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# EXPLORING DRIVING FACTORS FOR CONSUMERS' ACCEPTANCE OF E-COMMERCE IN CHINESE RURAL AREAS

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## ABSTRACT

Despite the rapid development of E-Commerce in global cities, residents in relative lagging areas are still facing issues to benefit from this technology. Such issues are like lack of computing equipment, inadequate technical skills, and expensive delivery services. To alleviate such issues, Chinese E-Commerce organizations (e.g., Alibaba) built up thousands of service stations in Chinese rural areas, and provided resources and services for local residents. In this research, we aim to investigate consumers' acceptance of E-Commerce in such areas. The potential factors which may influence the consumers' acceptance of E-commerce in such areas are explored according to a literature analysis. We propose a research model by incorporating the factors, such as perceived accessibility, perceived safety, and social influence, based on the Technology Acceptance Model. An empirical study is planned to validate this research model in the future.

*Keywords:* E-Commerce, User Acceptance, Consumer Acceptance, Chinese Rural Areas, Developing Countries.

## INTRODUCTION

During recent years, E-Commerce has been widely used in global cities. Urban residents have benefited a lot from on-line shopping. However, due to comparatively lagging economic situation and distributed population, the use of E-Commerce in Chinese rural areas has faced challenges. Such challenges are like lack of Internet access, lack of reliable delivery systems and inadequate technical skills. To alleviate such issues, Chinese organizations, such as Alibaba and Jingdong, have set up thousands of service stations/ stores in villages from 2014. In these service stations, computers, Internet access, technical support, and centralized delivery services are provided. In this research, we investigate to what extent E-Commerce in such service stations is accepted by local consumers. Based on a literature review, we propose a research model by incorporating the factors, such as perceived accessibility, perceived safety, and social influence, in addition to the Technology Acceptance Model. The remainder of this article is organized as below. Section 2 introduces background knowledge. Section 3 proposes a conceptual model based on TAM and other important factors. Based on this model, an empirical study is planned in Section 4. We also conclude the article in Section 4.

## BACKGROUND

We introduce some background information in this section.

### The Acceptance of E-Commerce

E-Commerce has developed quickly during the past decade. In order to better understand it and provide useful inputs for further development of it, researchers investigated models to evaluate and predict the consumers' acceptance of E-Commerce. One of the best known models is the *Technology Acceptance Model (TAM)* [5]. In TAM, Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are the two drivers of Intention to Use (IU). Pavlou used TAM and proposed to add factors of Trust and Perceived Risk to evaluate E-Commerce considering the uncertainty of E-Commerce environment [20]. A number of researchers have examined the TAM model for E-commerce, including the World Wide Web (WWW) [14], Intranet [13], desktop video conferencing in virtual workgroups [23], etc. In these studies, PU was found to have a strong effect on the adoption of new e-commerce technologies.

Some other researchers chose the *Theory of Planned Behavior (TPB)* [3] or the *Unified Theory of Acceptance and Use of Technology (UTAUT)* [2, 10, 19] in the field of E-Commerce. TPB [1] is a theory that links beliefs and behavior. In TPB, Attitude toward behavior, Subjective Norms (SN), and Perceived Behavioral Control (PBC), shape an individual's Behavioral Intentions (BI) and Behaviors. Based on TAM, TPB and several other widely used models, UTAUT [24] aims to explain usage intention (to an information system) and subsequent usage behavior. In UTAUT, Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC) are the four key constructs that determine the usage intention and behavior.

### Particularities of E-Commerce Acceptance in Lagging Areas

Despite the wide adoption of E-Commerce in developed cities, challenges and issues were found when E-Commerce was applied in comparatively lagging areas [9, 15-17]. In such areas, due to low income level, many families do not have personal computers and broadband at home. People in such areas often do not have necessary skills to operate computers and perform online transactions. Other infrastructures (e.g., delivery services) are expensive and not convenient due to the distributed population. What is more, people living in rural areas intend to follow more conventional living habits than people living in cities. These people are often influenced by other social relations. According to previous research [9, 15-17], in such areas, the consumers' major concerns to the use of E-commerce are as follows: high access cost to equipment and network, transaction trust, shopping for social, lack of skills, immature payment system, logistics, etc. Correspondingly, the acceptance of consumers living in such areas may be determined by different factors than consumers living in developed cities.

## E-Commerce Service Stations/ Stores in Chinese Rural Areas

More than half of Chinese areas are rural areas. Following the success of E-Commerce in Chinese cities, the huge potential of E-Commerce markets in rural areas has been aimed at by E-Commerce businesses since several years ago. Alibaba has established thousands of E-Commerce service stations in village centers since October 2014. From almost the same time, JingDong began set up E-Commerce service stores in villages also. On the other hand, emerging organizations such as LeCunTao [7] tried to adapt existed grocery stores to provide similar services. Common services provided by such E-Commerce service stations or stores include: shared places and devices for transactions or other social activities, integrated transaction and delivery services, technical support, and other value-added services.

### FACTORS INFLUENCING CONSUMERS' ACCEPTANCE OF E-COMMERCE IN CHINESE RURAL AREAS

In this section, we propose a research model to evaluate and predict consumers' acceptance of E-Commerce in Chinese rural areas.

#### Overall Research Model

Among existing models (e.g., TAM, TPB and UTAUT), we choose TAM as the basic model. This is because e-commerce is heavily technology-driven [20]. In addition, TAM is more parsimonious than other models. For instance, UTAUT includes too many variables to predict usage intention and behavior. Because E-Commerce in Chinese rural areas is now developing and changing very quickly, basing on a precise model can help identify the most important drivers. It was also found that some factors in UTAUT (e.g., Gender and Age) did not have a significant positive impact on users' behavior or intention in the context of rural areas [4].

Compared to urban areas, rural areas are of a comparatively lower economic level. In addition, residents in such areas live with more conventional life styles. Therefore, we proposed to involve extra driving factors in addition to the original PU and PEOU. These newly added factors will be introduced in detail in the sub-sections followed. The overall revised research model is presented in Figure 1.

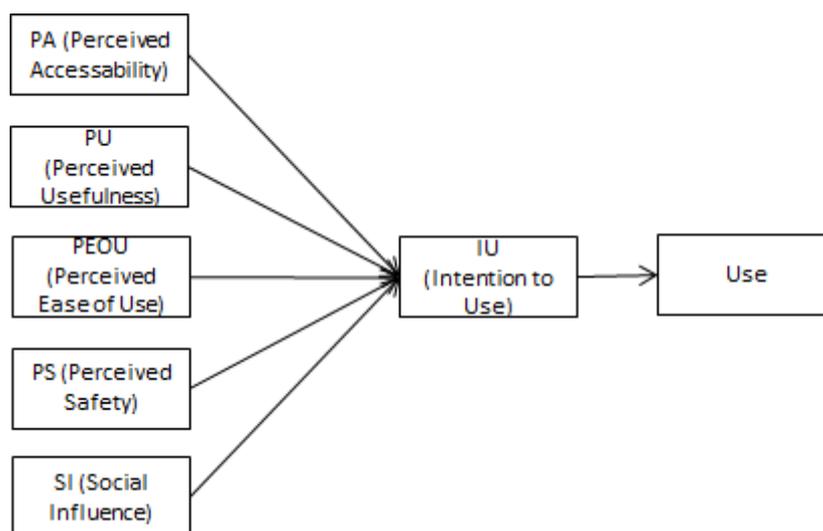


Figure 1. A Revised TAM Model for E-Commerce Acceptance in Chinese Rural Areas

#### Perceived Accessibility

We use *Perceived Accessibility* to describe the extent to which rural consumers could access necessary resources for online transactions. Rural areas are usually lagging behind in the development of infrastructure such as computing devices, telecommunication, delivery services etc. [16]. Residents in rural areas may not be able to gain E-Commerce information through modern media. Due to low affordability and educational level [9], they may not have computers, smart phones, or internet [6] to use. They may not have adequate technical skills to perform on-line transactions as well. Three aspects are proposed. The first aspect is *Wallbrushing*. In Chinese rural areas, information is often published and scattered through conventional channels such as outdoor walls, banners, publicity boards, loudspeakers, etc. Chinese E-Commerce businesses are utilizing such conventional channels to advocate their projects and have received good results [12]. We use “Wallbrushing” referring to the use of all available channels from where rural residents get to know information about E-Commerce. The second aspect is *Facilitating Condition*. This is defined as “the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system” [24]. Computing system, internet connection, and delivery system are all included in this aspect. In [21], the chance to make better deals, the convenience of a delivery service and the independence of opening hours were found as the most influential positive factors for online shopping adoption. *Technical Support* is the third aspect of Perceived Accessibility. Technical Support should be provided to help rural consumers perform

online transactions. Therefore, we propose the following hypotheses:

- H1: Perceived Accessibility of E-Commerce positively influences the user's Intention to Use E-Commerce in Chinese rural areas.*  
*H1-1: Wallbrushing positively influences the Perceived Accessibility of E-Commerce in Chinese rural areas.*  
*H1-2: Facilitating Condition positively influences the Perceived Accessibility of E-Commerce in Chinese rural areas.*  
*H1-3: Technical Support positively influences the Perceived Accessibility of E-Commerce in Chinese rural areas.*

### **Perceived Safety**

We have identified three key aspects which may bring significant impact to the *Perceived Safety* of rural residents regarding E-Commerce. Compared with residents in cities, rural consumers may not be familiar with other payment methods than cash payment. Allowing *Cash payment* makes rural residents feel safe about on-line transaction. In addition to the payment methods, previous research denoted that missing touch and feel experiences was the most influential negative obstacle for E-Commerce application [21]. Similarly in [6], it was pointed out that rural residents were discouraged from purchasing online because they could not inspect goods beforehand. This issue may be alleviated by providing *Payment on Delivery*. On the other hand, quality assurance is considered as an important factor when E-Commerce transactions happen [22]. *Unconditional Return* can be provided to rural residents to avoid their concern about goods quality. In [11], the authors also emphasized the importance of on-time delivery, ease of payment, cash on delivery, and product replacement policy. Therefore, we propose the following hypotheses:

- H2: Perceived Safety of E-Commerce positively influences the users' Intention to Use E-Commerce in Chinese rural areas.*  
*H2-1: Cash payment positively influences the Perceived Safety of E-Commerce in Chinese rural areas.*  
*H2-2: Payment on Delivery positively influences the Perceived Safety of E-Commerce in Chinese rural areas.*  
*H2-3: Unconditional Return positively influences the Perceived Safety of E-Commerce in Chinese rural areas.*

### **Social Influence**

"*Social Influence* is defined as the degree to which an individual perceives that important others believe that he or she should use the new system" [24]. Social Influence may be from *Leaderships* and *Familiarities*. In some developing countries such as Tanzania, most organizations have strong lines of authority. And thus it was crucial to gain support from the top lines of management [4]. Situation is similar in China. In [16], it was indicated that leaders and institutions can often have a significant impact on the rural community. Chinese E-Commerce businesses put emphasize on finding proper leaders for their village service stations/stores. Alibaba recruited partners to run their service stations [8], while Cuncunle have been recruiting network village officers who are probably already heads of villages or college students serving as village officers [25]. Social influence can also come from familiarities. In [22], trust and reputation were considered to be important when E-Commerce happens. Personal trust was thought to be one of the three main factors that shaped Chinese E-Commerce application [18]. Therefore, we propose the following hypotheses correspondingly:

- H3: Social Influence of E-Commerce positively influences the users' Intention to Use E-Commerce in Chinese rural areas.*  
*H3-1: Leaderships positively influences the Social Influence of E-Commerce in Chinese rural areas.*  
*H3-2: Familiarities positively influences the Social Influence of E-Commerce in Chinese rural areas.*

## **FUTURE WORK AND CONCLUSION**

In this article, we have introduced the particularities of applying E-Commerce in rural areas in China. We investigate factors which may influence the consumers' adoption and acceptance. We proposed a revised TAM model by incorporating these factors into TAM. This model was proposed based on a literature analysis. In order to validate this model, we have planned an empirical study in the near future. In the empirical study, we will perform a field study to observe and probe actual consumers' attitude in a qualitative way. Basing on the results, we adjust the conceptual model and the corresponding instrument. Then, we will perform a survey to quantitatively validate the research model.

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