

## Drivers of Digital Voice Assistant Adoption: Special Reference to Food

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### ABSTRACT:

Digital voice assistant is an Artificial intelligence based revolutionary technology. It provides opportunity to researchers to explore various factors which direct the adoption of this technology. Digital voice assistant are utilized for multiple purposes. Food and food related queries are also entertained by DVA. This research paper is conceptual in nature. This study explore technology acceptance model, anthropomorphism and unified theory of acceptance and use of technology with the special reference to food. These devices are more popularized by the concept of anthropomorphism. These device acts as a companion to the users which attract users. Voice based devices are still in the introductory phase so there is a need to explore driving force for influencing users for digital voice assistants.

**Keywords:** artificial intelligent, Digital intelligent assistant, digital voice assistant, artificial personal assistant

### INTRODUCTION

World has witnessed revolutionary up gradation in technology. There are number of devices which based on Artificial intelligent and internet of things. Digital voice assistant are the devices which assist users with its special feature “anthropomorphism”. There are multiple devices such as Apple Siri, Amazon Echo and Google assistant in this domain. World are witnessing turning point that more online quarries regarding food items are coming from these devices. Digital voice assistant are the machine which act, think and respond (Bowen & Morosan, 2018). These devices work with the help of voice of the users and having a human intellect (Huang & Rust, 2018). There is estimation that DVA would be more in use in coming time (Kumar et al., 2016).

Digital voice assistant is an application that uses voice of the users and personal information for assisting the users in suggesting and executing actions. DVA provides all the information regarding various domains. People are also exploring food related information through it. People usually asking queries related to food, recipes and information regarding ingredients and spices.

These digital intelligent assistant provide all the relevant information such as hotel reservation, most important destination, tickets information etc. IPAs are now integrated into

mobile devices, homes and various places (Shoot L., 2018). The majority of iPhone clients used Siri for executing their online task. IPAs are using machine language, natural language and Artificial intelligence to access information for executing user's task. Intelligent personal assistants enabled in phone are more expected to be used by old one and have good amount of knowledge in this domain. Users are confident enough to use such devices if they are well versed with the technology (Y. Liao et al., 2019).

The uses of AI based devices are increasing in number and a time will come when these devices may potentially substitute conventional methods of dealing with customers (Marinova et al., 2017). There are numbers of benefits served by IPAs to users but privacy and security issues also exist. User's behavioral data are transmitting to the cloud server by these devices. There are huge requirement to determine factors which give detail about the adoption of such devices (McClean and Osei – Frimpong, 2019). Every new technology has to overcome from resistant to change attitude (Chi, Denton and Gursoy, 2020). Digital voice assistant are such kind of device which provide every possible solution with the feeling of companion to the users but still, only 30% users believe the same (CGS 2019 report). There is a need to study more in understanding the role of digital voice assistant (MSI, 2020).

## **RESEARCH METHODOLOGY**

This study will explain the user acceptance of digital intelligent assistant. This is a conceptual paper. This paper utilized secondary data for understanding the facts related to the subject under study. Secondary data is taken from various reputed journals. Technology acceptance model, Unified Theory of Acceptance and Use of Technology model and role of anthropomorphism in enhancing the adoption of artificial intelligent devices with special reference to food related queries will be the main focus of the study. In this study, we cover recent researches on digital voice assistant.

## **LITERATURE REVIEW**

Digital intelligent assistant is the Artificial intelligence based technology which gives rise to a new market for the upcoming years. It is indispensable to determine the key factors that would accentuate the intention to access such new devices. There are only few studies which discuss the factors motivating the users for accepting intelligent personal assistant for online activities. There is an imperative need to determine factors that can enhance the acceptance of such technology in India. Very limited studies have been conducted in India concerning digital intelligent assistant, some of which determine the positive impact of human like robots (Mori, M, 1970; Mori, M, 2012) which leads to the determination of the fact whether or not this phenomena is applied to digital intelligent assistant. Computers are considered as social actors which incorporate human like attributes (Nass, C. et al., 1994).

There are different theories available for understanding the adoption behavior of users. One of the famous theories for the same is Technology acceptance model (TAM). TAM (Davis, 1989) is utilized for determining the adoption behavior of users. TAM is considered as a

modified form of TRA. The determinants of user acceptance provided by TAM provide a good explanation along with the prediction of outcome. TAM has introduced two prime variables perceived usefulness (PU) and perceived ease of use (PEOU). PU has been elucidated as belief which states that employing any new device will amplify work performance. PEOU is a factor which explains the level of effort free contribution provided by the new technology. PU and PEOU are statistically definite variables for explaining user acceptance of new technology (Swanson, 1974). Technology usage determined by behavioral intention but it jointly define acceptance of new technology with the help of user's attitude (A) towards new technology and perceived usefulness (PU). High perceived usefulness is a main construct in elucidate a positive user-performance relationship. PU has a positive effect on attitude and behavioral intentions of users (Davis et al, 1989; Venkatesh, 2000; Venkatesh & Davis, 1996, 2000). TAM and its various modifications provide comprehensive approach for understanding the various factors that affect IPA use. There are a number of studies which utilized TAM in the domain of adoption of digital voice assistant / personal intelligent assistant (Lunney et al.,2016; Joo and Sang, 2013). Utilitarian benefits such as perceived usefulness and ease of use impact positively actual use of the device in the case of in-home voice assistants (McLean and Osei-Frimpong (2019). TAM's domain was not widen enough to locate external contextual factors inform technology acceptance (Bagozzi, R.P., 2007) and TAM is also heavily criticized in its contemporary application to technology adoption research is being outdated and insufficient in explaining the adoption of more complex technology (Lim, 2018). There are certain other theories and models were available for studying the technology adoption behavior. But, few studies got mentioned by the researchers in their research and rest of the theories got pass over.

UTAUT is a model which overcomes the limitation of TAM. UTAUT model (Venkatesh at al., 2003) to explore how complicated technology is accepted in diverse fields. As far as the anticipation is concerned, it will now become an advanced tool to analyze the acceptance of a particular technology. This model precisely stated the performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) as indispensable predictors of technology acceptance. UTAUT and its other updated version (Venkatesh, Morris, Davis, & Davis, 2003; Venkatesh, Thong, & Xu, 2012) has incorporated other variables like facilitating conditions and habit with the motive of forming holistic theoretical basis to have quite a better know-how (Dwivedi et al., 2019). So far, the extant literature shows the noteworthy effect of performance expectancy, effort expectancy, and social influence on behavioral intention to use AI. After analyzing the important contribution of price and habit factor, Venkatesh et al., 2012 has introduced these construct in the utaut model. Researchers also worked on UTAUT model and extend it by inclusion of other construct such as trust (Alalwan et al., 2017), risk (Alalwan Dwivedi et al, 2016). As per the changing environment, researchers have included different moderators for having comprehensive knowledge in the same domain such as income and education (Niehaves and

Plattfaut, 2010) and technology characteristics. Still, there is an open space for researchers to determine the effect of facilitating conditions on DVA adoption as no study has tested this.

TAM and UTAUT model have provided various drivers for enhancing adoption of this new technology. As per previous researchers suggested above, UTAUT model provided more comprehensive constructs which are able to give better explanation for such a complex technology (Dwivedi, Rana, Jeyaraj, Clement, & Williams, 2019). For having better understanding about these devices, one of the important drivers is anthropomorphism.

Digital voice assistant will become increasingly human to users, to the point that consumers will be unable to tell the difference because the DVA work in similar interactive paradigm (Cassell, J. et al, 1994). A key component of the technology's success is its ability to simulate human existence (McLean and Osei-Frimpong, 2019). Anthropomorphic features of digital intelligent assistant make it more attractive and increase the likability of the system (Verberne, Ham, & Midden, 2015). Various studies indicated the increment of acceptance of such devices by different age group of people (Jacq et al., 2016). There is a significant part played by anthropomorphism for impacting the intention for DVA (Katja W. et al., 2019).

Digital voice assistants are utilized by the users for multiple uses. Users are using these devices for getting information about food and food shopping list. People used to set timer for the purpose of taking help in cooking. These devices help users in finding right recipes for cooking. These assistants help by reading the recipes. Users used to ask about certain ingredients during cooking. DVA are very convenient in use. Users only need to give command through voice only and these devices will provide the filtered information to the users. DVA help users in kitchen, food related issues and even in preparing shopping/ to do list. DVA also help the users in shopping. Alexa has characteristics like online shopping feature, by which these devices do shopping on their own. This online shopping feature of these devices only utilized for cheap products such as food and toiletries products, not for expensive products.

## **CONCLUSION**

Intelligent assistants are the devices which are giving new way to communicate with the users. Digital voices assistants are the devices which interact with the users through voice. This new technology has given a new way to marketers. This research determines factors from TAM and UTAUT for having better understanding about the object under study. Digital voice assistant have one different feature “Anthropomorphism”. Anthropomorphism is a feature which is attracting users. Users are using these devices for multiple purposes. There are studies available which are pointing the positive impact of anthropomorphism on adoption behaviors. Some studies are indicating the sort of frustration or irritation faced by users when these devices gave emotionless response or irrelevant response. Users are utilizing these devices for food related queries such as asking for recipes related information,

ingredients details. This study provides guidance for further research in the same object under study. The results of this study are beneficial for marketers and manufacturers.

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