotheses about relationships between the variables, i.e., confidence, loyalty and using electronic commerce. Field data was collected via a questionnaire.

**Statistic Population and Sample:**
Statistical population of this research includes people having a home business such as computer application production, handicrafts production and so on which have had the experience of electronic sell and buy. SPSS software was used for identifying sample volume and the obtained results were presented:

**Hypothesis 1:**

<table>
<thead>
<tr>
<th>E-commerce Consumer Satisfaction at business-home</th>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum of Squares</td>
<td>df</td>
</tr>
<tr>
<td>Between Groups</td>
<td>23.950</td>
</tr>
<tr>
<td>Within Groups</td>
<td>110.000</td>
</tr>
<tr>
<td>Total</td>
<td>133.950</td>
</tr>
</tbody>
</table>

The dependent variable of this hypothesis and other hypotheses is level of using electronic commerce which is assessed through components such as amount of access to Internet and purchasing from the virtual shop (via Internet) and the attitude toward electronic purchase in comparison with traditional purchase. In order to test the first hypothesis of research, the statistic hypotheses were developed as follows:

H$_0$: There is no significant relationship between using electronic commerce in home business and customer satisfaction.

H$_1$: There is a significant relationship between using e-commerce in home business and customer satisfaction.

Conducting Pearson test of correlation showed that in significance level of $\alpha=0.05$, there was a positive correlation between using electronic commerce and customer satisfaction; that is, the more customer satisfaction could be provided, electronic commerce is used more.

**Hypothesis 2:**

<table>
<thead>
<tr>
<th>E-commerce at business-home and market developments</th>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum of Squares</td>
<td>df</td>
</tr>
<tr>
<td>Between Groups</td>
<td>178.620</td>
</tr>
<tr>
<td>Within Groups</td>
<td>5021.380</td>
</tr>
<tr>
<td>Total</td>
<td>5200.000</td>
</tr>
</tbody>
</table>

The second hypothesis suggests that there is a significant relationship between confidence in business intelligence in home business and the market changes. For testing the second hypothesis of research, these statistical hypotheses were developed: H$_0$: there is not any significant relationship between confidence in business intelligence in home business and the market changes. H$_1$: there is a significant relationship between confidence in business intelligence in home business and the market changes.

Conducting Pearson correlation test indicated that in significance level of $\alpha=0.05$, there is a positive correlation between using electronic commerce and customer's confidence but its value is low which signifies that not all people believe in this kind of electronic commerce and payments, yet. So, it is recommended that it should be paid much more attention through advertisements and other means.

**Hypothesis 3:**

<table>
<thead>
<tr>
<th>E-commerce and loyalty by creating competitive advantage</th>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum of Squares</td>
<td>df</td>
</tr>
<tr>
<td>Between Groups</td>
<td>22.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>101.000</td>
</tr>
<tr>
<td>Total</td>
<td>123.000</td>
</tr>
</tbody>
</table>

The third hypothesis states that there is a significant relationship between electronic commerce and loyalty.
The independent and dependent variables of this research are loyalty and amount of using electronic commerce, respectively. In order to test third hypothesis of the research, statistical hypotheses were made in this way: H0: There is no significant relationship between using electronic commerce and loyalty along with competitive advantage. H1: There is a significant relationship between using electronic commerce and loyalty along with competitive advantage. Conducting Pearson correlation test showed that in significance level of \( \alpha=0.05 \), there is a positive correlation between using electronic commerce and loyalty; the more loyal customers are to a commercial brand or a product (even in an electronic method), they will purchase it more again.

**Fig. 2:** The model of relationship between using electronic commerce and satisfaction, confidence and loyalty

*Conclusion:*

Corporations with home business generally believe that electronic commerce benefits them various advantages; therefore, it could be said that these corporations are aware of the importance and advantages of electronic commerce but need some hardware and software helps; especially in Iran's market where this kind of business is new: in this regard, attentions should be paid to business intelligence and developing electronic and intelligent business corporation. Generally, the advantages of perfect and fundamental application of business intelligence system could be summarized as: 1- Increasing reliability of strategic decisions 2- Correcting the multilateral communications within organization 3- Increasing the knowledge of customer attraction market. Enhancing customer satisfaction through CRM, increasing the speed and agility of the organization, decreasing the costs of decision-making for organization, more convenient and more rapid communication with customer, speed of payment and liquidity (Jahromi, 2012). Direction analysis indicated that the factors which influenced using electronic commerce most included: organizational readiness, delivery speed as an electronic business advantage, market dynamicity, the capacity of organization for innovation, electronic business risking, attracting the confidence of customer. More profitable output is expected by innovation and creativity in Information Technology and using CRM. Developing marketing communications with customers depends on how much marketing through electronic commerce is efficient (Bahrami, CRM 2012). Home companies could generate products based on customers' needs and expectations and by using Information Technology and through saving information related to customer and via advanced analysis of these information such as software types, making and distributing false jewelers and artifacts and so on. Customer is the main capital of a corporation; securing his satisfaction in market leads to increased profit, increased market share and enhanced quality. The most important measure to establish loyalty to a product or business brand is having contact with customer. In the technology of communication and information, intra-organizational stimulators, cost saving and electronic business growth of organizations and using electronic intelligence leads us to an appropriate tactic for attracting, maintain and keeping loyal the customers. In electronic business and home business, there can be seen increased diversity for customers, more freedom and authority, more flexible work hours, more convenience for raising children, less financial risk and etc. Also, the features of customer purchase play an intermediary role in influencing the customer understanding of marketing mix against our rivals so that this influence upon the components of brand value of products has been approved and as a result, product value in competition with other products will increase and so this could be a solution to the current challenges in the economics of country.

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