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UPI vs Cash: A Comparative Study of Spending Patterns Among LPU University Students

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ABSTRACT: ***The rapid development of online financial operations in India has significantly changed the spending patterns of younger customers. One of the most accepted digital payment platforms has emerged in the form of Unified Payments Interface (UPI), which is known to be fast, convenient, and user-friendly. Nevertheless, cash is still relevant especially in small or casual transactions. This paper compares and contrasts spending habits of students at Lovely Professional University (LPU) who pay using UPI and cash and examines the impacts of each mode of payment on the financial behaviors, the frequency of transactions, and the general spending habits of students. The structured questionnaire was used to collect primary data of 124 students of the various programs and demographic backgrounds. Statistical analysis - including frequency analysis, descriptive statistics, Cronbachs Alpha, Chi-square tests, Kruskal-Wallis tests, Mann-Whitney U tests, and Spearman rank correlations- was performed using SPSS. Findings reveal that UPI has become the payment system of choice to most students. Nevertheless, UPI encourages more micro-transactions and impulsive expenditure whereas cash is more likely to promote more prudent financial practices. The paper points to the need of better financial literacy in students to enable them to spend money responsibly in an ever more digital economy.***

Keywords: UPI; digital payments; spending patterns; impulse buying; financial literacy; student behavior

I. INTRODUCTION

Digital payments have now become an essential part of the contemporary financial system and provide consumers with quick, secure, and convenient alternatives to cash, namely, transactional. The global trend to computerized payment systems has been instigated by the blistering internet penetration and the embrace of mobile technology which have changed the financial habits of the nations. In 2022, 195 million real-time digital transactions were made worldwide, of which 46% transactions were made by India (NPCI, 2023). This transformation has been driven mostly by the Unified Payments Interface (UPI), which was introduced in 2016 by the National Payments Corporation of India (NPCI) to enable instant bank-to-bank payments, without the need of card details or account numbers. Over 10 billion transactions of ₹18,22,949.42 crore (around USD 189 billion) were processed through UPI in August 2023 (which is 84% of the total digital transactions in India) (NPCI, 2023).

This rapid growth notwithstanding, cash still occupies an important role in the Indian economy, especially among some groups of the population and transactions. University students being the main users of digital payment technology, can be viewed as a particularly topical segment to explore the behavioral implications of such a change. The combination of UPI and cash in the every day finances of students is a subject of significant concern to issues of spending control, impulse buying and financial discipline - issues hitherto not sufficiently covered in the existing literatures in the Indian university setting. This research fills this gap by providing a systematic empirical research in Lovely Professional University (LPU), Phagwara, Punjab.

The aims of the study are as follows:

1) Primary Objectives

- To make a comparison between the spending behavior of UPI and cash using students in Lovely Professional University.
- To determine which UPI platforms are the most used and why they are more preferable than cash.
- To examine the preference of the students to UPI payment rather than the cash payment.

2) Secondary Objectives

- To examine the rate at which users of UPI and cash use it on a daily basis.
- To determine the effect of payment mode on impulse buying behavior.
- To determine the types of expenditure where UPI or cash is mostly utilized.
- To learn what students think about convenience, security and financial control.
- To advise on measures to be taken to facilitate prudent expenditure amongst students in the university.

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II. REVIEW OF LITERATURE

This study is richly theoretically and empirically based on the literature on digital payments, consumer psychology and student financial behavior. The authors of Dahlberg et al. (2008) found the convenience, cost efficiency, and interoperability as the major factors leading to mobile payment adoption. The World Bank Global Findex Database (2021) has registered an increase in the adoption of digital payments both in the global and low- and middle-income economies such as India with the highest growth of 52 to 64 percentage points between 2017 and 2021.

In the Indian setting, Aggarwal et al. (2018) discovered that the 2016 demonetization was a tipping point to the adoption of UPI. Rathore and Sharma (2021) discovered that the age group of 18-25 years were the highest users of UPI due to peer influence and digital literacy. In 2022, the RBI Annual Report (2022) established that UPI took up an estimated 52 percent of the total digital payment systems transaction by value in 202122.

Prelec and Simester (2001) proposed the well-known pain of paying model, which proved that cash payments create greater immediate psychological pain than digital payment and regulate spending. Soman (2001) proved that credit card users remembered fewer expenditures as compared to cash users and spent more. Thomas et al. (2011) generalized this observation to electronic payments, and they showed a higher hedonic buying among digital payers. Mishra and Singh (2017) determined that Indian mobile wallet users were 27% more likely to purchase impulsively when compared to users of cash.

In impulse buying, Rook (1987) described it as unthought buying that is impulsive and caused by external stimulus. Kang et al. (2015) discovered that mobile payment of one-tap had a major impact on impulse buying in e-commerce. Verma et al. (2022) found that UPI-primary users in a population of north Indian university students had a 35% higher rate of unwanted purchases, compared to cash users. Jain and Gupta (2019) discovered that more than 60 percent of UPI-using management students did not routinely monitor their transactions.

Theoretically, the papers are based on the Technology Acceptance Model (TAM) suggested by Davis (1989), according to which the perceived usefulness and ease of use determine the level of technology adoption, and the Theory of Planned Behavior (TPB) suggested by Ajzen (1991), which acknowledges the impact of social norms and perceived control on the formation of behavioral intentions. A combination of these frameworks explains the adoption of UPI, as well as the behavioral implications of this adoption among university students.

III. RESEARCH METHODOLOGY

The research design is mixed methods research design, which will include both quantitative structured survey data and qualitative thematic analysis of open-ended data.The data was gathered using a sample of 124 students of Lovely Professional University, Phagwara, Punjab, through a 20-item online questionnaire distributed on a structured questionnaire using Google Forms in February 2026. The respondents were selected through purposive sampling as people who were actively involved in UPI and/or cash transactions in their daily activities.

The questionnaire was divided into five parts: (1) demographic information, (2) payment preferences, (3) behavioral tendencies, (4) Likert-scale perceptions (5-point scale with 1 = Strongly Disagree and 5 = Strongly Agree), and (5) outcome assessment. The four Likert-scale questions (Q11: cash control, Q12: snack impulse, Q15: pain of paying, Q16: UPI insignificance) were answered numerically to be statistically analyzed with SPSS Version 26.

The statistical analysis was performed in six groups. Group A (Descriptive Statistics) entailed frequency analysis of the entire 20 items, and Likert mean/SD calculation. Group B (Reliability Testing) calculated the Cronbachs Alpha of the four Likert items. Group C (Chi-square Tests) compared preferences of payment methods and demographics. Group D (Kruskal-Wallis Tests) was used to compare ordinal spending variables in three or more groups. Group E (Mann-Whitney U Tests) was used to compare Likert perceptions of two independent groups. Group F (Spearman Rank Correlation) was used to test the relationship among ordinal behavioral variables.

IV. DATA ANALYSIS AND INTERPRETATION.

The Descriptive Statistics of Group A are presented below:

All 20 items of the survey were analyzed using frequency. Table 1 shows demographics of respondents. The student sample size of 124 was almost equal between males and females (Female: 46.0%; Male: 44.4%; Prefer not to say: 9.7%). The dominant age group was 19-20 years (33.9%), followed by 21-22 years (32.3%). Management/BBA/B.The biggest programme group (46.8%) was comprised of Com students. The greatest cohort (41.9 percent) was comprised of third-year students. The largest living-type group was the residents of the PG/ Flat (37.1%), and the Day Scholars and Hostel residents (31.5% each). There was a wide distribution of income among the four brackets.

Table 1: Demographic Profile of Respondents

Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	57	46.0
	Male	55	44.4
	Prefer not to say	12	9.7
Age	17-18 years	12	9.7
	19-20 years	42	33.9
	21-22 years	40	32.3
	23+ years	30	24.2
Programme	Management/BBA/B.Com	58	46.8
	Engineering	21	16.9
	Arts/Humanities	18	14.5
	Other	14	11.3
	Design	13	10.5
Year of Study	1st Year	22	17.7
	2nd Year	26	21.0
	3rd Year	52	41.9
	4th Year and above	24	19.4
Living Type	PG/Flat	46	37.1
	Day Scholar	39	31.5
	Hostel	39	31.5
Monthly Income	Below ₹3,000	35	28.2
	₹3,000-₹6,000	30	24.2
	₹6,000-₹10,000	25	20.2
	Above ₹10,000	34	27.4

Source: Primary Data, 2026

Descriptive statistics of the four Likert-scale perception items in a 1-5 scale are provided in Table 2. The means of all four items are within the range of 3.22-3.34, which suggests that there is a neutral to slight agreeable tendency among the respondents. It was the highest mean of the item (Q15) with M = 3.34, SD = 1.39, which indicates that students are moderate in their agreement that cash payment is psychologically more painful than UPI payment.

Table 2: Descriptive Statistics — Likert-Scale Perception Items (N = 124)

Item	Variable	N	Mean	SD	Min	Max
Q11	Cash provides better financial control	124	3.24	1.30	1	5
Q12	Likely to buy snacks because UPI is easy	124	3.23	1.27	1	5

Q15	Paying cash feels more painful than UPI	124	3.34	1.39	1	5
Q16	UPI makes small purchases feel insignificant	124	3.23	1.35	1	5

Source: Primary Data, 2026

A. Group B: Reliability Analysis (Cronbach)

The Alpha value of Cronbach was calculated to evaluate the internal consistency of the four items in the Likert scale. The analysis produced 0.370 (Alpha) that is less than the traditional acceptable value of 0.70 (Nunnally, 1978). The deleted items alphas varied between 0.244 (when Q11 was deleted) and 0.340 (when Q16 was deleted), which means that the deletion of a single item does not make much difference to the reliability. This result indicates that although the four items are connected to payment psychology, they gauge different, but not unidimensional constructs. The items are therefore not viewed as a composite scale but individually. This result can be attributed to the multi-dimensionality of payment psychology as the concepts of financial control, impulse buying, pain of paying, and trivialization of small purchases are related and conceptually different constructs (Prelec and Simester, 2001).

Table 3: Cronbach's Alpha - Reliability Statistics

Statistic	Value
Cronbach's Alpha (all 4 items)	0.370
Cronbach's Alpha if Q11 deleted	0.244
Cronbach's Alpha if Q12 deleted	0.309
Cronbach's Alpha if Q15 deleted	0.328
Cronbach's Alpha if Q16 deleted	0.340
Number of Items	4
N	124

Source: SPSS Output, Primary Data

B. Group C: Chi-Square Tests.

The chi-square tests of independence were performed five times to determine the relations between nominal categorical variables. Table 4 shows the results. There were two significance associations which were statistically significant at $p < 0.05$.

Table 4: Chi-Square Test Results

Test	Variables	χ^2	df	p-value	Result
C1	Payment Method × Gender	5.95	4	0.203	Not significant
C2	Payment Method × Living Type	12.65	4	0.013	Significant*
C3	Impulse Mode × Payment Method	13.44	4	0.009	Significant*
C4	Expense Change × Payment Method	3.00	6	0.809	Not significant
C5	Small Payment × Income Group	0.76	3	0.860	Not significant

**p < 0.05*
Source: SPSS Output, Primary Data

Test C2: Payment Method × Living Type (2 = 12.65, 4 = 4, p = 0.013): There was statistically significant correlation between the choice of payment method and the living type of students. Crosstabulation indicated that UPI was most used by hostel residents as compared to their group size due to the fact that they are financially independent of their families. Day scholars had a relatively higher cash usage, perhaps indicating family support and increased access to cash. This result confirms the hypothesis that financial independence is a motivator to adopt digital payments among university students.

Test C3 - Impulse Mode x Payment Method (2 = 13.44, 4, p = 0.009): The mode of payment that students mainly use and the mode they consider to be the stronger impulse purchase stimulus was found to be significantly associated. Among UPI-primary users, 49.0% recognized UPI as the impulse mode as opposed to 25.6% of cash-primary users. This confirms the main hypothesis of the study that the frictionless design of UPI encourages spontaneous buying behavior.

C. Group D: KruskalWallis Tests.

The use of three Kruskal-Wallis H tests was done to compare ordinal variables with three or more independent groups. Table 5 provides results. All three tests did not provide statistically significant results at $p < 0.05$, meaning that there is no significant difference in terms of the frequency of overspending, daily spending levels and expense tracking behavior among the payment groups, living types and income groups respectively in this sample.

Table 5: Kruskal–Wallis Test Results

Test	Dependent Variable	Grouping Variable	H	df	p-value	Result
D1	Overspending frequency (Q10)	Payment method (Q7)	1.73	2	0.422	Not significant
D2	Daily spending (Q9)	Living type (Q5)	2.64	2	0.267	Not significant
D3	Expense tracking (Q14)	Income group (Q6)	1.46	3	0.692	Not significant

Source: SPSS Output, Primary Data

The non-significant findings of the Kruskal Wallis tests indicate that although preferences of payment methods may vary by type of living (as demonstrated in the Chi-square Test C2), the strength of behavioral outcomes (i.e. frequency of overspending and expense tracking) does not differ significantly among these demographic groupings. This observation shows that the behavioral risks of UPI are widely dispensed to the student population irrespective of income or living arrangement, which makes the argument to support universal financial literacy interventions, instead of targeted ones, more convincing.

D. Group E: MannWhitney U Tests.

Two Mann-Whitney U tests were used to compare the Likert-scale perceptions of two independent groups. Table 6 shows results. The results of both tests were not significantly different, meaning that there is no significant difference between the male and female students in terms of their perception of cash as a control mechanism, and that UPI-primary users do not differ significantly with cash-primary users in terms of their perceived pain of using cash to pay.

Table 6: Mann–Whitney U Test Results

Test	Dependent Variable	Groups	Mean Rank (G1)	Mean Rank (G2)	U	p-value	Result
E1	Cash control perception (Q11)	Male vs Female	M=3.31 SD=1.30	M=3.28 SD=1.31	1609.0	0.805	Not significant
E2	Pain of paying (Q15)	UPI vs Cash users	M=3.49 SD=1.43	M=3.26 SD=1.37	928.0	0.577	Not significant

Source: SPSS Output, Primary Data

Although the average scores of paying were marginally greater among UPI-primary users (M = 3.49) than cash-primary users (M = 3.26), this was not significantly different (p = 0.577). This implies that the psychological cost difference between cash and UPI is not contingent on what is the primary mode of payment by both groups, that cash is perceived as moderately more painful than UPI, which is why even cash users can sometimes be found to exhibit impulse buying behavior..

E. Group F: Spearman Rank Correlation.

Three Spearman rank correlations were calculated to test the relationships between ordinal behavioral variables. Table 7 gives the results**.**

Table 7: Spearman's Rank Correlation Results

Test	Variable 1	Variable 2	rho	p-value	Result
F1	Overspending frequency (Q10)	Expense increase after UPI (Q20)	0.048	0.596	Not significant
F2	Pain of paying (Q15)	Cash control perception (Q11)	0.132	0.144	Not significant
F3	Daily transactions (Q8)	Daily spending (Q9)	0.119	0.188	Not significant

Source: SPSS Output, Primary Data

All the three Spearman correlations were not significant. The fact that all three have positive values (rho > 0) is, nevertheless, conceptually consistent with the theoretical framework of the study: students who spend more money through UPI are slightly more prone to reporting expense increases; students who experience a higher level of pain with the cash use slightly more often are also more likely to perceive the cash as providing less control; students who make more transactions daily are also slightly more likely to report higher daily spending. The lack of statistical significance could be attributed to the ordinal categorical nature of the data and the small difference created by response options in brackets. These relationships could be more accurately tested in future studies with continuous financial records.

V. FINDINGS AND DISCUSSION

Analysis provides a number of significant findings. First, UPI is the most prevalent payment method at LPU, with 41.1% of the students using UPI most often, with 58.1% of students using UPI even to make micro-transactions under 100. Second, 83.1% of the students indicated that they had overspent through UPI at least once, which validates the use of UPI in promoting unplanned spending in line with the suffering of paying literature (Prelec & Simester, 2001; Soman, 2001). Third, the preference to payment method significantly correlated with the living arrangement (2 = 12.65, p = 0.013), where hostel and PG residents were more likely to use UPI, which indicated their economic autonomy. Fourth, UPI was also notably related to identification of impulse purchase (= 13.44, p = 0.009), with UPI-primary users being 1.9 times more likely to report UPI as their impulse trigger than cash-primary users. Fifth, 50.0 percent of the students agreed that cash gives them more financial control and 50.8 percent agreed that paying with cash is more psychologically painful - empirically testing the pain of paying paradigm within the Indian student population. Sixth, Cronbachs Alpha (= 0.370) is low, which validates the idea that payment psychology is multidimensional and that it cannot be reduced to a single measure, and the multi-item scales should be used in future studies. Seventh, the non-significant Kruskal Wallis and Mann Whitney U values show that the behavioral risks of UPI are widely-distributed among demographic subgroups, implying that universal - and not specific -financial literacy interventions are required.

VI. CONCLUSION

This paper has empirically established a positive relationship between UPI adoption and higher levels of unplanned spending and impulse buying amongst Lovely Professional University students. The statistically significant results - the correlation between payment method and living arrangement, and the correlation between payment method and the identification of impulse purchase - are strong empirical evidence that the adoption of digital payments has behavioral effects beyond the convenience of the transaction.

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This data empirically supports the pain of paying framework (Prelec & Simester, 2001) and the TAM (Davis, 1989), which can be considered valid in the Indian context of digital payments.

University level financial literacy interventions are necessary in the responsible implementation of UPI. By incorporating the comfort of UPI with the regularity of budgeting and tracking of expenses, students can achieve the advantages of digital payments without the behavioral costs of frictionless spending. Universities, policymakers, and NPCI ought to partner to embed financial wellness functionalities in UPI platforms and provide students with systematic financial literacy education to first and second-year students who are most at risk.

Future studies must utilise longitudinal design to follow the same cohort through years of study, continuous financial data (as opposed to bracket-based responses) to gain a deeper picture, multiple universities in various Indian states should be used as a sample, and intervention studies should be designed to quantify the effect of financial literacy programs on UPI spending behaviour.

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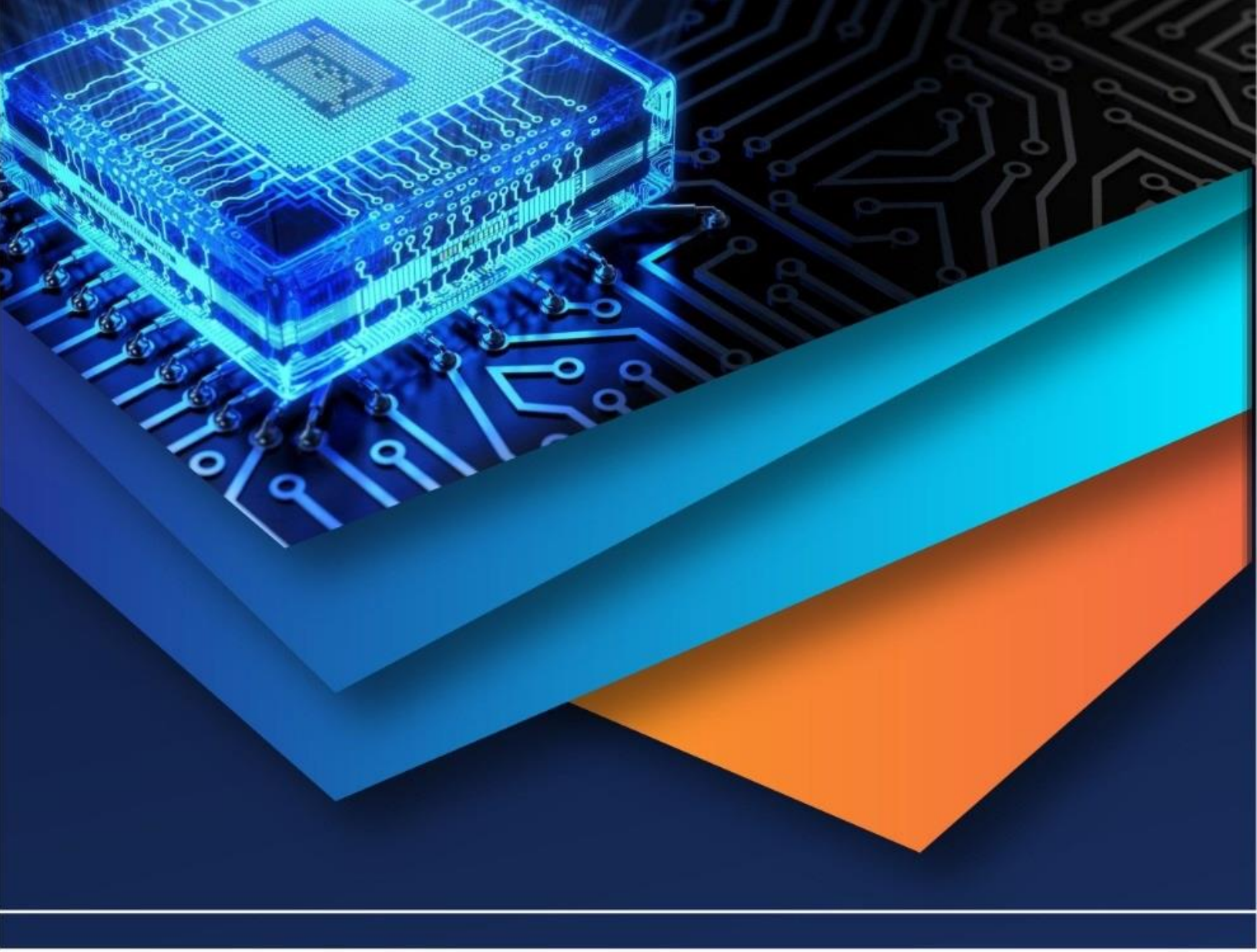

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