Do Females Intend to Use Gamified Virtual Currency in E-Tailing?
An Empirical Study

Anoop George, Cochin University of Science and Technology, India*
https://orcid.org/0000-0002-0251-019X
Sebastian Joy Panattil, Cochin University of Science and Technology, India
https://orcid.org/0000-0001-6277-2362
Manu Melwin Joy, Cochin University of Science and Technology, India

ABSTRACT

The current study serves two purposes. First and foremost, this research aims to determine the impact of a game mechanism known as virtual currency on the intention of young female consumers to use it in an e-tailing platform; second, it looks at the function of e-trust and task awareness as an extension to the TAM framework, two antecedents that are thought to influence female virtual currency adoption intentions in e-tailing. The proposed framework was evaluated using data from an online survey of 386 female participants across India. The conceptual framework is empirically validated using the PLS-SEM technique. The current study broadens the scope of game mechanics by emphasizing the importance of e-trust as an independent variable and task awareness as a mediator. Findings imply that the e-tailer’s may include virtual currency into their platforms, allowing female consumers to make substantial use of it in their purchasing decisions.

KEYWORDS

E-Commerce, E-Trust, Gamification, Shopping, SuperCoins, Task Awareness, Technology Acceptance Model (TAM), Virtual Currency

INTRODUCTION

India’s booming and fast-growing young population are second only to China in being one of the world’s heaviest consumers of internet services. It is estimated that by 2025 India would have 900 million active internet users (ETtech, 2021). Similarly, e-tailing is rising in popularity in India and has a big potential for growth in the worldwide market (Dorai et al., 2021). The process through which online retail firms sell things by taking orders online and fulfilling them both online and offline is
known as e-tailing (Kim et al., 2009). In India, female internet users accounted for 48 percent of active internet users, while only 28 percent of the total users account for those who shop online regularly (Bhattacharjee, 2021). This implies that there are still a large number of active female internet users that are yet to regularly engage in e-tailing. This could be due to factors like trust, task awareness, perceptions of usefulness, and ease of the shopping experience on e-tailing platforms (Raman, 2014). Women place the most importance on the dimension of e-trust and task awareness when it comes to e-tailing platforms (Sebastianelli et al., 2008). To better engage online shoppers, e-tailing platforms seek to come up with unique ways to build user trust and dependability towards the platform, but only a few studies explain the role of e-trust in e-tailing (Das, 2016).

Gamification has well-specified as the application of game mechanics to non-game situations (Deterding et al., 2011). The purpose of gamification is to provide the target individuals or groups with specific motivational affordances to achieve specific behavioral outcomes (Jung et al., 2010; Weiser et al., 2015; Zhang, 2008). Nearly 70% of worldwide organizations planned to embrace gamification for promotion and customer engagement in the near future (Fitz-Walter, 2013). In the context of technology-enabled services, the use of game mechanics is viewed as a tool by service providers to make the service more engaging for the users (Hamari & Koivisto, 2015). By implementing game mechanics into information systems, designers of such systems seek to build trust, thereby resulting in certain behavioral and usage intentions regarding the platform (Hunicke et al., 2004). Game mechanics such as points and leaderboards have been commonly used in gamified applications and contexts (Deterding & Walz, 2014), but depending only on those game mechanics might not be enough to render gamification effectiveness (Chorney, 2012). However, with respect to virtual currency as a game mechanic (Aziz et al., 2017), there is a dearth of studies that look into the effectiveness of the applications of virtual currency as a game mechanic in various contexts.

Virtual currency is a type of digital currency but may indeed not have all of the characteristics of actual money (Dibrova, 2016). Virtual currency in the gamification context is the non-standard virtual money utilized while enjoying the game and the money point system with some economic value. Despite concerns about legitimacy and viability, the proportion of people using virtual currencies increases globally (Shin, 2008). According to the latest estimates, India is estimated to contribute roughly ten percent of the global virtual currency market. One of India’s widely used e-tailing web applications for online shopping is Flipkart (Dorai et al., 2021) that has got virtual currency. Members of Flipkart platforms can gain achievements due to activities and virtual currency by completing specific tasks like purchasing (Aydin, 2015). The literature also points to the need for focused empirical studies with regards to specific game mechanics and their influence in creating behavioral and engagement outcomes among intended user groups (Xi & Hamari, 2020).

In the context of virtual currency, the dearth of studies with regards to their use and effectiveness (García-Jurado et al., 2019), coupled with the need to find ways to tap into the dormant female internet user base with regards to e-tailing platforms, has formed the basis for this study. The usage of virtual currency characterized by a group of procedures and specific behaviors is looked into by this study to gauge its influence on usage intentions of female users with respect to the virtual currency afforded in the context of an e-tailing setting like the Flipkart platform. By leveraging the versatility of the Technology Acceptance Model in being able to predict the acceptance of new technologies and applications like gamification in the context of online shopping (Raman, 2020; Samar & Mazuri, 2019), the study has incorporated e-trust as an independent variable and task awareness as a mediating variable to foresee the intention to use virtual currency among female users. From a practical perspective, the study seeks to find insights for designers of gamified e-tailing platforms with regards to the factors that influence young female consumers’ willingness to use virtual currency in an e-tailing context in a developing country like India. On the theoretical front, the study seeks to add value to the foundations of the TAM by incorporating e-tailing context-relevant factors like e-trust and task awareness. Based on these objectives, the study set out to answer the following research questions:
What are the factors that influence young female consumers into adopting virtual currency in an e-tailing context?

How does a game mechanic like virtual currency affect usage behaviors among young female internet users in India?

How can the TAM be integrated with the literature on e-trust and task awareness to predict consumer behavior regarding a game mechanic in an e-tailing context?

LITERATURE REVIEW

SuperCoins – Virtual Currency By Flipkart

As per a study conducted collaboratively by the ICEA and consulting company KPMG, rural India saw a 35 percent increase in internet subscribers year over year in 2018, compared to a 7 percent increase in urban India during the same timeframe (Bureau, 2020). E-retailer like Flipkart is leading the charge in converting offline customers into online value seekers (Malik, 2014). With the advent of global behemoths such as Amazon.com in 2013, Indian players such as Flipkart are searching for innovative ways to reward customers in order to stay ahead of the competition. Flipkart has several consumer engagement strategies, including many gamification activities, to retain this rapid rush of clients even during the pandemic (Ota et al., 2020). Flipkart uses a gamified consumer engagement strategy called virtual currency called SuperCoins (Moin & Rahman, 2019) that is both marketable and redeemable, which means that the SuperCoins can be used to purchase a variety of physical goods. Flipkart began as a zero-subscription loyalty incentive program called Flipkart Plus for all of its consumers. Plus membership rewards 4 SuperCoins for every 100 rupees paid on a Flipkart purchase, while non-plus members collect 2 SuperCoins (Flipkart, 2019). Whatsoever some questions remain in both academicians and business people how far the virtual currency is affecting real-life scenarios (Wang & Mainwaring, 2008). Therefore this research focuses on deciphering consumer behavior in a gamified virtual currency context and analyzing it with the help of essential data to enhance the e-tailer’s stickiness.

TAM for Intention to Use

The TAM is a popular acceptance framework for researching online customer behavior, particularly in e-tailing (Aydin, 2015). TAM is based on the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), which is used to predict how technology will be accepted. The two basic assumptions of the TAM have perceived usefulness and perceived ease of use (Davis, 1989) which are being used to measure individuals’ intentions to use technological innovations and their actual use of technological developments (Viswanath, Venkatesh & Fred D., Davis, 2000). The TAM has been widely used to investigate people’s intention to use behavior across various populations and forms of technological advances (Chiu & Cho, 2021; Marangunić & Granić, 2015). However, according to the latest studies on the TAM, the mediating variable attitude may or may not have an impact on a person’s intention to use technology, and it is still a point of disagreement among researchers (López-Bonilla & López-Bonilla, 2017), so we did not include it in our research. Based on the extensive literature review on the adoption of virtual currency, this study has added task awareness as a mediating component and e-trust as an independent variable as an extension to TAM. Whatevever the validity of the TAM model used in this research is also confirmed through the hypotheses framed.

Perceived Usefulness

The variable perceived usefulness is specified as the extent to which a person believes that implementing a particular system will enhance their ability to do the job (Davis et al., 1989). The term relates to whether or not a piece of technology is considered useful for the mission at hand. Flipkart offers unique discounts on things purchased with virtual money, which is a form of usefulness for
its customers (Moin & Rahman, 2019) but to what extent is something that needs to be measured in this study. The ongoing interpretation of perceived usefulness frames the hypothesis in this study. The perceived usefulness of a system is a significant element in its dissemination. In this gamified context of the study, perceived usefulness is specified as a user’s belief in the transaction using the virtual currency and its positive intention to use SuperCoins.

**H1:** Perceived usefulness has a positive influence on the intention to use the virtual currency

**Perceived Ease Of Use**

Perceived ease of use is defined as the extent to which someone believes that using a particular technology will be comfortable (Davis, 1989). The term ease can also be defined as a state of being free of strain or having a lot of energy. The precise definition of perceived ease of use was used to frame the hypothesis in this study. The previous studies found the existence of a direct link between perceived ease of use and intention to use (R. Hendrickson & R. Collins, 1996). Empirical research using the TAM has shown that perceived ease of use has a significant positive effect on perceived usefulness and intention to use. The usage of virtual currency in the gamification situation is still considered an innovation, especially in the Indian e-tail setting. The variable perceived ease of use aids the initial acceptance of an invention, which is critical for favorable reception and persistent use (Davis et al., 1989). This study takes into account all of these factors.

**H2:** Perceived ease of use has a positive influence on perceived usefulness toward using the virtual currency

**H3:** Perceived ease of use has a positive influence on the intention to use the virtual currency

**Task Awareness**

Virtual currency is a new game mechanic in the Indian e-tailing setting; knowing how to use it is a great concern, particularly for customers who intend to use it. The aspects of gamification, as well as the related concept, are sometimes not yet evident to the users, resulting in failure to adopt the technology (Shahri et al., 2019). In this context, customers’ perceptions and understanding of how to use the gamified virtual currency called SuperCoins is crucial for its intention to use. This notion a person has about what he or she is supposed to do dependent on directions or by using technical tools is known as task awareness (Goel et al., 2011), and this could also comprise information about interactions, procedures, tasks, instruments, or artifacts (Gijlers et al., 2013). Lack of such kind of awareness could have an impact on users’ decisions (Menon & Raghubir, 2003) like intention to use technology. As per the review of existing literature, the variable task awareness was overlooked in the gamification context, and in this study, it is used as a mediator because it could describe the relationship between the research’s independent and dependent variables. This study tries to build insight by testing the following hypothesis

**H4:** Task awareness has a positive influence on the intention to use the virtual currency

**E-trust**

E-trust develops in situations where there are no personal or physical connections, and exchanges are transmitted by technological means (Ba et al., 2003; Taddeo, 2009). Previous research has shown the importance of e-trust in e-tailing acceptance (Ben Mansour, 2016), and the users are more inclined to accept new technologies when they have e-trust (Candra et al., 2020). The prosperity of today’s web applications can largely be due to their ability to gain user trust (Olaleye et al., 2018). The function of trust in the context of virtual currency transactions has become crucial as users’ vulnerability
in e-tailing platforms has grown (Shin, 2008). The lack of trust will lead to the failure to adopt new technologies like virtual currency among the users in online business (Ben Mansour, 2016). Various persistent elements influence the development of trust, including both pre-interactional and interactional aspects, which consist of service and technological attributes (Colesca, 2009). Therefore this study investigates the role of e-trust towards virtual currency usage intention as an extended independent variable for the TAM, which has been ignored in the previous studies. The following hypotheses are framed incorporating all those factors

H5: E-trust has a positive influence on perceived usefulness toward using the virtual currency
H6: E-trust has a positive influence on perceived ease of use toward using the virtual currency
H7: E-trust has a positive influence on task awareness on using the virtual currency

METHODOLOGY

Sampling Procedure And Data Collection
The primary purpose of this study is to extend the TAM model (Figure 1) to better understand young females’ intention to use virtual currency in an e-tailing platform called Flipkart. For this study, an internet-based survey questionnaire has been used and conducted from October 2020 to April 2021. The researchers utilized a combination of judgmental and snowball sampling techniques in their research. A group of individuals was determined in the first stage via judgmental sampling. Further participant lists were obtained from the first group of people in the next round. Although we received responses from 410 people, due to missing and extreme data in the survey, 24 samples were removed from this study. Therefore we only filtered and took responses from N=386 females who

Figure 1. The proposed research framework for testing
were relevant to the investigation. Sometimes still, the integration of virtual currencies in e-tailing service providers in India is uncommon. As a result, it was critical to ensure that the respondents had a sufficient comprehension of the virtual currency. As a result, we checked each response to see if female consumers were conscious of this mode of communication. Only female respondents between the ages of 18 and 30 who are aware of SuperCoins and have shopped at least once on gamified online shopping platform called flipkart.in were considered necessary to use the sampling technique. The sample included participants with various socio-demographic characteristics based on profession, income, and other factors. As per the data, Flipkart was used by 67 percent of the respondents for more than three years. The representativeness of the samples are declared in table 1

**Measurement**

The information was gathered through a web-based questionnaire survey. The data collection instrument was created based on the review of relevant pieces of literature and was used to measure each construct. The research instrument consisted of 16 items that essentially represented five separate variables as described in the study model. The survey used a 7-point Likert scale with

**Table 1. Descriptive statistics of the sample**

| Demography          | %    |
|---------------------|------|
| **Gender**          |      |
| Female              | 100  |
| Age                 |      |
| 18-30               | 100  |
| **Employment status** |      |
| Student             | 29.02|
| Self-employed       | 25.39|
| Professional        | 29.53|
| Others              | 16.06|
| **Flipkart Usage**  |      |
| 1–6 months          | 5.96 |
| 7 months–1 year     | 3.63 |
| 1–2 years           | 7.51 |
| 2–3 years           | 15.54|
| More than 3 years   | 67.36|
| **Marital status**  |      |
| Single              | 50.7 |
| Married             | 47.23|
| Others              | 2.07 |
| **Region**          |      |
| North India         | 26.42|
| South India         | 23.58|
| East India          | 24.61|
| West India          | 25.39|
responses ranging from “strongly disagree” to “strongly agree,” all of which were taken from earlier validated instruments. Whatever prior to moving on with actual data gathering, a pilot study was done using an online questionnaire survey consisting of 122 female participants who are the users of Flipkart SuperCoins to evaluate whether the items in the questionnaire are reliable in order to ensure questionnaires dependability. Statistical Package for the Social Sciences was used initially to do a reliability test upon on data first from pilot research. The variable perceived usefulness was finally assessed through three items taken from (Davis, 1989), and perceived ease of use was finally assessed with three items scale taken from (Venkatesh, 2000). Task awareness was finally measured by using three items scale taken from (Goel et al., 2011). Three items scale was used to measure the variable e-trust, which is taken from (Jin et al., 2008). The intention to use was the dependent variable that the researcher used, and it was measured by using four items scaled adopted from (Davis, 1989).

**Data Analysis**

This study applied the partial least square (PLS) method, a frequently employed variance-based SEM technique, with the SmartPLS 3 software (Ringle et al., 2015). There are more than a few reasons for using the PLS regression method. Because of its propensity towards predictive analysis, PLS was decided to be used in this study. The previous studies had already claimed that PLS is beneficial for very multifaceted predictive models with comparatively smaller sample sizes (Reinartz et al., 2009), and for this study, the sample size (N) was 386, which matches the relatively small size. Initially, every single item’s reliability was examined by inspecting the indicator loadings. Only the items that satisfied the condition that the values above the set standard of 0.70 (Hair Jr et al., 2021) were considered for the study and those item indicator loadings are revealed in table 2.

### Table 2. Latent variable, items, and indicator loadings

| Latent Variable/ Scale Reference | Items                                                                 | Indicator Loadings |
|---------------------------------|----------------------------------------------------------------------|--------------------|
| Intention to use (Davis, 1989)  | ITUS1: In the future, I hope to transact with SuperCoins              | 0.911              |
|                                 | ITUS2: As much as possible, I want to use SuperCoins                  | 0.951              |
|                                 | ITUS3: I recommend that others use SuperCoins                         | 0.938              |
|                                 | ITUS4: In the forthcoming, I want to endure using SuperCoins         | 0.939              |
| Perceived ease of use (Venkatesh, 2000) | PEUS1: SuperCoins tend to be very useful in my Flipkart transactions | 0.883              |
|                                 | PEUS2: I believe SuperCoins will help me improve my Flipkart transactions | 0.861            |
|                                 | PEUS3: In my view, SuperCoins would help to increase the quality of Flipkart transactions | 0.837            |
| Perceived usefulness (Davis, 1989) | PUSN1: I have realized that using SuperCoins to be straightforward and understandable | 0.929              |
|                                 | PUSN2: I have realized that using SuperCoins does not necessitate a great deal of psychological exertion | 0.903              |
|                                 | PUSN3: I have realized that using SuperCoins to be easy to use        | 0.952              |
| Task awareness (Goel et al., 2011) | TAWR1: In the Flipkart application, the textual and visual clues about SuperCoins in the platform helped me to do the task | 0.913              |
|                                 | TAWR2: In the Flipkart application, there were clues in the platform about SuperCoins that made completing the task easy | 0.963              |
|                                 | TAWR3: In the Flipkart platform, the information given in the app about SuperCoins helped me understand or explain to others the task better | 0.945              |
| E-trust (Jin et al., 2008)      | e-TRS1: I trust what this Flipkart application says about the SuperCoins | 0.860              |
|                                 | e-TRS2: I trust the claims and promises this Flipkart application makes about SuperCoins | 0.903              |
|                                 | e-TRS3: This Flipkart application’s SuperCoins is reliable             | 0.845              |
After excluding the items which exhibited low reliability, each construct’s outcomes like Cronbach’s alpha, rho_A, composite reliability, and average variance extracted and details are mentioned in table 3. The quality of being dependent on the survey questionnaire was checked by calculating Cronbach’s α, composite reliability to establish internal consistency. Both the composite reliability and Cronbach’s alpha are analyzed in almost a similar way (Wee & Choong, 2019), which looks at the indicators’ internal consistency reliability, and the values between 0.70 and 0.90 can be considered satisfactory in terms of reliability (Nunnally & Bernstein, 1994). The latent variables composite reliability and Cronbach’s alpha values are within the set standard. Every latent variable had an AVE greater than 0.50 (Hulland, 1999) and hence confirmed the convergent validity.

This study used the heterotrait-monotrait ratio of the correlations (HTMT) method (Voorhees et al., 2016) to evaluate the construct’s discriminant validity. The HTMT criterion does not exceed the most restrictive threshold of 0.85 in order to achieve discriminant validity (Henseler et al., 2015). Table 4 shows the conclusions of the measurement HTMT criterion outcomes after the erasure of items TAWR4, PUSN4, PUSN5, PUSN6 because of low factor loading which was below 0.40 (Hair et al., 2011). Every latent variable in this research is measured by using a minimum of 3 items that are good enough to have internal consistency (Cook et al., 1981).

**RESULTS**

The bootstrapping approach was used in this study to estimate the route significance of the structural model using 2000 sub-samples in order to test the hypotheses given in the previous section. The route significance was calculated using the results of the bootstrapping procedure (t-value). Figure 2 indicates the tested structural framework of intention to use the virtual currency. The Variance Inflation Factor (VIF) evaluates the structural model as a collinearity issue, and the value should be greater than 0.20 but less than 5 (Hair et al., 2011). The VIF values for each construct in the structural framework of the study are presented in table 5. The analysis reveals that the theoretical framework has no collinearity problems.

| Table 3. Reliability and validity analysis |
|------------------------------------------|
| **Constructs** | **Cronbach’s Alpha** | **rho_A** | **Composite Reliability** | **Average Variance Extracted (AVE)** |
| Perceived usefulness | 0.920 | 0.922 | 0.949 | 0.862 |
| Perceived ease of use | 0.825 | 0.828 | 0.896 | 0.741 |
| Task Awareness | 0.935 | 0.935 | 0.958 | 0.885 |
| e-Trust | 0.839 | 0.845 | 0.903 | 0.756 |
| Intention to use | 0.952 | 0.953 | 0.965 | 0.874 |

| Table 4. Heterotrait-Monotrait Ratio (HTMT) |
|--------------------------------------------|
| **Constructs** | **Perceived usefulness** | **Perceived ease of use** | **Task Awareness** | **e-Trust** | **Intention to use** |
| Perceived usefulness | 0.743 | | | | |
| Perceived ease of use | | 0.729 | | | |
| Task Awareness | 0.795 | 0.729 | | | |
| e-Trust | 0.833 | 0.728 | 0.748 | | |
| Intention to use | 0.834 | 0.783 | 0.818 | 0.737 | |
The specific indirect effects are calculated, which reveals a positive mediation effect on all paths at a 5% significance level, and the details are provided in table 6. The overview of path outcomes and the accompanying t-values demonstrating that all pathways are significant at a 5% level and are mentioned in table 7. Perceived usefulness has a significant positive effect on the intention to use virtual currency ($\beta = 0.377$ and $t$-value = 6.943) at $p<0.001$, which indicated that hypothesis 1 is supported. Perceived ease of use has a significant positive effect on perceived usefulness and intention to use virtual currency ($\beta = 0.325$ and $t$-value = 6.436, $\beta = 0.226$ and $t$-value = 4.602) at $p<0.001$ indicated that hypothesis 2 and hypothesis 3 are supported. Task awareness has a significant positive effect on the intention to use virtual currency ($\beta = 0.349$ and $t$-value = 5.967) at $p<0.001$, which indicated that hypothesis 4 is supported. Furthermore e-trust has found to be excellent predictor of perceived usefulness ($\beta = 0.537$ and $t$-value = 11.028), perceived ease of use ($\beta = 0.607$ and $t$-value = 18.580) and task awareness ($\beta = 0.663$ and $t$-value = 20.800) at $p<0.001$, which indicated

| Constructs | Perceived usefulness | Perceived ease of use | Task Awareness | e-Trust | Intention to use |
|------------|----------------------|-----------------------|----------------|---------|-----------------|
| Perceived usefulness | 2.494 |
| Perceived ease of use | 1.584 | 1.928 |
| Task Awareness | 2.449 |
| e-Trust | 1.584 | 1.000 | 1.000 |
| Intention to use | |

Figure 2. The tested structural framework of intention to use virtual currency
that hypothesis 5, hypothesis 6 and hypothesis 7 are supported. All of the proposed hypotheses are confirmed, as previously mentioned.

Table 8 shows the coefficient of determination and predictive relevance for the structural model’s endogenous variables (which are identified as latent variables). In order to estimate cross-validity redundancy as a measure of $Q^2$, a blindfolding technique with an omission distance of seven was used. The coefficient of determination for all latent variables in this study was high and is shown by the adjusted $R^2$ values. The theoretical path model could account for 72% of the variance for intention to use virtual currency. Additionally, the model’s predictive relevance for all variables is shown by the $Q^2$ values. As per (Chin, 1998), a $Q^2$ value greater than zero suggests the model’s predictive significance for that specific latent variable.

### Table 6. Results of mediation effect

| Mediating Path                                                                 | t-statistics ($|O/STDEV|)$ |
|-------------------------------------------------------------------------------|-----------------------------|
| Perceived ease of use -> Perceived usefulness -> Intention to use              | 5.198                       |
| E-trust -> Perceived ease of use -> Perceived usefulness -> Intention to use  | 5.059                       |
| E-trust -> Task awareness -> Intention to use                                 | 5.968                       |
| E-trust -> Perceived ease of use -> Perceived usefulness                     | 5.941                       |
| E-trust -> Perceived usefulness -> Intention to use                           | 5.468                       |
| E-trust -> Perceived ease of use -> Intention to use                          | 4.549                       |

Note: All paths are at $p<0.001$

### Table 7. Results of hypothesis testing for theoretical model path coefficient

| Path                                                   | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | t-statistics ($|O/STDEV|$) | Support Hypothesis |
|--------------------------------------------------------|---------------------|-----------------|---------------------------|-----------------------------|-------------------|
| Perceived usefulness -> Intention to use               | 0.377               | 0.377           | 0.054                     | 6.943                       | Yes               |
| Perceived ease of use -> Perceived usefulness          | 0.325               | 0.326           | 0.050                     | 6.436                       | Yes               |
| Perceived ease of use -> Intention to use              | 0.226               | 0.228           | 0.049                     | 4.602                       | Yes               |
| Task awareness -> Intention to use                     | 0.349               | 0.348           | 0.059                     | 5.967                       | Yes               |
| e-Trust -> Perceived usefulness                        | 0.537               | 0.536           | 0.049                     | 11.028                      | Yes               |
| e-Trust -> Perceived ease of use                       | 0.607               | 0.608           | 0.033                     | 18.580                      | Yes               |
| e-Trust -> Task awareness                              | 0.663               | 0.663           | 0.032                     | 20.800                      | Yes               |

Note: All paths are at $p<0.001$

### Table 8. The coefficient of determination and predictive relevance of latent variables

| Latent variables | Adjusted $R^2$ | $Q^2$  |
|------------------|---------------|--------|
| Perceived usefulness | 0.604         | 0.518  |
| Perceived ease of use       | 0.367         | 0.271  |
| Task Awareness              | 0.438         | 0.385  |
| Intention to use            | 0.720         | 0.624  |
DISCUSSIONS AND CONCLUSION

Theoretical Implications

This paper’s major contribution was to establish a conceptual framework for young female e-tailing users that focuses on using gamified virtual currency and provides noteworthy findings that validate previous research. The study employed an extended TAM to uncover the key roles of e-trust and task awareness in a gamified e-tailing scenario. According to the findings, e-trust, which focus on reliability and promises claimed about SuperCoins, has a beneficial impact on female consumers’ task awareness, and also with original variables of TAM such as perceived usefulness, perceived ease of use when it comes to using a virtual currency which is in line with previous researches (Ben Mansour, 2016; Rahman et al., 2013; Salloum & Al-Emran, 2018). According to the results of this study, e-trust had the greatest impact on task awareness, followed by perceived ease of use and perceived usefulness. The significant impact of perceived ease of use on perceived usefulness and intention towards using the SuperCoins was discovered, which is similar to the original TAM’s statement that perceived ease of use is a preceding factor determining individuals’ perceptions of virtual currency’s usefulness and a good predictor of intention to use virtual currency (Ha & Stoel, 2009; Hassanein & Head, 2007; Van der Heijden, 2003). This study’s findings also support the importance of extended mediating variables such as task awareness and TAM variables such as perceived ease of use and perceived usefulness (García-Jurado et al., 2019; Raman, 2020), which is consistent with previous research. The entire study emphasizes the crucial function of e-trust in initiating the mechanism and mediation effect of task awareness in using virtual currency and perceived ease of use and perceived usefulness toward adopting virtual currency in influencing young females’ intentions to use SuperCoins. After deducing the results, this study adds to the previous literature on the gamified virtual currency by extending the TAM model to include variables like e-trust and task awareness. The findings show that the model is still valid when it comes to the adoption of game mechanics in e-tailing.

Managerial Implications

The improved theoretical framework reveals several significant elements that can assist online merchants in developing gamified tactics to increase young females’ consumer involvement and, as a result, increase revenue. Flipkart celebrates online purchasing with promotions such as Flipkart Fashion Days, Flipkart Freedom Sale, Super Saver Days, Big Savings Days, and so on. However, critical variables like task awareness that provides information about utilizing SuperCoins may work as a stimulant for purchase intention behavior. As e-trust has a significant impact on virtual currency usage intention, in addition to price discounts and special coupons for female consumers, they may consider building trust in SuperCoins to help instill favorable online buying intentions in this demographic.

Gamification has a favorable impact on the usage intention of young female consumers in India, where e-tailing is becoming increasingly competitive. The most crucial finding for online stores and businesses is that the gamification mechanism known as virtual currency is extremely applicable to online shopping platforms. Therefore, the companies with young females as their target customers should design their online shopping websites to integrate a gamification mechanism known as a virtual currency to help them have a better buying experience. Another most essential practical implication based on the insights from this study is that for the e-tailers, for their business to improve, the website should appeal to young female customers by adding content on gamification elements.

There are previous researches showing various cons of game mechanics (Diefenbach & Müßig, 2019). Therefore, adopting the various mechanics of gamification carelessly without knowing the context and requirement can lead to greater problems and ineffectiveness in running the business, which is a significant concern for organizations implementing gamification. As a result, caution should be exercised while creating a website containing gamification components, and the issue is formerly acknowledged (Hamari, 2013).
Limitations

There are certain flaws in the current investigation that scholars can explore in future research. First, this research cast off only a single game mechanic called virtual currency. The phrase “gamified virtual currency” is not very broad because different virtual currencies have different qualities; the research results on SuperCoins cannot be generalized. The current study used an online questionnaire survey to obtain data from target respondents in India, and this may also limit the scope of generalization. The study used judgmental and snowball sampling methods; therefore researcher’s bias and control can be another limitation. In this examination, the PLS-SEM was chosen as the most appropriate tool for statistical analysis; however, research on the same subject with a large enough sample size and different approaches could provide different results. Lastly, the desire to use virtual currency may differ depending on the platform used, such as mobile commerce versus computer-mediated commerce. This distinction is not captured in this research.

FUTURE STUDIES AND RECOMMENDATIONS

This work will provide more research opportunities by extending the TAM to include more relevant variables to understand virtual currency adoption better. More studies can look at the virtual currency’s purpose to use from both a quantitative and qualitative standpoint. Since this study is only limited to India, it is proposed that this study be conducted in a larger number of developing countries or that a proportional examination be conducted between two countries with opposing ideas. Furthermore, future studies may look at things across time rather than simply at one point in time; hence, a longitudinal study may yield more comprehensive data. A multi-group study based on a social demographic function is also recommended for further investigation. Future research may include young males or a comparison of male and female online shoppers who are avid virtual currency users.

CONCLUSION

The study addressed a gap in the literature by looking at the effects of individual game mechanics on female internet users in an e-tailing context. This study sought to contribute to the theory by extending the theoretical premises of TAM with an independent variable called e-trust and a mediating variable called task awareness. This is highly relevant for the study in underlining the impact on the usage intention of virtual currency with reference to an e-tailing setting among female internet users. When it comes to the factors influencing the adoption of a game mechanic like virtual currency, the research confirms a significant positive relationship among e-trust, task awareness, perceived ease of use, perceived usefulness, and the intention to use the gamified virtual currency among female consumers. Future researchers will be able to build on the outcomes of this study with the knowledge gained from these structural relationships.

FUNDING AGENCY

The publisher has waived the Open Access Processing fee for this article.
REFERENCES

Aydin, G. (2015). Adoption of Gamified Systems. International Journal of Online Marketing, 5(3), 18–37. doi:10.4018/IJOM.2015070102

Aziz, A., Mushtaq, A., & Anwar, M. (2017). Usage of gamification in enterprise: A review. Proceedings of 2017 International Conference on Communication, Computing and Digital Systems, C-CODE 2017, 249–252. doi:10.1109/C-CODE.2017.7918937

Ba, S., Whinston, A. B., & Zhang, H. (2003). Building trust in online auction markets through an economic incentive mechanism. Decision Support Systems, 35(3), 273–286. doi:10.1016/S0167-9236(02)00074-X

Ben Mansour, K. (2016). An analysis of business’ acceptance of internet banking: An integration of e-trust to the TAM. Journal of Business and Industrial Marketing, 31(8), 982–994. doi:10.1108/JBIM-10-2016-271

Bhattacharjee, B. (2021). India’s active Internet population likely to touch 900 million by 2025: IAMAI-Kantar ICUBE 2020 Report (Issue June). https://cms.iamai.in/Content/MediaFiles/7d9fac50-7cac-43df-93e9-0cf34fb52403.pdf

Bureau, E. (2020). Indian to have 820 million smartphone users by 2022. The Economic Times. https://economictimes.indiatimes.com/industry/telecom/telecom-news/indian-to-have-820-million-smartphone-users-by-2022/articleshow/76876369.cms?from=mdr

Chin, W. W. (1998). The partial least squares approach to structural equation modelling. Modern Methods for Business Research, 295(2), 295–336.

Chiu, W., & Cho, H. (2021). The role of technology readiness in individuals’ intention to use health and fitness applications: A comparison between users and non-users. Asia Pacific Journal of Marketing and Logistics, 33(3), 807–825. doi:10.1108/APJML-09-2019-0534

Chorney, A. (2012). Taking The Game Out Of Gamification. Dalhousie Journal of Interdisciplinary Management, 8(May).

Colesca, S. E. (2009). Increasing E-Trust: A Solution to Minimize Risk in E Government Adoption. Journal of Applied Quantitative Methods, 4(1), 31–44.

Cook, A., Cook, J. D., Hepworth, S. J., Wall, T. D., & Warr, P. B. (1981). The experience of work: A compendium and review of 249 measures and their use. Academic Press.

Das, G. (2016). Antecedents and consequences of trust: An e-tail branding perspective. International Journal of Retail & Distribution Management, 44(7), 713–730. doi:10.1108/IJRDM-06-2015-0089

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly: Management Information Systems, 13(3), 319–339. doi:10.2307/249008

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Mode. https://www.jstor.org/stable/2632151

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From Game Design Elements to Gamefulness: Defining “Gamification.” Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments, MindTrek 2011, 9–15. doi:10.1145/2181037.2181040

Deterding, S., & Walz, S. P. (2014). The Gameful World: Approaches, Issues, Applications (S. Deterding & S. P. Walz, Eds.). The MIT Press.

Dibrova, A. (2016). Virtual Currency: New Step in Monetary Development. Procedia: Social and Behavioral Sciences, 229, 42–49. doi:10.1016/j.sbspro.2016.07.112

Diefenbach, S., & Müssig, A. (2019). Counterproductive effects of gamification: An analysis on the example of the gamified task manager Habitica. International Journal of Human Computer Studies, 127(August), 190–210. 10.1016/j.ijhcs.2018.09.004
Dorai, S., Balasubramanian, N., & Sivakumaran, B. (2021). Enhancing relationships in e-tail: Role of relationship quality and duration. *Journal of Retailing and Consumer Services, 58*(September), 102293. 10.1016/j.jretconser.2020.102293

ETTech. (2021). India to have 900 million active internet users by 2025, says report. *The Economic Times,* https://economictimes.indiatimes.com/tech/technology/india-to-have-900-million-active-internet-users-by-2025-says-report/articleshow/83200683.cms?from=mdr

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitudes, Intention, and Behavior. An Introduction to Theory and Research.* Addison-Wesley.

Fitz-Walter, Z. (2013). *A brief history of gamification.* Academic Press.

Flipkart. (2019). *SuperCoin Zone.* https://www.flipkart.com/supercoin

García-Jurado, A., Castro-González, P., Torres-Jiménez, M., & Leal-Rodríguez, A. L. (2019). Evaluating the role of gamification and flow in e-consumers: Millennials versus generation X. *Kybernetes, 48*(6), 1278–1300. doi:10.1108/K-07-2018-0350

Gijlers, H., Weinberger, A., van Dijk, A. M., Bollen, L., & van Jooldingen, W. (2013). Collaborative drawing on a shared digital canvas in elementary science education: The effects of script and task awareness support. *International Journal of Computer-Supported Collaborative Learning, 8*(4), 427–453. doi:10.1007/s11412-013-9180-5

Goel, L., Johnson, N. A., Junglas, I., & Ives, B. (2011). From space to place: Predicting users’ intentions to return to virtual worlds. *MIS Quarterly: Management Information Systems, 35*(3), 749–771. doi:10.2307/23042807

Ha, S., & Stoel, L. (2009). Consumer e-shopping acceptance: Antecedents in a technology acceptance model. *Journal of Business Research, 62*(5), 565–571. doi:10.1016/j.jbusres.2008.06.016

Hair, J. F., Jr., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2011). *PLS-SEM: Indeed a silver bullet.* Journal of Marketing Theory and Practice, 19(2), 139–151. doi:10.2753/MTP1069-6679190202

Hamari, J. (2013). Transforming homo economicus into homo ludens: A field experiment on gamification in a utilitarian peer-to-peer trading service. *Electronic Commerce Research and Applications, 12*(4), 236–245. doi:10.1016/j.elerap.2013.01.004

Hamari, J., & Koivisto, J. (2015). Why do people use gamification services? *International Journal of Information Management, 35*(4), 419–431. doi:10.1016/j.ijinfomgt.2015.04.006

Hassanein, K., & Head, M. (2007). Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping. *International Journal of Human-Computer Studies, 65*(8), 689–708. doi:10.1016/j.ijhcs.2006.11.018

Hendrickson, R., & Collins, M. R. (1996). An Assessment of Structure and Causation of IS Usage. *The Data Base for Advances in Information Systems, 27*(2), 61–67. doi:10.1145/243350.243361

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115–135. doi:10.1007/s11747-014-0403-8

Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic Management Journal, 20*(2), 195–204. doi:10.1002/(SICI)1097-0266(199902)20:2<195::AID-SMJ13>3.0.CO;2-7

Hunicke, R., LeBlanc, M., & Zubek, R. (2004). MDA: A formal approach to game design and game research. *AAAI Workshop - Technical Report, WS-04-04,* 1–5.

Jin, B., Park, J. Y., & Kim, J. (2008). Cross-cultural examination of the relationships among firm reputation, e-satisfaction, e-trust, and e-loyalty. *International Marketing Review, 25*(3), 324–337. doi:10.1108/02651330810877243
Jung, J. H., Schneider, C., & Valacich, J. (2010). Enhancing the motivational affordance of information systems: The effects of real-time performance feedback and goal setting in group collaboration environments. *Management Science, 56*(4), 724–742. doi:10.1287/mnsc.1090.1129

Kim, J., Jin, B., & Swinney, J. L. (2009). The role ofetail quality, e-satisfaction and e-trust in online loyalty development process. *Journal of Retailing and Consumer Services, 16*(4), 239–247. doi:10.1016/j.jretconser.2008.11.019

López-Bonilla, L. M., & López-Bonilla, J. M. (2017). Explaining the discrepancy in the mediating role of attitude in the TAM. *British Journal of Educational Technology, 48*(4), 940–949. doi:10.1111/bjet.12465

Malik, R. (2014). Study of Mergers & Acquisitions’ Growth strategy in E-Tailing Industry (A case Study of Flipkart-Myntra : The Online Giants). *International Journal of Management Research and Social Science IJMRS, 1*(1), 9–16. https://irdp.info/journals/j2/volume1/IJMRSS-3.pdf

Menon, G., & Raghubir, P. (2003). Ease-of-Retrieval as an Automatic Input in Judgments: A Mere-Accessibility Framework? *The Journal of Consumer Research, 30*(2), 230–243. doi:10.1086/376804

Nunnally, J. C., & Bernstein, I. (1994). *Psychometric Theory*. Tata McGraw-Hill Education.

Olaleye, S. A., Salo, J., Sanusi, I. T., & Okunoye, A. O. (2018). Retailing mobile app usefulness: Customer perception of performance, trust and tension free. *International Journal of E-Services and Mobile Applications, 10*(4), 1–17. doi:10.4018/IJESMA.2018100101

Ota, R., Ray, S. S., & Kumar, R. (2020). A Study on the Indian Consumer mindset towards online shopping during the pandemic period: A special reference to Flipkart Rachita Ota Sushree Sangita Ray. *Science, Technology and Development, 9*(7), 197.

Rahman, U. U., Rizwan, M., Ur Rehman, U., Ud Din Ahmed, A., Ali, N., & Khan, M. H. (2013). E-TAM Model: A Comprehensive Approach to Understand the Adoption of Electronic Shopping. *Journal of Basic and Applied Scientific Research, 3*(11), 178–188. https://www.researchgate.net/publication/303328379

Raman, P. (2014). Factors influencing women consumers’ buying behavior towards online shopping in India. *Journal of Contemporary Management Research, 8*(2), 23–56.

Raman, P. (2020). Examining the importance of gamification, social interaction and perceived enjoyment among young female online buyers in India. *Young Consumers*. Advance online publication. doi:10.1108/YC-05-2020-1148

Reinartz, W., Haenlein, M., & Henseler, J. (2009). An empirical comparison of the efficacy of covariance-based and variance-based SEM. *International Journal of Research in Marketing, 26*(4), 332–344. doi:10.1016/j.ijresmar.2009.08.001

Ringle, C. M., Wende, S., & Becker, J-M. (2015). *SmartPLS 3*. Smart PLS. http://www.smartpls.com

Salloum, S. A., & Al-Emran, M. (2018). Factors affecting the adoption of e-payment systems by university students: Extending the tam with trust. *International Journal of Electronic Business, 14*(4), 371–389. doi:10.1504/IJEB.2018.098130

Samar, R., & Mazuri, A. G. (2019). Does gamified elements influence on user’s intention to adopt internet banking with integration of UTAUT and general self-confidence? *International Journal of Business Excellence, 19*(3), 394–414. doi:10.1504/IJBEX.2019.102835

Sebastianelli, R., Tamimi, N., & Rajan, M. (2008). Perceived quality of online shopping: Does gender make a difference? *Journal of Internet Commerce, 7*(4), 445–469. doi:10.1080/15332860802507164

Shahri, A., Hosseini, M., Phalp, K., Taylor, J., & Ali, R. (2019). How to engineer gamification: The consensus, the best practice and the grey areas. *Journal of Organizational and End User Computing, 31*(1), 39–60. doi:10.4018/JOEUC.2019010103

Shin, D. H. (2008). Understanding purchasing behaviors in a virtual economy: Consumer behavior involving virtual currency in Web 2.0 communities. *Interacting with Computers, 20*(4–5), 433–446. doi:10.1016/j.intcom.2008.04.001
Taddeo, M. (2009). Defining trust and e-trust: From old theories to new problems. *International Journal of Technology and Human Interaction, 5*(2), 23–35. doi:10.4018/jthi.2009040102

Van der Heijden, H. (2003). Hans-Van-Der-Heijden-2003. *Information & Management, 40*, 541–549. doi:10.1016/S0378-7206(02)00079-4

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, acceptance model. *Inorganic Chemistry Communications, 11*(3), 319–340.

Viswanath, V., & Fred, D. (2014, May). Davis. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science, 46*(2), 186–204.

Voorhees, C. M., Brady, M. K., Calantone, R., & Ramirez, E. (2016). Discriminant validity testing in marketing: An analysis, causes for concern, and proposed remedies. *Journal of the Academy of Marketing Science, 44*(1), 119–134. doi:10.1007/s11747-015-0455-4

Wang, Y., & Mainwaring, S. D. (2008). Human-currency interaction”: Learning from virtual currency use in China. *Conference on Human Factors in Computing Systems - Proceedings, 25–28*. doi:10.1145/1357054.1357059

Wee, S. C., & Choong, W. W. (2019). Gamification: Predicting the effectiveness of variety game design elements to intrinsically motivate users' energy conservation behaviour. *Journal of Environmental Management, 233*(November), 97–106. 10.1016/j.jenvman.2018.11.127

Weiser, P., Bucher, D., Cellina, F., & De Luca, V. (2015). A Taxonomy of Motivational Affordances for Meaningful Gamified and Persuasive Technologies. *Proceedings of EnviroInfo and ICT for Sustainability, 22*. Advance online publication. doi:10.2991/ict4s-env-15.2015.31

Xi, N., & Hamari, J. (2020). Does gamification affect brand engagement and equity? A study in online brand communities. *Journal of Business Research, 109*(January), 449–460. 10.1016/j.jbusres.2019.11.058

Zhang, P. (2008). Motivational affordances: Reasons for ICT design and use. *Communications of the ACM, 51*(11), 145–147. doi:10.1145/1400214.1400244

Anoop George is a research scholar at the Cochin University of Science and Technology, School of Management Studies in Cochin, India. He received his MBA in Marketing and Human Resource Management from Amrita Business School, India, and Bachelor's degree in Business Administration specializing in Jewelry Design and Management from Manipal University, India. He authored research articles in ABDC, SCOPUS and WoS indexed journals and also has work experience from reputable corporations such as Tata Group and Shoppers Stop, to name a few. His field of research includes gamification, loyalty, marketing, and the use of game mechanics in modern business management.

Sebastian Joy Panattil is currently a research scholar with the School of Management Studies, Cochin University of Science and Technology, Cochin. He has completed his Master's in Business Administration from St. Albert's College, Ernakulam, India. He has worked in the advertising industry, and his areas of interest include brand management, consumer behavior, and gamification. He has authored research articles in ABDC and SCOPUS indexed journals.

Manu Melwin Joy is an assistant professor at the Cochin University of Science and Technology, School of Management Studies in Cochin, India. He has a Ph.D. degree and six Master's degrees from various verticals such as business administration, psychology, psychotherapy and counseling, sociology, to name a few. He has worked at various reputed organizations as a corporate trainer. From the perspective of gamification, consumer behavior, and customer loyalty, he has authored several seminal empirical, theoretical, and meta-analytical scholarly articles on several topics.