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The Effectiveness Of The Token Economy In Controlling College Students' Dependence On Online Shopping In The E-Commerce Era

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Abstract

The rapid growth of e-commerce has increased the accessibility of online shopping and encouraged consumptive behavior among university students. This condition may develop into online shopping addiction, characterized by compulsive buying behavior, difficulty controlling purchasing urges, and negative financial and psychological consequences. This study aimed to examine the effectiveness of the token economy technique in controlling online shopping addiction among university students in the e-commerce era. The study employed a quantitative experimental approach using a One-Group Pretest-Posttest Design. The participants consisted of 30 university students selected through purposive sampling. Data were collected using the Online Shopping Addiction Scale (OSAS), which consists of 18 items measuring six dimensions of online shopping addiction. Data analysis was conducted using the Paired Sample t-Test with IBM SPSS Statistics 26. The results indicated that the mean score for online shopping addiction decreased from 68.73 in the pretest to 30.50 in the posttest. Furthermore, the Paired Sample t-Test revealed a significant difference between pretest and posttest scores, $t(29) = 30.277$, $p < .001$. These findings demonstrate that the token economy technique is effective in reducing online shopping addiction among university students. Practically, this inter s can be utilized as an alternative behavioral strategy to enhance self-control and reduce excessive online shopping behavior among students.

Keywords: Token Economy, Online Shopping Addiction, University Students, E-Commerce, Self-Control.

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INTRODUCTION

The development of digital technology and the rapid growth of e-commerce have transformed consumer behavior patterns, particularly among university students. The presence of marketplaces such as Shopee, Tokopedia, and TikTok Shop provides convenience in conducting transactions quickly, practically, and without time constraints. University students have become one of the largest user groups of e-commerce services due to the high intensity of smartphone and social media use in their daily lives. Various features such as flash sales, free shipping, cashback, and pay-later payment systems encourage an increase in impulsive purchasing behavior. These conditions have caused online shopping activities to no longer be merely for fulfilling needs but have evolved into a part of lifestyle and a means of emotional satisfaction.

Empirical data indicates that online shopping behavior has become an integral part of students' lives. The study found that the platforms most frequently used by students are Shopee (81.2%) and TikTok Shop (56.5%). The primary factors driving students to shop online are convenience and ease of access, followed by the various promotions and discounts offered by e-commerce platforms. Additionally, 42% of respondents stated that social media significantly influences their purchasing decisions. These findings indicate that students are a group highly exposed to digital marketing stimuli that can increase both the frequency and intensity of online shopping

This phenomenon not only impacts increased consumption activity but is also linked to students' financial planning. A study by(Zahrani, 2025) found a strong negative correlation between the intensity of online shopping and students' financial planning ($r = -0.775$; $p < 0.05$). The results indicate that the higher the intensity of students' online shopping, the lower their ability to engage in financial planning. In fact, online shopping intensity accounts for 60.1% of the variation in students' financial planning. This finding suggests that high levels of online shopping activity have the potential to disrupt students' ability to manage their finances effectively.

In addition to impacting financial aspects, high e-commerce usage intensity is also associated with the emergence of consumptive and impulsive behavior. Research by Putra (Syahban et al., 2025) indicates that impulsivity has a positive and significant influence on students' consumptive behavior in online shopping. Students with high levels of impulsivity tend to make unplanned purchases more easily due to promotions, flash sales, ease of transaction, and the influence of social media. These findings indicate that students' online shopping behavior is driven not only by functional needs but also by emotional factors and weak self-control.

Research on the adaptation *of the Online Shopping* Addiction *Scale* explains that excessive

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online shopping behavior can develop into an addictive tendency characterized by compulsive behavior, difficulty controlling the urge to buy, and the emergence of negative impacts on economic, social, and emotional aspects (Al-Ghiffari et al., 2022) . Furthermore, the various conveniences offered by e-commerce platforms can increase an individual's tendency to make excessive purchases. (Nurfatimah et al., 2023) found that self-control plays a role in curbing consumptive behavior in online shopping activities. These findings align with the study (Annafila & Zuhroh, 2022) , which indicates that self-control has a negative influence on online shopping consumption behavior among university students. The higher an individual's self-control, the lower their tendency toward consumption behavior. Conversely, low self-control can increase impulsive purchases and excessive shopping behavior, potentially leading to online shopping addiction.

In behavioral psychology, online shopping addiction can be explained through B. F. Skinner's operant conditioning theory, which states that human behavior is influenced by the consequences received following the behavior's occurrence. Behaviors that receive reinforcement tend to be maintained and repeated, while those that do not receive reinforcement will decrease in frequency. (Skinner, 1953) .

Based on this theory, the token economy technique has emerged as a form of behavior modification that uses a system of tokens or points as secondary reinforcers for desired behaviors. This technique aims to improve an individual's behavioral control through the gradual provision of rewards.

On the other hand, online shopping addiction is also linked to low self-control. According to Roy F. Baumeister, individuals possess limited self-control capacity; thus, when this capacity weakens (ego depletion), individuals become more prone to impulsive and consumptive behaviors. As explained in (Baumeister et al., 2008) , excessive consumption, impulsive spending, and difficulty resisting the urge to buy are forms of self-control failure arising from the limitations of an individual's psychological resources. Thus, the token economy technique is considered relevant for helping students control their online shopping behavior through the gradual reinforcement of self-control.

Although numerous studies have been conducted on consumer behavior and impulsive buying, research specifically examining the effectiveness of the token economy in controlling online shopping addiction among college students remains relatively limited. Most previous studies have focused on general consumer behavior, impulsive buying, or the use of the token economy in educational and clinical contexts. Furthermore, research on online shopping addiction

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in Indonesia remains dominated by descriptive and correlational studies that merely describe the extent of behavioral tendencies without providing concrete behavioral intervention strategies. For instance, the study (Syahban et al., 2025) only demonstrates the relationship between impulsivity and consumer behavior without testing intervention strategies to reduce such behavior. However, based on Skinner's behaviorist theory and Baumeister's self-control theory, online shopping addiction can be reduced through the systematic reinforcement of self-control behaviors. This research gap serves as the critical basis for conducting this study on the effectiveness of the token economy in controlling online shopping addiction among college students in the e-commerce era.

Based on the above, this study aims to determine the effectiveness of the token economy technique in controlling students' online shopping addiction. The study employs a One-Group Pretest–Posttest Design to measure changes in the level of online shopping addiction before and after the implementation of the token economy intervention. Thus, the research hypothesis proposed is that there is a difference in the level of students' online shopping addiction before and after the token economy intervention is administered. The level of students' online shopping addiction after the token economy intervention is expected to be lower than before the intervention was administered.

METHODOLOGY

This study employs a quantitative experimental design using a one-group pretest-posttest design. The study aims to analyze the effectiveness of the token economy technique in controlling students' online shopping addiction in the era of e-commerce. In this design, research subjects were given a pretest to determine their level of online shopping addiction prior to the intervention. Subsequently, subjects received treatment in the form of a token economy program and were then given a posttest. The difference between pretest and posttest scores was used to determine the effectiveness of the intervention.

The independent variable in this study is the token economy, a behavior modification technique that uses tokens or points as secondary reinforcers for desired behaviors. The dependent variable in this study is online shopping addiction, defined as an individual's tendency to make excessive purchases through e-commerce platforms, difficulty controlling the urge to buy, and continuing to make purchases despite negative economic, social, and emotional consequences.

The subjects of this study are currently enrolled students who exhibit a tendency toward online shopping addiction. The sampling technique used is purposive sampling, which is a method

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of selecting a sample based on specific characteristics relevant to the research objectives. Subject criteria include active students aged 18–25 years, who actively use e-commerce platforms such as Shopee, Tokopedia, TikTok Shop, Lazada, or similar platforms, and who exhibit moderate to high levels of online shopping dependency based on the results of an initial screening.

The study sample consisted of 30 students who participated in the entire research process, from the pretest, through the implementation of the token economy intervention, to the posttest. The study was conducted online using Google Forms for the completion of research instruments and *self-monitoring* sheets. Throughout the study, the researcher adhered to the principles of anonymity and data confidentiality to protect the privacy of the research participants.

Based on the results of the normality test using the Shapiro-Wilk test, the pretest data yielded a significance value of 0.488, and the posttest data yielded a significance value of 0.055. A significance value greater than 0.05 indicates that the research data is normally distributed, thus meeting the assumptions for parametric analysis.

This study used the Online Shopping Addiction Scale (OSAS) developed by Zhao, Tian, and Xin (2017) and adapted into Indonesian by Al-Ghiffari, Gani, and Mukminin (2022). This instrument was used to measure the level of online shopping addiction among college students. Online shopping addiction is defined as a tendency toward excessive, compulsive, and problematic online shopping behavior that results in consequences in economic, social, and emotional aspects.

The OSAS scale consists of 18 items that measure six dimensions: salience, mood modification, tolerance, withdrawal, conflict, and relapse. The *salience* dimension describes the dominance of online shopping in an individual's life; *mood modification* relates to using online shopping to improve one's mood; *tolerance* indicates an increasing need to shop to achieve the same level of satisfaction; *withdrawal* describes the emergence of discomfort when unable to shop online; *conflict* relates to the emergence of conflicts resulting from online shopping behavior; while *relapse* indicates a tendency to return to excessive online shopping behavior after attempting to reduce it.

The instrument uses a Likert scale with five response options: Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), and Strongly Agree (SA). The higher the score obtained by participants, the higher their level of online shopping dependency. The results of the adaptation conducted by Al-Ghiffari et al. (2022) indicate that the instrument possesses good psychometric quality, with a Cronbach's Alpha reliability coefficient of 0.882, a KMO value of 0.855, and a *total variance explained* of 66.977%. Consequently, the instrument is deemed valid and reliable for measuring online shopping dependency within the Indonesian population.

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In addition to using the online shopping addiction scale, this study also utilized a *self-monitoring* sheet to track participants' online shopping behavior during the token economy intervention. Each participant recorded the frequency and urges to shop online experienced throughout the study. Tokens were awarded to participants who successfully met predetermined behavioral control targets and were accumulated in a weekly *leaderboard* system. At the end of each week, the three participants with the highest number of tokens received rewards as a form of positive reinforcement.

Data analysis was conducted using IBM SPSS Statistics version 26. Before testing the hypotheses, the researcher conducted a normality assumption test using the Shapiro-Wilk test. The results of the test showed that the pretest and posttest data were normally distributed, thus meeting the requirements for the use of parametric statistics. Next, hypothesis testing was conducted using a Paired Sample t-Test to determine the difference in the level of online shopping dependence before and after the token economy intervention was implemented.

The results of the analysis show that the mean pretest score was 68.73 (SD = 6.198), while the mean posttest score was 30.50 (SD = 5.655). The Paired Sample t-Test yielded a t-value of 30.277 with a significance level of $p < 0.001$, indicating a significant difference between pre- and post-intervention scores. Thus, the token economy was proven effective in reducing students' reliance on online shopping

RESULTS

This study aims to determine the effectiveness of the token economy in controlling students' online shopping dependency in the e-commerce era. The analysis was conducted on 30 students who participated in the entire research process, from the pretest, through the implementation of the token economy intervention, to the posttest.

Based on the theoretical score of the Online Shopping Addiction Scale (OSAS), which consists of 18 items with a score range of 1–5, a hypothetical mean of 54 was obtained. The analysis results showed that the empirical mean at the pretest, which was 68.73, was above the hypothetical mean, indicating that the participants' level of online shopping addiction prior to the intervention was relatively high. After the token economy intervention, the posttest empirical mean of 30.50 was below the hypothetical mean, indicating a decrease in the participants' level of online shopping addiction.

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Table 1. Descriptive Statistics of Online Shopping Dependency Scores Before and After the Token Economy Intervention

Variable	*N*	*Minimum*	*Maximum*	*Mean*	*SD*
Pre-test	30	58	82	68.73	6.20
Posttest	30	21	42	30.50	5.66

Source: SPSS Analysis Results (2026)

Based on Table 1, it is evident that the average online shopping addiction score before the intervention was 68.73 (SD = 6.20), while the average score after the intervention was 30.50 (SD = 5.66). These results indicate a decrease in the average score of 38.23 points following the implementation of the token economy intervention. Additionally, the pretest score range was 58–82, while the posttest score range was 21–42. These findings suggest that there was a reduction in the level of online shopping dependence among the majority of participants after participating in the token economy program.

Before testing the hypotheses, the researcher conducted a normality test using the Shapiro-Wilk test. The results showed that the pretest data had a significance value of 0.488 and the posttest data had a value of 0.055 ($p > 0.05$), so it can be concluded that the data are normally distributed and meet the assumptions for parametric analysis.

Next, a hypothesis test was conducted using the Paired Sample t-Test to determine the difference in the level of online shopping dependence before and after the token economy intervention was implemented.

Table 2. Results of the Paired Sample t-Test for Online Shopping Dependency

Variable	*Mean Difference*	*t*	*df*	*p*
Pretest – Posttest	38.233	30,277	29	< 0.001

Source: SPSS Analysis Results (2026)

The results of the Paired Sample t-Test in Table 2 show a t-value (df = 29) of 30.277 with a p-value of <0.001. A p-value less than 0.05 indicates a significant difference between the pretest and posttest scores. The mean score difference of 38.233, with a 95% confidence interval ranging from 35.651 to 40.816, indicates that students' level of online shopping dependency after the token economy intervention was significantly lower than before the intervention. Thus, the research hypothesis stating that the token economy is effective in controlling students' online shopping dependence is accepted.

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DISCUSSION

The results of the study indicate that the implementation of a token economy is effective in reducing students' reliance on online shopping. The decrease in the average score from 68.73 at the pretest to 30.50 at the posttest indicates that students experienced a significant behavioral change after participating in the intervention program. These findings suggest that providing positive reinforcement through tokens and rewards can enhance students' ability to control the urge to engage in excessive online shopping.

The findings of this study are consistent with the theory of operant conditioning proposed by Skinner (1953), which explains that behavior can be shaped and maintained through the consequences that follow that behavior. In this study, tokens served as secondary reinforcers given when participants successfully demonstrated self-control regarding online shopping activities. This reinforcement encouraged the emergence of the desired behavior, thereby gradually reducing the tendency to make impulsive purchases.

The findings of this study also support the self-control theory proposed by Baumeister et al. (2008). According to this theory, consumptive and impulsive behavior often arises due to an individual's limited ability to control momentary urges. Through the token economy system, participants received external motivation that helped them maintain self-control. As the intervention progressed, the students learned to delay immediate gratification in order to obtain a greater reward in the future, thereby improving their self-control.

This study expands upon the findings of Syahban et al. (2025), who found that impulsivity influences college students' consumer behavior regarding the use of online shopping platforms. Unlike previous correlational studies, this study demonstrates that consumer behavior and tendencies toward online shopping addiction can be reduced through structured behavioral interventions using a token economy.

Nevertheless, this study has limitations because it employed a one-group pretest-posttest design without a control group. Therefore, future research is recommended to include a control group and a larger sample size to enhance the external validity of the findings. Overall, the results indicate that the token economy is an effective behavior modification strategy for managing students' online shopping addiction in the era of e-commerce

CONCLUSION

This study aims to determine the effectiveness of a token economy in controlling students' online shopping addiction in the era of e-commerce. Based on the results of an analysis using *a*

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Paired Sample t-Test, a significant difference was found between the levels of online shopping addiction before and after the token economy intervention. The average online shopping dependency score decreased from 68.73 at the pretest to 30.50 at the posttest. These results indicate that the token economy is effective in helping students reduce excessive online shopping behavior and improve their self-control against consumerist impulses.

Theoretically, the findings of this study support Skinner's theory of *operant conditioning*, which posits that behavior can be shaped through reinforcement. The provision of tokens and rewards has been shown to reinforce self-control behavior, thereby reducing the frequency of online shopping. Furthermore, the results of this study also support *self-control* theory, which explains that individuals can improve their ability to control impulsive urges through systematic behavioral reinforcement strategies.

In practical terms, this study demonstrates that a token economy can serve as a simple, easy-to-implement, and effective intervention to help students manage their online shopping addiction. This program can be implemented by students independently or developed by counselors, educators, and educational institutions as part of efforts to improve financial literacy, manage consumer behavior, and enhance self-control amid the rapid growth of e-commerce. Future research is recommended to include a control group, involve a larger number of participants, and examine the effectiveness of the token economy over a longer period to obtain more comprehensive results.

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