Chapter 12

Machine Learning Approach to Detect Online Shopping Addiction and Study the Influencing Factors for Addiction

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ABSTRACT

Due to busy lifestyles and technological development, online shopping has grown rapidly. At the same time, the tendency to become addicted to online shopping has increased. There are significant differences between the behaviours of addicted and non-addicted people towards online shopping. The main purpose of this research is to create a machine learning model to detect this addiction and identify various e-commerce related factors that contribute to this addiction. For this research, 511 primary data were collected from online shopping users via an online survey. The questionnaire consisted of 78 questions, including their behaviour and motivation towards various features and facilities in the online shopping stores. The authors used the information gain feature ranking technique to select the most relevant features in the dataset. The models were trained using selected 11 features and 70% of data from the collected data sample. Among all the developed models' ANN showed the highest accuracy of 91%.

INTRODUCTION

Because of the pandemic in past years, millions of people worldwide turned to online shopping to buy the goods they usually buy in everyday life, like household supplies and groceries. As a result, telephones and laptops have become a haven for commercial hygiene. But for some people, online shopping is gradually evolving from an easy consumer strategy to harmful behavior (Cottier, 2021). Addiction to online shopping extends the general addiction and falls into one of the five significant addictions. Like all other addictions, the adverse effects of uncontrollable behaviors are signs of Online Shopping Addiction (OSA). Over time, the mental satisfaction or pleasure gained from online shopping becomes more important than relationship problems, financial obligations, and sometimes even people's jobs (Clark & Calleja, 2008).

With the advent of the internet, human behaviors and commercial activities and the habits and addictions of individuals have changed. With the rapid growth of smartphones and e-commerce, online shopping has become more popular. One of the reasons people become addicted to online shopping is the feeling that "the whole world serves me". It helps to increase their sense of attention and relax their emotions (Hou & Yang, 2021). Two major factors contribute to online shopping addiction. The first one is that they choose online shopping for entertainment. The second is practical shopping, where online shopping is selected to buy what they want (Günüç & Keskin, 2016).

There are three main factors that vulnerable people to online shopping addiction.

i.   Willingness to buy goods anonymously.
ii.   Willingness to get instant gratification.
iii. Preference for a wide range of items.

Studies show online shoppers are at higher risk for Buying Shopping Disorder (BSD). The convenience and quickness of the online shopping environment feed the addiction part in our brains. Online shopping allows consumers to make secret and unobserved purchases. People who suffer from Buying Shopping Disorder is regretful or ashamed about their purchasing habits and may experience social anxiety. So, they try to avoid social interaction and crowded stores. Therefore, the online shopping environment provides a comfortable environment for people with BSD (Correa, 2020).

Addiction to online shopping can be predicted by considering several factors like emotions, money spending patterns, interpersonal relationships, and buying behavior on online shopping platforms. Online shopping stores have many features and facilities to provide higher customer satisfaction and retention, such as promotions, offers, rewards, product delivery, bids, online payment, recommendations, etc. These factors also have an impact on online shopping addiction.

With the rapid development of e-commerce, everyone can use online shopping without the age gap in the new internet era. It has become an indispensable consumption pattern in the modern world. Online shopping is a rising trend in the 21st century. Modern technology has made online shopping easier, and everyday shoppers are likelier to fall prey to online shopping. Online shopping sites like eBay, Amazon, and Etsy facilitate customers by providing mobile online shopping applications. So that consumers can place orders within minutes, no matter what they are doing and where they are, this 24/7 availability of online shopping attracts more people around it. In addition, e-commerce retailers attempt to use marketing tactics to motivate their customers to buy products they don't need. These marketing tactics,

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