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DIGITAL PAYMENTS FOR RURAL INDIA - CHALLENGES AND OPPORTUNITIES

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Abstract - Rural India has significant impact on the economic progress of the country, and with the emerging changes of ICT penetration, and the impact of demonetisation, alongside the digital initiatives carried out for rural segments, the need for improving the trends of digital payments model in rural India is very important. Considering the benefits like transparency in transactions, scope for curtailing parallel economy and improving the ease of business, it is very essential that the transformation towards digital payments, even in the rural economy is empowered. Some of the revolutionary developments in the recent past like launch of many digital wallets like – Paytm, Mobiwik, Free Charge etc. and government launching many UPI (united payment interface) solutions and BHIM app for smooth transition to digital payments, there are significant developments taking place.

Stats from the market research also depict considerable rise in digital transactions post de-monetisation period. In terms of challenges, certain key factors like limited options for digital transactions based on feature phones, issues of awareness towards digital transactions, constraints of PoS transactions etc are some of the intrinsic issues that impact the digital transactions.

Despite the fact that the social trends are being very positive in rural segments for embracing the digital payments, still there are considerable challenges too in succeeding the paradigm shift. The futuristic steps like enabling digital payment transactions based on Aadhar numbers could be a game changers if handled effectively. In this manuscript, the factors that impact and support towards digital transactions in rural economy is reviewed taking stock of current trends, market analysis, readiness of the infrastructure and the stakeholder accountabilities, to gain insights to the critical success factors to be addressed. It is imperative from the review of research reports, statistics over the digital payment trends, that if some of the key macro challenges, business limitations and consumer related issues are addressed, there could be potential developments envisaged in the process.

Keywords - digital payment, rural ecommerce, UPI, BHIM, M- Wallet, Digital Divide, Rural and Urban India, Government, PoS, digital transactions, demonetization, Opportunities for Digital Payments

I. INTRODUCTION

Indian economy is one of the fast growing economies of the world. Despite of global turbulences of economic conditions, Indian economy has been focusing on development. In the recent past, there are significant developments that has taken place in the Indian financial system, which has led to huge transformations, trends and changes in the business dynamics[1]. Though the government of India has been focusing on the digital transactions initiatives since last few years, the actual impact of digital payments has taken place in India in significant manner post the demonetization period.

India economy has the intrinsic structure of rural and urban economic developments. Majority of the Indian economy depends on rural economy, and only when the digital payment methods become an integral part of rural economic development, the digital initiatives could be considered as successful. In the recent past, digital payments has gained momentum in the country, both in the case of rural and also the urban segments [3]. India has predominantly been a cash driven economy and the culturally the deep rooted trends of cash based purchases has widely been the economic culture. In wake of the government initiatives towards transformation towards digital

economy, and many private companies emerging in the space of digital transaction solutions like the E-Wallets, Mobile app solutions (UPIs), payment bank licenses issued by RBI, it is imperative that the market is gearing up towards more transparent and compliance based system, and of digital trends.[2] For successful implementation of digital transactions and digital banking system, certain key processes that are very essential are net/mobile banking, more of ecommerce presence in rural segments, digital transaction solutions like the PoS solutions usage in merchandise, usage of plastic currency etc.

But the crux factor that has to be taken in to consideration is about how effectively the system is adaptable in the rural segments of the country, considering the opportunities and challenges according to the existing scenario. In this research paper, the emphasis is on gaining insights in to the opportunities and challenges that are envisaged in the digital payments system penetration in to rural segments. [3]

II. DIGITAL PAYMENTS IN RURAL SECTOR

Rural sector holds significant importance in the economic development of the country, and in the recent past, many fin-tech companies are focusing on

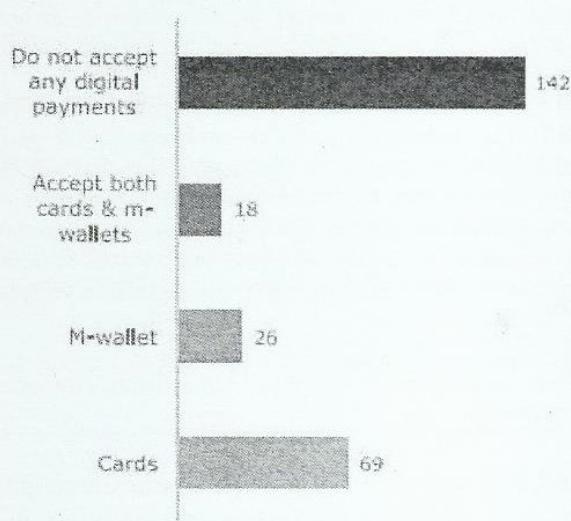
rural markets to increase its operational base. For instance, many of the mobile wallets and ecommerce companies are focusing on the rural locations and are adapting strategic approach towards attaining a good market share. [1]

Also, some of the recent developments like the demonetization and its related impacts has led to huge transformation in the market dynamics. Unlike the pre-demonitization period where very few merchants and consumers from rural segments were using the digital payment solutions, post-demonitization has seen exponential growth in the number of users using PoS and digital payment interface. Timed issuance of payment banks, easing the norms of mobile wallet

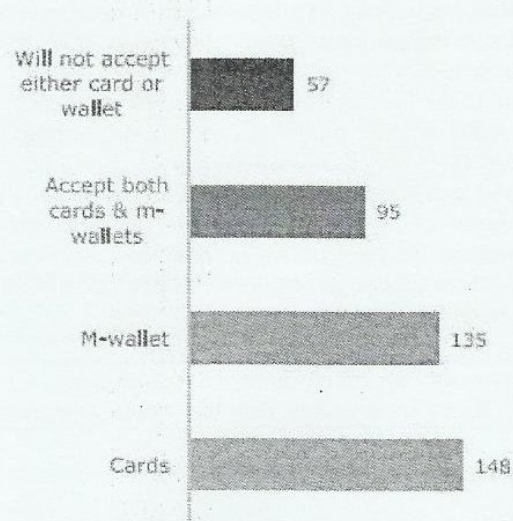
transactions, increasing the bandwidth to rural locations, and government encouraging public with incentive schemes for using the UPI (United Payment Interface), reducing the service tax over digital transactions over government e-services signify that there is huge transformation taking place towards digital payments.[2]

For instance, the fig.1 depicted below indicates the kind of development that has taken place in the digital transactions in the recent trends. The impacting factors attributed to such transformation are increasing compliance requirements, demonitization impact, incentives and initiatives from governments encouraging digital transactions.

Starting point for all the merchants covered in the survey



Future state of digital payment adoption as indicated by the merchants



Source: [13] Figure 1 Pre & Post Demonitization Trend for Digital Payments

Fuelling such growth of digital payments depends on varied factors. There are many opportunities and challenges that are envisaged by the key stakeholders in the digital payments environment.

2.1 Opportunities for Digital Payments

Digital payments in India is at nascent stage, and there is a push from varied quarters towards adapting the platform of digital payment solutions. Some of the reverent steps that has been incorporated in the recent past towards improving the scope of digital payments are: [3]

Limiting the scope for cash payments

- RBI has regulated the cash payments in a phased manner. For example, imposing restrictions and tax on cash purchase of jewellery beyond a prescribed value.
- Imposing transaction charges for cash payments for payment to vendors, suppliers and services etc.
- Imposing higher transaction charges for banking transactions like cash with draws, deposits etc.

- More scrutiny over the cash transactions [4]

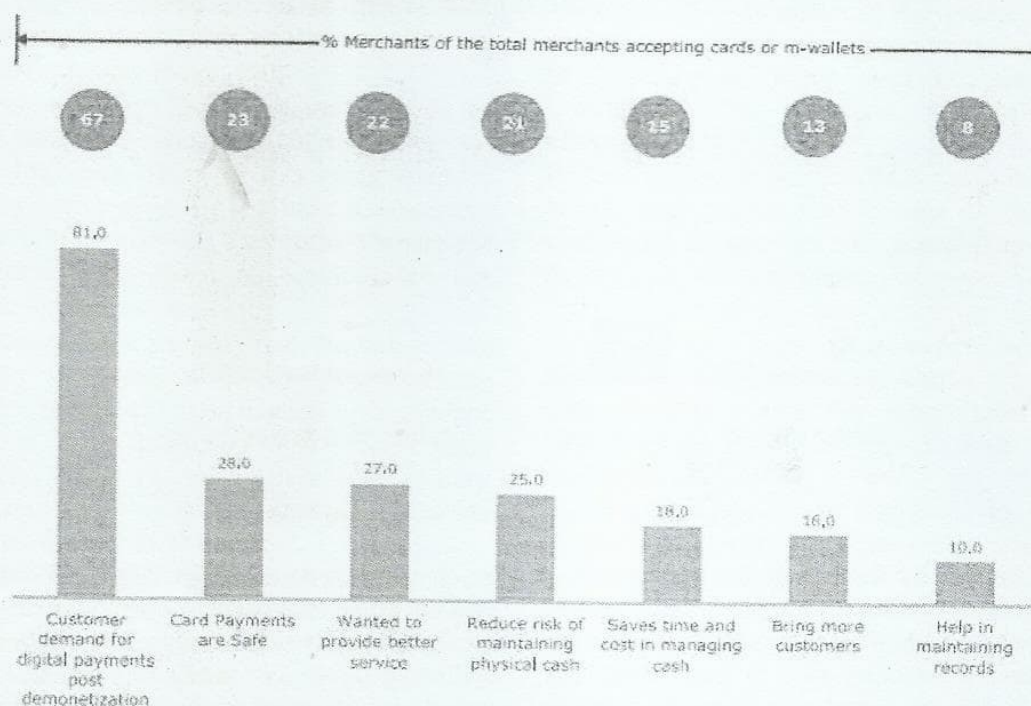
Launch of More Digital Payment Solutions

- Though India is cash based economy, slowly the transition has started towards digital economy.
- RBI issuing payment bank licenses to many fin-tech companies like Paytm and many competitive mobile wallet solutions emerging from existing banking companies lead to foray of digital payment options available for stakeholders like merchants and consumers [3]
- Strategic launch of UPI solutions like BHIM by Government of India, to enable hassle free digital transactions on a government platform leads to more secured platform for consumers.
- Aadhar based payment solutions that are emerging strongly in to the Indian market signifies potential scope of carrying out digital payments even with feature phones. [5]

In a recent report published in collaboration by CII and Deloitte, the study emphasize that there is

significant raise in the demand from consumers for digital payment modes. Many merchant

establishments are keen on using the digital payments as the solution for retaining the customer base.



Source: [13] Figure 2 Impacting Factors for Digital Payments

From the represented fig.2, it is imperative that the customer demand for digital payments are on high than the earlier periods. However, the other notable fact is that over the recent past, even prior to demonitization, there are significant developments taking place in the system. For instance,

Incentivising Consumers

- Many private digital wallet companies are offering value added services to the customers
- Consumers are offered value proposition in terms of ease of usage, cash back offers, discounts for using their mobile wallet platforms etc.
- Government announcing various incentive schemes and reward programs for the consumers, to attract them towards digital payments. [3]
- RBI reducing or terminating the cross transaction cost for the bankers and UPI solutions to encourage them reduce the cost of transaction to the end users.
- More PoS solutions being procured and made available to the merchants are significant step towards improving the system. [6]
- Launching awareness programs, and encouraging as many feasible ways (like feature phone based digital transfers facilitated using Aadhar card etc.) has led to way where more number of shops and establishments considering the digital payment solutions in rural sector.
- Incentives allotted by Govt. as discounts for fuel purchase using the digital payments like debit/credit cards in the outlets signify the

strategic approach towards encouraging digital transactions. [6]

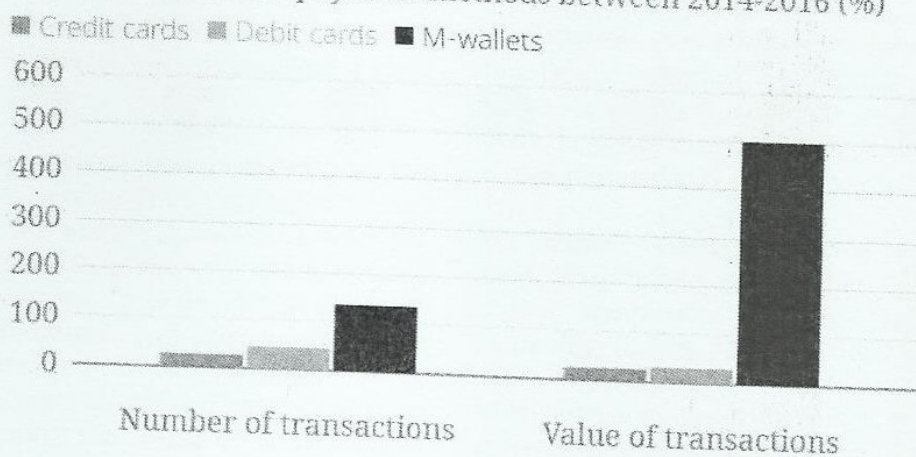
2.2 Market Drivers

It is imperative from the recent reports that there is significant development in the case of digital payments that are taking place. Some of the key and influencing factors that are supporting the digital transaction processes are:

- Compared to the earlier trends, in the current scenario the process of mobile banking, IMPS solutions and other such related developments has got simplified.
- Increasing number of ecommerce companies offering their services in the rural segments also are the other key element that is driving the digital transaction solutions.
- Direct and indirect initiatives from government towards improving the banking ease, compliance standards and other such factors play a key role in the process. [4]
- Few of the significant initiatives like issuance of "RuPay cards" linked with Jan Dhan accounts (Zero balance accounts) opened up in massive scale, Kisan Credit cards issued to the farmers, drive in terms of enabling PoS solutions to rural merchants etc. has created fundamental platform that is essential for gaining momentum of digital payments in the rural segment. [5]

The figure-3 depicted below signifies the growth of digital transaction instruments in the recent past and how the emerging trends are gearing up for potential development.

Growth of different payment methods between 2014-2016 (%)

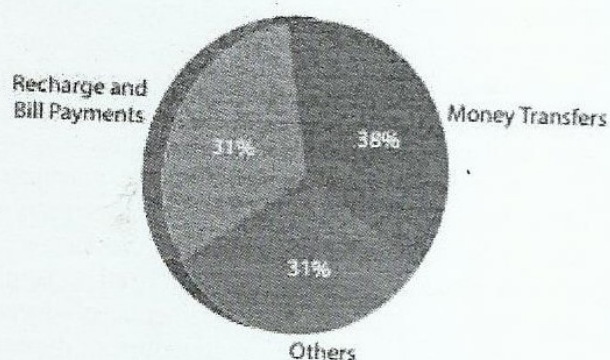


Source [4] Figure 3 Growth of Different Payment Methods

The value of transaction through M-wallets according to the statistics detailed above signify phenomenal growth. However, taking in to consideration that the figures indicate transaction size of both rural and urban, still it can be stated that there is sizeable development in the market and if it right dynamics are adapted certainly the digital payments could penetrate to much higher levels in the market.

Payworld one of the digital wallet solutions in India has enabled a rural village to go online and ensure that all the transactions that are carried out in every shop of the village is on digital transactions. Despite of few challenges that are envisaged in the process, still the issues are more effective. According to a report cited in a leading business magazine "Payworld, which had over 100 million users and 1 lakh retail touch points across 630 cities and 80,000 villages till the first week of November, has seen a 25% jump in new users — mostly from rural and semi-urban areas — over the last two weeks." [7]

M-wallet Market by Type of Services (%), FY 2017



Source: RBI, RNCOS

Note: Others include using M-wallet for shopping of clothes, electronics, online travel, movie, hotel and other bookings and others items

Source: [14] Figure 4 M-Wallet Market by Type of Services

As per the reports depicted by ASSOCHAM, the classification of M-wallet spends could be majorly attributed to few of the segments represented in the following figure. For the fiscal year 2017, the type of spends could profoundly be for digital transfers between the teams, and recharge and utility bill payments as the major segment.

It is imperative that there are many developments that are taking place in terms of improving the digital transactions in the rural segment. However, the crux is to address the quantum of challenges that are envisaged in the process and if it can be addressed, there are effective developments that could be envisaged. [10]

III. CHALLENGES OF IMPLEMENTING DIGITAL TRANSACTIONS IN RURAL MARKETS

Prior to the demonitization period, usage of digital payments was an option. However, in the rural market segment where cash was the king, the option of digital payments were exercised by very few retail outlets and also the consumers were wary of using such trends. Though, with the rampant penetration of ICT such trends has been changing, still the quantum of digital payments has gone up significantly post the demonitization period. [9]

Phenomenal developments has taken place in the process of digital payments and many mobile wallet companies, PoS service providers, ecommerce players, and government initiatives has been focusing on improving the digital payment solutions. But some of the significant challenges that is thwarting the desired growth and propelling the market towards digitization are:

3.1 Macro Level Challenges

- Consumers are yet to get rid of the cash based transaction habits, as for decades India has been a cash based economy

- Digital divide in terms of awareness about using the digital solutions like smartphone based transactions, feature phone based transactions, usage of credit/debit cards at PoS solutions etc are some of the key issues. [10]
- The other significant issue of digital divide is the lack of bandwidth and reach of technology to various locations. Though, it is being sounded that every corner of India shall have ICT services in place, still in many of the locations where the installations were complete, services are not available for the customers. [9]
- (For instance, as a part of Govt. Initiative from Rajasthan towards streamlining the ration supplies, bio-metric verification of Aadhar details at the dealership has been made mandatory, however, the dealers could barely have connectivity to ensure timely verification and the public face challenges)
- Such instances signify that the digital payments modality can only be practical and true to nature, when the loop holes like connectivity, adequate PoS solutions and other such factors are addressed in quick turnaround time. [7]
- Availability of PoS solutions has also become a challenging issue. As the demand for PoS solutions has raised in a compounding way, and the demand is not adhered too, fast track progress of digital payments are getting impacted in rural locations.[8]

3.2 Consumer Challenges

Trust factor is one of the integral challenges to growth of digital payments in rural sector. Irrespective of whether it is attributed to emerging information security challenges, or lack of awareness of the consumers, still the challenge of gaining the trust of consumers is one of the key challenges facing the mobile wallets, digital transaction service providers like banks, fin-tech companies etc. [9]

Secondarily, the cost of transactions that are levied over the consumers is also a major concern. For example, over every debit card transaction, some retailers are charging the transaction cost from consumers and it is additional burden. To ensure that debit and credit cards are used prevalently, such transaction charges has to be evaded. [9]

Mobile wallet companies has certainly made the transaction process much simpler to the customers, but the costs charged over switching the money from wallet to bank accounts are again a key concern. As the mobile wallet companies are charging anywhere around 1% to 4% for transactions to bank accounts, consumers are wary of using mobile wallets for business transactions [7].

3.3 Business Limitations

In India, the modality of digital payments are at nascent stages and there is considerable need for

more effective laws, guidelines, and compliance trends that can support in improving the process.

Supply of PoS solutions in the market, leverage of technology, ease of compliance terms is also essential in encouraging more retailers, merchants and professionals to embrace the solution more effectively. [9]

Reconciliation of transactions for merchants from the banks, taking considerable time is the other key challenge impacting the acceptance of digital payments by the merchants.

Transactional issues like merchant accepting the digital payments from consumers, and in turn vendors and suppliers not accepting digital payments from such merchants are the other level of hurdle impacting the growth of digital payments in rural segments [12]

If the above issues are addressed in an effective manner, certainly the outcome can be more resourceful in improving the effectiveness of digital payments in the rural economy and attaining the objective of digital and cashless economy. [7]

CONCLUSION

India is among the fast emerging as one of the largest and strong economies. For sustained development and growth with robust economic development, certain integral factors like improved transparency, corporate governance and restricting the parallel cash based economy. Such developments could be feasible only with rural India too embracing the digital payments and digital transactions. Considering the quantum of opportunities that are unfolding for market dynamics of digital payments, if the challenges that are discussed are addressed and improved solutions in terms of UPIs, mobile wallets, and digital transactions with more secured features, ease of transactions and reduced cost of managing the digital payments could lead to more potential developments and supporting in improved conditions of digital payments processing in rural sectors.

In terms of capitalizing on the opportunities, it is very essential that the solutions has to be more robust and following are certain key policies that has to be in force for effectively implementing the digital payment solutions across the rural sectors

- Reducing the digital divide and increasing the awareness in the rural public
- Ease the complexities and enable end-of-day settlement process for the merchants (As small retailers and merchants need rotation of cash-flow in quick turnaround time for their business operations)
- Reduce the transaction charges over the digital payments and discourage cash transactions
- ICT infrastructure plays a vital role in successful adaptation of digital payments and hence there is intrinsic need to improve and offer requisite infrastructure for digital payments

- Emphasis on integrated system of digital payments that can reduce the existing challenges and support in quality outcome (For instance, ensuring more stringent laws for security breach, IT ACT for digital payment transactions etc.)

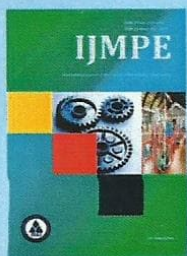
The aforesaid factors are key developments that could be more effective for enabling more digital payments taking place in the rural sectors.

REFERENCES

- [1] Dennehy, D. & Sammon, D., 2015. Trends in mobile payments research: A literature review. *Journal of Innovation Management*, 3(1), pp. 49-61.
- [2] EY, 2016. Mobile money — the next wave, s.l.: EY.
- [3] Horowitz, M. J., 2012. Self-Identity Theory and Research Methods. *Journal of Research Practice* Volume 8, Issue 2, Article M14,.
- [4] Jain, M., 2016. Three charts show how mobile wallets are exploding in India. [Online] Available at: <https://scroll.in/article/809228/three-charts-show-how-mobile-wallets-are-exploding-in-india-but-plastic-cards-are-still-ahead> [Accessed 23 Feb 2017].
- [5] PADMAAVATHY & ADALARASU, 2014. THE MODERN WALLET: MOBILE WALLET A DISTANT DREAM IN INDIA. *My Reseach Journals*, 3(12).
- [6] PANCHAL, S., 2016. UPI: When banks turn mobile wallets. [Online] Available at: <http://www.forbesindia.com/article/checkin/upi-when-banks-turn-mobile-wallets/43093/1> [Accessed 23 Feb 2017].
- [7] Acharyya, K., 2016. Demonetisation: Digital transactions meet roadblocks in rural India, effects felt everywhere. [Online] Available at: <http://www.firstpost.com/india/demonetisation-digital-transactions-meet-roadblocks-in-rural-india-effects-felt-everywhere-3166058.html> [Accessed 25 Feb 2017].
- [8] IMAP, 2017. Payments Industry in India, s.l.: IMAP.
- [9] Pahwa, N., 2016. Cash vs Digital Money: why going cashless is going to be tough in India. [Online] Available at: <http://www.medianama.com/2016/11/223-cashless-india/> [Accessed 23 Feb 2017].
- [10] PTI, 2016. 400-1000% increase in digital transactions after demonetisation, says government. [Online] Available at: <http://timesofindia.indiatimes.com/business/india-business/400-1000-increase-in-digital-transactions-after-demonetisation-says-government/articleshow/55897291.cms> [Accessed 26 Feb 2017].
- [11] PTI, 2016. Yes Bank launches offline digital transactions for rural areas. [Online] Available at: <http://www.gadgetsnow.com/tech-news/Yes-Bank-launches-offline-digital-transactions-for-rural-areas/articleshow/55721651.cms> [Accessed 17 Feb 2017].
- [12] Singh, R., 2016. Demonetisation: Why the challenge to take digital payment to rural India is as huge as the opportunity. [Online] Available at: <http://economictimes.indiatimes.com/news/economy/policy/sunday-et-making-rural-india-pay-digitally-and-challenges-post-demonetisation/articleshow/55640316.cms> [Accessed 25 Feb 2017].
- [13] Demonetisation and Merchants | The Promise, The Potential and The Practicality, Deloitte, <http://www.communicationstoday.co.in/images/reports/20170217-demonetisation-for-small-merchants-final-report.pdf> [Accessed 25-03-2017]
- [14] M-Wallet Report By ASSOCHAM, http://www.assochem.org/upload/docs/M-Wallet_Report_press.pdf

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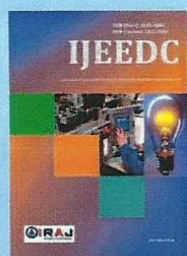
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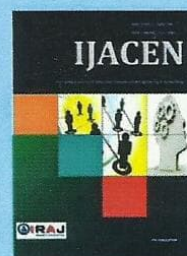
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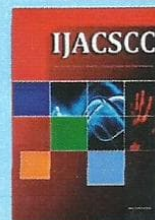


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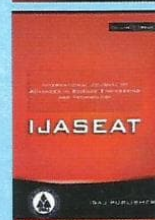


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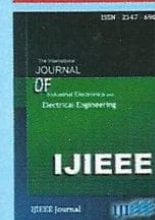


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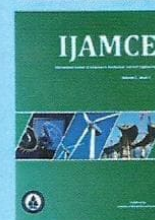


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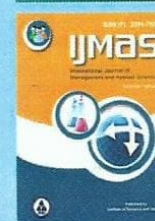
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