

# Modelling the Consumer Behavior with Respect to Human Computer Interaction Factors (HCI) which Affect the Web Site

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**Abstract**— This paper investigates the effect of Human Computer Interaction factors to buyers' online purchasing behavior. Agent based model has been introduced and it consists plots to display usage of websites by people .Net logo is the backbone of this model. The effect of consumer reviews and people who buy in a rush and people who buy in normal condition are considered. Usability is the major link between Human Computer Interaction and the online purchasing intention. This study basically done for three major online reading material purchasing websites. Moreover, this study helps to not only organization but also consumers to interact with the suitable and better web sites.

**Keywords**— Agent Based Modelling, Human Computer Interaction (HCI), Online Purchasing

## I. INTRODUCTION

Through the evolution of technology, internet technology appeared during the last quarter of the 20th century. It influenced all parts of human lives frequently in a short time. Moreover, the internet is used for commercial purposes and it is the base of e-commerce concept. E-commerce is defined in the Oxford dictionary [2016] as commercial transactions conducted electronically on the internet. Most of the businesses are currently engaged in utilizing the internet to sell products and services. It offers the opportunity to expand business through emerging technologies. So that businesses have realized the importance of the internet and e-commerce has become more popular in the business context [4]. Through the growth of online shopping, corporations spend millions of dollars to create and maintain the corporate websites to face the competition in the business environment [1].

Different types of people interact with e-commerce websites to fulfill their different purposes according to their wired lifestyle. This is called as online shopping. Consumer behavior in online shopping is continuously changing due to Personal and environmental factors, Marketing factors and web experiences factors. Furthermore, these factors can be named as consumer characteristic, Customer concerns in online shopping, and Human Computer interaction factor [3]. Human Computer Interaction (HCI) is a discipline concerned with the study, design, construction and implementation of

human-centric interactive computer systems [5]. Furthermore, it can be defined as the process of investigation and tackle all issues related to the design and implementations of the interfaces between human and computer. Usability is the core concept derived from the Human Computer Interaction (HCI). It confirms the system is efficient, safe, utility, easy to learn, easy to remember, easy to use and easy to evaluate.

Agent Based modelling is conceptual modelling of autonomous decision making entities. It helps to simulate behavior and actions of agents with interacting each other's. The heterogeneity of agents across a population and the emergence of self-organizations are the two unique features which agent based modeling have. It also offers a way to model social systems [2].

## II. METHODOLOGY

The intended model development is executed through a step by step process. The initial step of the model development is being the systematically review the past literature. it will help to discover and find the studies that have been done already. Furthermore, it helps to identify the factors influencing the consumer to interact with the online purchasing called as Human Computer Interaction.

Human Computer Interaction factors are also identified after review the literature. Simple of the website, Useful of the website and accessible of the website are the three factors which are include in Human Computer Interaction. Moreover, literature has recognized usability is derived from Human Computer Interaction and it confirms the system meet the Human Computer Interaction factors. Furthermore, it identifies the consumer reviews and rush of the people are also affect to change their online purchasing behavior.

On model design stage, prototype has been design using Human Computer Interaction factors and other environment factors which behave to people in the agent based environment. Designed prototype has been solved the problem which identified in existing phase. The problem is the consumer online purchasing behavior changing according to the different human computer interaction factors which has in web sites. So this problem includes the behavior changing of people. Therefore, the solution has been done through agent

based modelling other than simulation modelling, such as discrete -event simulation or system dynamics. This simulation agent based model has identified people as its agents. Moreover, it has used three websites which are competitive to reading material selling online. For that Human Computer Interaction factors changing is better to continue the websites. So this solution is to answer for that and it has been helping with websites and also people to interact with the most powerful website. People are the agents who behave to the changes which has done for the websites.

Model development or model implementation is the final stage of this simulation study. The design prototype has been made reality through this stage. For that firstly selects most suitable software for developing this prototype. Agent based modelling has been done through general, all-purpose software or specially designed software and toolkit. Therefore, Net logo is the suitable software to develop this simulation project. Net logo is special programmable software in a multi agent environment.

Through that software, a prototype has been developed little by little. Different interface item has used to design the interface, in addition to that backend of this project developed using different global, local variables.

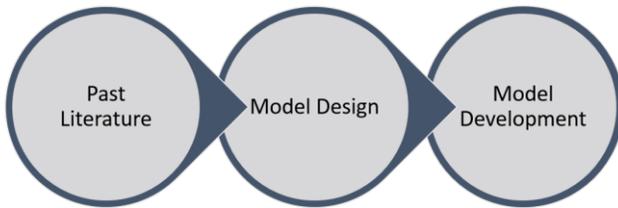


Fig. 1 .Methodology of the study

### III. RESULTS

The Performance of the agent based model on consumer online purchasing behavior changing according to the Human Computer Interaction Factors which embedded in websites has identified as the results of the study. To best of the results, assumptions are made in the designing stage of the model development project. The assumption is preferences to the all three websites are same and behavior changing randomly when changing the factors.

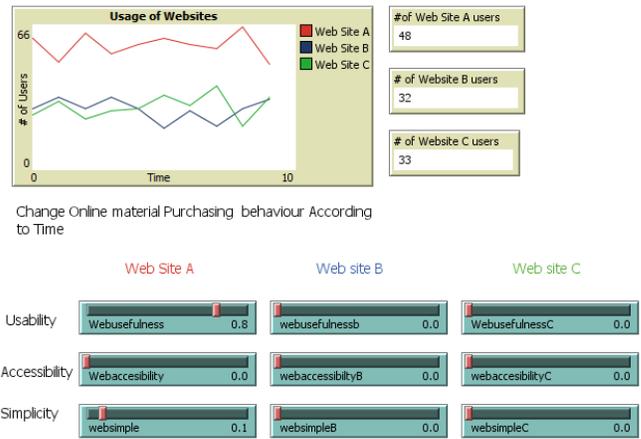


Fig. 2. Usage of websites when change the usability of web site A

Figure 2 has been shown the results, when change the usability of web site A. Moreover, it has displayed when increasing the usability of website, A, usage of website A has been increased.



Fig. 3. Usage of websites when change the accessibility of web site A

Figure 3 has been shown the results, when change the accessibility of web site A. Moreover, it has displayed when increasing the accessibility of web site, A, usage of website A has been increased.



Fig. 4. Usage of websites when change the simplicity of web site A

Figure 4 has been shown the results, when change the simplicity of web site A. Moreover, it has displayed when increasing the simplicity of web site, A, usage of website A has been increased.

Therefore, this change can be made to the other websites and usage of other websites which has been changed its factors are increasing also.

#### IV. CONCLUSION

At present many of corporate entities spend millions of dollars not only to design, but also to on web sites called as E commerce web sites. Customer reaching of these web sites is mainly depending on usability and Human Computer Interaction (HCI) which are lacking in the majority of E commerce web sites.

According to the study, it has identified three major human computer interaction factors and its effect to change the consumer interaction with e commerce websites. This behavior changes not only those factors which embedded in websites, but also their different norms and preferences. So people behavior changes randomly.

Human computer interaction factors, that means usability of the website and products are affected to change consumer product choices. Not only that, but also past experiences and environmental factors related to online purchasing also affected to change the buyer's mindset.

According to this study, it finds out web usability, consumer characteristics are major factors to influence the online purchasing intention in a different way.

#### V. FUTURE WORK

According to this study is only focused to the human computer interaction factors and it affect to the consumers buying

intention. Agents are effected for consumer reviews and those reviews are the primary data for this study.

This study has only made results about number of users use the websites, when change the websites Human Computer Interaction factors. So it has not focused data creation for future propose related to consumer experiences when change those factors.

In Future study will be focusing to generate online consumer reviews through this model and this model will be developed to fulfill this area.

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