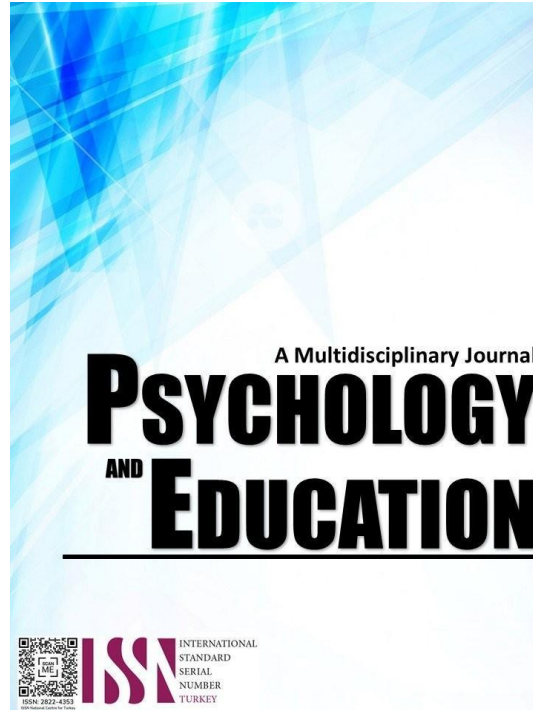


# **STUDENT PAYMENT BEHAVIORS, QUEUE MANAGEMENT, AND CASHIER EFFICIENCY IN A PRIVATE HIGHER EDUCATION INSTITUTION**



## **PSYCHOLOGY AND EDUCATION: A MULTIDISCIPLINARY JOURNAL**

Volume: 36

Issue 9

Pages: 1005-1010

Document ID: 2025PEMJ1621

DOI: 10.70838/pemj.360905

Manuscript Accepted: 04-25-2025

## Student Payment Behaviors, Queue Management, and Cashier Efficiency in a Private Higher Education Institution

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### Abstract

The study investigated the influence of student payment behaviors, queue management, and cashier efficiency at Liceo de Cagayan University. It aimed to analyze how students' preferences and behaviors impacts queue lengths and cashier productivity. The study employed a descriptive correlational and causal research designs, incorporating surveys and observations to assess transaction times, peak payment periods, and students' adoption of digital payment solutions, using a sample of 761 students from the School of Business Management and Accountancy, College of Arts and Sciences and College of Teacher Education. Data were collected through a structured survey, distributed in person, and analyzed using mean and standard deviation. Pearson product-moment correlation and multiple linear regression were used to identify the best predictor of cashier efficiency. The results revealed that cashier efficiency was positively influenced by several factors including payment method, student attitude, technology adoption, queue strategies, technology integration, and queue monitoring. Implementing these factors effectively could enhance overall cashier performance and improved the student experience. The findings suggested that improving how queues were managed and fostering a positive student attitude could significantly enhanced cashier performance. The study provided valuable insights for university administrators to implement structured queue management strategies, increased staffing during peak periods, and invest in technology-driven payment systems to improve transaction speed and accuracy.

**Keywords:** *cashier efficiency, higher education institution, payment behaviors, payment systems optimization, queue management*

### Introduction

Efficiently managing student payments, queues, and cashier operations are crucial for private schools to function smoothly. My interest in this topic comes from observing the challenges faced by students and staff, particularly during peak times like enrollment and monthly payments. Inefficiencies in these processes can lead to long queues, frustrated parents, and overworked cashiers, highlighting the need for improvements. Addressing these inefficiencies through better workforce allocation, automation, and training can enhance overall efficiency.

Cashiers play a vital role in customer service by handling transactions, answering inquiries, and resolving complaints. A positive interaction with a cashier can significantly impact customer satisfaction, including students and parents. Frontline personnel should not only be sufficiently knowledgeable but also comprehend the mission, goals, and objectives of the organization and the service quality parameters (Mengesha, 2015). The role demands strong communication skills, problem-solving abilities, and the capacity to work under high-pressure conditions. Despite technological advancements, cashier services continue to face challenges that require evaluation to improve efficiency (PCC, 2024).

Student payment behaviors are evolving due to technological advancements and shifting attitudes toward digital transactions. Understanding these behaviors is important for schools as it impacts financial stability, cash flow, and overall service quality (Zhao et al., 2021). Villarreal et al. (2023) emphasized the role of artificial intelligence in optimizing institutional processes, improving service delivery, and ensuring financial sustainability. The shift toward digital payments has been growing worldwide, driven by the need for convenience and efficiency.

Queue management involves strategies, technology integration, and real-time monitoring to improve service flow. Uddin et al. (2016) stated that an effective queue management system helps service providers manage customer flow efficiently. The system could ease the customer flow management which is helpful for manager of the service provider. Educational institutions, including private schools, are no exceptions to these trends. The efficient handling of payments and managing queues at cashier points were essential for maintaining a high level of service and cashier efficiency. Similarly, Jidin et al. (2016) highlighted that queue management systems improve customer experience, operational efficiency, and revenue. In educational institutions, well-designed queue management strategies can create a better experience for students, parents, and staff.

Cashier efficiency is essential for the success of any service-oriented institution. Well-trained cashiers and optimized processes can increase customer satisfaction, boost revenue, and improve overall efficiency (INDEED, 2022). Saravanan et al. (2024) noted that the fast-changing service sector plays a crucial role in economic growth, making efficiency in cashier operations more important than ever.

Private schools face unique challenges related to payment behaviors and queue management, influenced by economic and cultural factors. This study aims to examine these aspects in detail to provide insights that can enhance the financial management and service

quality of private schools. By analyzing student payment behavior, queue dynamics, and cashier performance, this research seeks to offer solutions for improving operational efficiency and customer experience.

## Research Objectives

The study aimed to delve into the details of payment behaviors, the dynamics of queue management, and the efficiency of cashier operations within private schools. By analyzing these elements, the study sought to: (1) describe the level of student payment behaviors in terms of: (a) payment method; (b) student attitude; and (c) technology adoption; (2) measure the level of queue management in terms of: (a) queue strategies; (b) technology integration; and (c) queue monitoring and feed backing; (3) determine the level of cashier efficiency; (4) analyze the significant relationship between cashier efficiency, student payment behavior, and queue management; (5) identify which variables, singly or in combination, best predicts cashier efficiency.

## Methodology

### Research Design

This study used descriptive correlational and causal research design to analyze student payment behavior, queue management, and cashier efficiency in private schools. A descriptive correlational design helps describe variables and measure the relationships between them (Aprecia et al., 2022). In this study, it examined how cashier efficiency, queue management, and student payment behavior are connected. A causal research design helps determine whether one factor directly affects another. This study explored whether better queue management leads to students making payments more quickly or accurately. By controlling variables, it identified cause-and-effect relationships, such as whether improving cashier efficiency results in better student payment behavior (DOVETAIL, 2023) explained that causal research focuses on understanding the reasons behind certain outcomes by studying how changes in one factor influence another. By integrating these methods, the study aimed to find patterns and connections while also testing whether improvements in one area such as cashier efficiency directly leads to better outcomes like faster payments.

### Respondents

The study focused on 761 participants out of 2,842 total population of three different colleges namely: School of Business Management and Accountancy, College of Arts and Sciences and College of Teacher Education, which comprises all year levels. Participants must be 18 years or older and willing to provide informed consent. These colleges were strategically chosen based on factors such as student population, payment transaction volume and operational differences in cashier services. The final set of participants was confirmed after meeting the criteria and obtaining the informed consent.

To achieve the sample size, the study employed simple random sampling, a method that ensures each member of the population had an equal probability of being chosen. This method also guaranteed that the sample was representative, minimizes selection bias, and supported the reliability and generalizability of the study results. To determine the sample size, the Raosoft online sample size calculator was used. This tool was specifically designed to calculate statistically significant sample sizes, ensuring the data collected represents the larger population.

### Instrument

Data for this study was collected from self-administered surveys. Three (3) parts of questionnaires were used to gather the data for this study to measure student payment behavior, queue management and cashiers' efficiency. The first part was composed of thirty-two (32 items) statements that described student payment behavior in terms of payment method, student attitudes, and technology adoption that used Likert-like scale. The second section was composed of forty-five (45) statements that determined the level of queue management in terms of queue strategies, technology integration, and queue monitoring and feedbacking. There were twenty (20) statements in the third section that measured the level of cashier efficiency.

### Procedure

The data gathering procedure for this study followed a systematic procedure to ensure accurate and reliable data collection while adhering to ethical standards. To begin the study, the researcher sought from the office of the Vice Presidents for Academic Affairs, the Dean of the College of Business Management and Accountancy, Dean of College of Arts and Sciences, and the Dean of College of Teacher Education. Following this, a formal request was submitted to the Office of the Vice President for Research and Extension to conduct the study within the university.

After all necessary approval, the researcher met the participants personally, distributed the survey forms, and provided informed consent forms. Participants were assured of their voluntary participation and the confidentiality of their responses. They were also informed about the study's purpose, funding, and expected outcomes. Participation was voluntary, and participants could withdraw at any time without any obligations.

Community considerations guided the study, respecting cultural norms and institutional policies. Finding was shared to stakeholders, such as university administrators and student councils, to facilitate improvements. A dissemination plan ensured results was presented through academic publications and conferences, with summary results made available to the university.

## Data Analysis

The following statistical tools were used to make the analysis and interpretation. Problems 1, 2 and 3 used descriptive statistics such as mean and standard deviation. According to Bhandari (2020), descriptive statistics summarize and organize characteristics of a data set. A data set was a collection of responses or observations from a sample or entire population.

For problem 4, Pearson's product-moment correlation was used. According to Turney (2022), this summarized the characteristics of a data set and it describes the strength and direction of the linear relationship between two quantitative variables.

For problem 5, multiple linear regression was used to identify the variables that predicted cashier efficiency. Bevans (2020) multiple linear regression was used to estimate the relationship between two or more independent variables and one dependent variable.

## Results and Discussion

This study examined the factors influencing cashier efficiency, focusing on the students' payment behaviors and queue management. The analysis revealed that cashier efficiency was positively influenced by several factors, including payment methods, student attitudes, technology integration, student payment behavior, queue strategies, technology integration, and queue monitoring. All of these variables contribute to more efficient transactions, faster processing times, and reduces wait times. Multiple regression analysis revealed that cashier efficiency was strongly influenced by student attitude and queue management.

### Level of Student Payment Behaviors

Among the aspects of student payment behaviors, technology adoption had the biggest impact with  $M=3.79$ , ( $SD=1.03$ ). Followed closely by student attitude with  $M=3.77$ , ( $SD=1.01$ ). resulting the overall mean of  $M=3.71$ , ( $SD=1.006$ ) indicated that students generally exhibit a good level of payment behaviors, though their experiences and adaptability vary. The result was aligned with the theory of Abraham Maslow. Maslow's Hierarchy of needs explains that people have different levels of needs, starting with basic needs such as food and shelter, and moving up to higher needs like self-esteem and personal growth. This theory can help us understand student payment behavior. In this way, Maslow's theory shows that a family's ability to pay school fees is often linked to their overall well-being and the needs they are currently trying to meet.

### Level of Queue Management of the Participants

In terms of queue management, technology integration had the highest effectiveness level, with  $M=3.65$ , ( $SD=1.01$ ), followed by queue monitoring and feedbacking with  $M=3.58$ , ( $SD=1.04$ ), resulting and overall mean of  $M=3.59$ , ( $SD=1.04$ ) indicated that participants perceived queue management as effective, though student had different experiences. Scientific Management Theory, developed by Frederick Taylor, focuses on improving efficiency and productivity through careful analysis and standardization of work processes. This theory aligns well with queue management because both aim to reduce waiting time, eliminate unnecessary steps, and make systems more efficient. It also provides useful tools and ideas for designing more efficient queuing systems that benefit both staff and customers.

### Level of Cashier Efficiency

The study identified that the highest-rated aspect of cashier efficiency was being adequately staffed during busy times with  $M=3.69$ , ( $SD=1.03$ ), followed by assuring accuracy with speed of transactions with  $M=3.67$ , ( $SD=1.01$ ), resulting an overall mean of  $M=3.45$ , ( $SD=1.08$ ) suggested that participants perceived cashier efficiency as moderately high, but experiences varied. Decision Field Theory of Jerome Busemeyer is a psychological model that explains how people make decisions over time when they are faced with different options and uncertainty. This theory aligns with cashier efficiency because cashiers constantly make decisions while serving customers, such as choosing the fastest way to process a transaction, handling unexpected issues, or deciding how to manage their time between tasks.

### Correlation Between Cashier Efficiency, Student Payment Behaviors, and Queue Management

The study also identified that there is a significant relationship between cashier efficiency, student payment behavior, and queue management. All showed significant correlations ( $p<.05$ ) indicated that improvements in payment behavior and effective queue strategies would lead to increase in cashier efficiency. This finding implied that providing a variety of payment methods, including cash, credit, debit, and digital wallets, could helped streamlined the transaction process. This result was lined with the study of Melnychenko (2021), payment method has a significant relationship on cashier efficiency, improving payment efficiency could be achieved using new technologies, faster payment methods, and more efficient cashiers or automated systems.

*Results of Pearson R Correlation Analysis for the Significant Relationship Between Cashier Efficiency, Student Payment behavior and Queue Management*

Variables	<i>r</i>	<i>P-value</i>	<i>Interpretation</i>
Payment Method	.426***	.000	Significant
Student attitude	.460***	.000	Significant

Technology Adoption	.458***	.000	Significant
Student Payment Behavior	.494***	.000	Significant
Queue strategies	.573***	.000	Significant
Technology Integration	.589***	.000	Significant
Queue Monitoring and Feed backing	.593***	.000	Significant
Queue Management	.636***	.000	Significant

**Legend:**

Correlation Coefficient Range	Effect Size/Strength of Relationship (Cohen, 1988)
.50 and Above	Strong/Large Correlation
.30 to .49	Moderate Correlation
.10 to .29	Weak/Small Correlation

The multiple regression analysis showed that queue management and student attitude were the strongest predictor of cashier efficiency, explaining 43.4% of its variability ( $R^2=.434$ ). Among these, queue management had the highest influence with ( $\beta=.383$ ,  $p<.05$ ), followed by student attitude with ( $\beta=.144$ ,  $p<.05$ ). The results indicates that the overall model is statistically significant with an R-value of .659. The F-value of 96.34 with a p-value of 0.000 further confirms the significance. The result also indicated that the more positive the behavior of the students toward the payment process, the better queue management, the more efficient the cashiers are. These findings were supported by the claimed of Setiabudy & Cahyana (2024) Queue management serves as a predictor of cashier efficiency by optimizing staffing levels. The study found that adding cashiers significantly reduced wait times, enhancing service efficiency and customer satisfaction, demonstrating the importance of effective queue management in retail environment.

*Results of Multiple Regression Analysis for the Variables that Individually or in Combination Best Predicts Cashier Efficiency*

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Interpretation
	B	Std. Error	Beta			
(Constant)	.350	.142		2.46	.014	Significant
Payment Method	.059	.050	.052	1.18	.238	Not Significant
Student attitude	.171	.054	.144	3.16	.002	Significant
Technology Adoption	.017	.055	.015	.314	.753	Not Significant
Technology Integration	.060	.091	.057	.657	.511	Not Significant
Queue Monitoring and Feed backing	.110	.081	.105	1.36	.172	Not Significant
Queue Management	.437	.153	.383	2.86	.004	Significant
R=.659 $R^2=.434$ F=96.34    P=.00						

## Conclusions

Students generally have good payment habits with technology use being the biggest factor influencing their behavior. Their attitude also plays a role, but the type of payment method they use matters the least. Differences in responses suggest that while students adapt well to digital payments, their attitudes, and available payment option affect their behavior.

Students feel that queue management was mostly effective, with technology helping the most, followed by monitoring and feedback. However, queue strategies are seen as the least effective. Some students have different experiences, showing that queue management could still be improved.

Cashier efficiency is rated as moderately good. Strengths include proper staffing during busy hours, accurate transactions, and good knowledge of payment methods. However, handling peak hours and reducing wait times remained challenges, suggesting the need for better service flow.

Both student payment behavior and queue management influence cashier efficiency, but queue management has a bigger impact. While better payment behavior helps, improving queue strategies, technology use, and monitoring boost cashier performance even more. The more positive the students' payment behavior, the better the queue management, the more efficient the cashier is.

Queue management is the best predictor of cashier efficiency, followed by student attitude. This means improving queue strategies would have the biggest effect, while encouraging students to have a good attitude toward payments would also help. Other factors have



little to no impact. Focusing on these areas can make the university's payment and queue systems more efficient and improve student satisfaction.

Policymakers maybe advised to create or amend regulations that support more efficient systems or promote digital payment adoption in schools.

Administrators may implement structured queue management strategies, increase staffing during peak hours, and invest in technology-driven payment systems to improve transaction speed and accuracy.

Technology providers are encouraged to develop user-friendly, secure platforms tailored to educational settings.

Private Schools might adopt modern cashiering systems, improve staff training on multiple payment methods, and implement feedback mechanisms to monitor efficiency. They may offer both online and offline payment options to cater to different needs, invest in systems that simplify payments, and proactively communicate improvements in payment security and efficiency to parents, students, and teachers.

Cashiers and Administrative Staff may undergo continuous training on transaction accuracy, customer service, and technology adoption to enhance their proficiency. They may also collaborate with administrators to improve queue management and reduce congestion, especially during peak hours and focus on providing quick, efficient, and friendly service while embracing new technology to speed up transactions.

Teachers may educate students on the importance of timely payments and digital payment literacy to foster responsible financial behaviors. They may also provide feedback on payment systems and advocate for simpler, stress-free payment processes while participating in training to improve their comfort with technology.

Parents are suggested to familiarize themselves with available payment methods and encourage their children to utilize digital options for smoother transactions. They may also encourage their children to adopt these systems, helping to create a positive attitude toward digital payments.

Students might develop a proactive attitude towards payments by utilizing technology-driven solutions and adhering to payment deadlines. They may offer feedback to help improve payment and queue management systems, stay open to new innovations like digital check-ins, and maintain a positive attitude toward the process, which will contribute to smoother and faster transactions.

Future researchers are encouraged to explore additional factors influencing cashier efficiency, such as customer satisfaction, system automation, and emerging payment technologies, to provide further insights for institutional improvements. They may explore ways to optimize payment systems, study user behavior to understand how to build trust in digital payments, and investigate effective queue management strategies, using new technologies to enhance the overall experience.

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