



Business Project 2

*Analysis of JazzCash strategy using
Quantitative Methods*

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Executive Summary

JazzCash is one of the major players in one of Pakistan's emerging and nascent industries – the fintech and financial services industry of Pakistan. Being a sister concern of the PMCL group, which is owned by VEON, headquartered in Amsterdam, JazzCash has established itself within the Pakistan fintech and financial services landscape by offering financial services to the masses. The fintech domain in Pakistan is quite nascent and it is an industry which is still establishing itself. Financial inclusion in Pakistan is quite low with traditional banking serving the higher societal classes and the lower societal class being subjected to little or no alternatives. This is the reason that cash is king in this region and majority of the population remains unbanked. This, in turn, leads to difficulty in implementing and ensuring taxation policies and seriously impacts the revenue collection of the Pakistani government. To bridge this gap, fintech players like JazzCash have made a name for themselves in the market and aim to serve customers which traditional banking cannot accommodate.

This report aims to examine the fintech landscape of Pakistan with a specific focus on JazzCash and identify the currently prevalent use cases within the fintech domain and their implication on the organization strategy and revenue ambitions. It studies consumer behavior within the fintech universe and explores different use cases of the fintech domain. For the purpose of analysis, the quantitative method selected is Cluster Analysis performed on open-source software Jupyter using Python language which sifts through all data points gathered from customers over a period of 4 months and classifies each type of behavior in to similar lookalike clusters. Once the clusters are formed, they are analyzed and distinct user behaviors are found in the clusters which are further analyzed on demographic, psychographic and GSM variables to create a unique customer profile. Moreover, after identifying the key clusters and creating a unique customer profile according to distinct behaviors, the report aims to compare the organizational strategy with the behavior of the user base and suggests corrective actions required to capitalize on the vast fintech landscape of Pakistan in accordance with the organizational objectives.

Lastly, the report aims to analyze, qualitatively, the currently implemented strategy and initiatives and suggest corrective actions to capitalize on the vast opportunity which exists within the fintech domain. The report explores more use cases which can be incorporated to ensure a profitable business model along with value addition for the end user.

2.1 – Definition of Fintech:

The word Fintech is a combination of two words, “financial” and “technology”. The concept of fintech revolves around these two words as technology is used to improve the delivery of financial services and enhance their scope for the end user. In other words, fintech is the provision of technology that supports financial transactions to benefit both businesses and consumers. Over the last few decades, fintech has grown to be one of the most popular sectors of investment, particularly seeing a rise in startups related to it. The start of the fintech “revolution” can be traced back to the formation of PayPal in 1998, arguably the first modern fintech company.

One of the main reasons for rapid growth of fintech adoption is increasing number of startups that are based on this concept. They employ newer methods and better technology to help improve financial transactions and the way they are carried out. For instance, instant funds transfer can be done with payment applications such as Venmo, which simplifies the entire funds transfer process. Previously, one had to visit the bank or the ATM to get their funds, making the process more difficult for the end user. However, with a cash transfer application, the concept of fintech is applied and people can send and receive funds instantaneously, in every sense of the word.

2.2 – Applications of Fintech:



Fig 1: Applications of Fintech

This dramatic rise in fintech startups has pushed traditional financial service providers such as banks and treasuries to adopt digital technologies for their own customer base as well. Many have moved to acquire such startups to get a head start on their competitors and acquire an existing market share. As a result, banks have begun to offer these services as well to stay relevant and compete with fintechs taking the market share for financial services.

There are multiple components and applications of fintech that are in existence. From simple digital payments to complex Artificial Intelligence and Machine Learning algorithms, and blockchain technologies, fintech has many components and is now a vital part of the financial world (S&P report). It is used to disburse loans, pay bills, transfer funds, manage wealth digitally with robotic advisory that gives suggestions for money management, and maintain anonymity on blockchain technologies.

2.3 – Fintech & Financial Services in Pakistan:

Pakistan has seen rapid growth in introduction of new fintech companies and ventures. Being the sixth most populous country in the world, there is a large untapped market that has attracted investors and innovators alike. Moreover, there are multiple barriers of entry into the banking system with strict regulation, lack of awareness and limited brick and mortar banking branches and ATMs (PIDE report). This leads many to rely on cash for their primary financial needs. The fact that 85% of Pakistan's population does not have access to traditional banking, makes it an even more attractive investment destination. Furthermore, the boom in telecom sector has seen more than 100 million people use the internet, providing further fertile ground for rapid fintech adoption. The smartphone adoption also stands at an astonishing 85% which is an excellent base for fintechs to utilize.

In Pakistan, EasyPaisa was the first mover in the modern fintech industry in 2009, and still holds a significant market share even after intense competition from new entrants. EasyPaisa allows users to complete bill payments and cash transfers through their mobile phones. This was a game changer as tens of millions of Pakistanis do not have access to a traditional bank account. The potential of EasyPaisa can be judged by the fact that Ant Financial, a subsidiary of Alibaba acquired a major stake in Telenor Microfinance Bank for a whopping \$184.5 million. This step showed the world that there was immense potential in the Pakistani market for fintechs. There used to be a perception that Pakistan's market is not viable since millions struggle with access to basic human needs, with poverty being the reality for many across the country. However, this investment put to bed any such concerns. Apart from EasyPaisa, JazzCash is also a large player, utilizing the millions of Jazz connections to expand its branchless banking network. SadaPay and NayaPay are among some new entrants that have penetrated the market and seek to redefine the scope of fintech in Pakistan.



Fig 2: Types of Fintechs in Pakistan

2.4 – Role of State Bank of Pakistan (SBP):

The State Bank of Pakistan recognizes the importance of innovation in the financial sector and is keeping close tabs on the developments in fintech. For this purpose, SBP is looking to establish a Fintech Facilitation Desk. Its purpose will be to provide a platform where fintechs can come and discuss different initiatives and find ways to involve and get help from SBP.

However, SBP is also wary of any potential negative consequences from misuse of fintech services to the financial stability of Pakistan. Since the primarily role of State Bank of Pakistan is to maintain and improve the financial health of the country, it is responsible for regulating and supervising fintechs as well. For this purpose, State Bank of Pakistan aims to thoroughly study, research and understand the impact of new financial technologies and services on the financial health and stability of Pakistan. Moreover, SBP also looks forward to utilizing these new services and technologies to help improve their own vigilance and regulatory frameworks to achieve its own objectives.

3.1 – History of JazzCash:

The history of JazzCash dates back 10 years to 2012 when Jazz used to be Mobilink. Mobilink launched its mobile cash management platform, MobiCash in 2012, which coincidentally was not the first such named entity in the world. There were several other MobiCash's running across the globe. Regardless, Mobilink at that time was trying to win market share for the mobile financial transaction industry. EasyPaisa had already launched and it was rapidly gaining traction in the country with millions signing up. So, Mobilink came up with its own response to this competition in the form of MobiCash. Fast forward a few years and MobiCash was renamed to JazzCash in 2016. However, JazzCash is not in itself a company. Rather, it is a subsidiary of Jazz that operates in the fintech sector.

3.2 – Current statistics of JazzCash:

JazzCash, currently, is the leading digital payment platform in Pakistan with approximately PKR 1.5 Billion revenue. As of December 2022, it has over 15 million active users and almost a hundred thousand retail agents across the country with an ever-expanding merchant base of more than 150,000. JazzCash provides a wide variety of services to its users in Pakistan including, but not limited to online money transfer, bill payments, savings, money lending, debit card, insurance, shopping, mobile top ups, internet bundles, travel tickets, food delivery, ticketing, bill management, government, freelance and corporate payments. All services are accessed through USSD Channel, mobile applications, and its huge network of retail agents across country.

3.3 – Importance and Mission of JazzCash:

The company aims to enhance digital financial inclusion by improving its strategies. Pakistan is notoriously infamous for the lack of availability of traditional banking services to millions of people, especially women. The banks are heavily regulated by State Bank of Pakistan, so they have a complicated and often time-taking procedure to open a simple bank account. For instance, many banks require proof of income in the form of a salary slip from an authorized entity. Since most businesses in Pakistan operate in the informal sector and outside the tax net, their employees cannot garner a salary slip to open an account. Moreover, millions of people own small businesses or provide their own technical skills in exchange for payment. For instance, plumbers, painters, mechanics, or cobblers. They are not a part of the formal economic sphere of Pakistan and hence, they cannot be served by the traditional banks. This has led to tens of millions in Pakistan without access to the traditional banking services.

JazzCash intends to operate in this market where there is significant space and demand. Utilizing its humongous subscriber base and retail network, JazzCash has revolutionized banking sector through its digital banking model. Deposits have reached approximately PKR 36 Billion and the number of active users utilizing its services for disbursing payments have skyrocketed.

3.4 – Competitive Landscape:

JazzCash has seen many competitors but none more dominating or challenging as EasyPaisa. EasyPaisa is indeed the pioneer of online digital banking in Pakistan and predates MobiCash. However, over the years, JazzCash has worked its way up and surpassed EasyPaisa’s share in the mobile banking sector. According to Financial Inclusion Insights Survey 2020, 64% mobile users in Pakistan use JazzCash and 54% use EasyPaisa. This rise in 10% share of JazzCash is result of continuous decline in share of EasyPaisa over the years. From 2017 to 2020 Easypaisa share of mobile users have declined by 21%. JazzCash has mobile user share of 20% in 2015, which became 54% in 2017 and now it has reached new milestone of 64% in 2020. Overall, JazzCash is the third most used mobile banking app in Pakistan.

JazzCash has also partnered with the different governments in Pakistan to improve its market share. For instance, one can book railway tickets or even pay their taxes through JazzCash. This has led to an uptake in the adoption of JazzCash by the people of Pakistan. Governments encourage this as well since it makes compliance easier and makes the whole process of payments easier. JazzCash also collaborated with provincial government of Punjab in 2019 to digitize disbursement of subsidy payments to farmers.

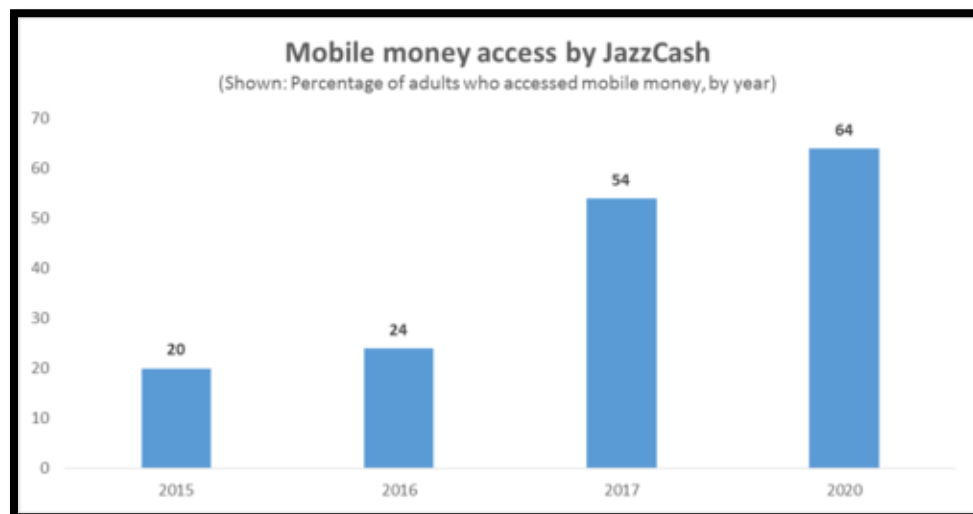


Fig 3: Mobile money accessed by JazzCash

4.1 – Digital Financial Services by JazzCash:

Jazz saw an opportunity in the digital financial services sector and developed JazzCash to take the lead in this market. Jazz is betting a lot on the success of JazzCash to improve its standing and valuation for the future. Being a digital bank allows Jazz to gain significant amounts of deposits when people put their money in the JazzCash wallet. Moreover, being the market leader in terms of subscribers gives Jazz a huge advantage. The company has substantial data which enables it to calculate the credit score of individuals and other businesses.

This might seem like a small thing, but it can be a game-changer in the credit market of Pakistan. Up to this point in time, there is no proper system of credit score in the country. The big banks have tried and failed multiple times at trying to establish a streamlined and accurate point-based credit score system. However, Jazz has created a unique opportunity for itself in the form of JazzCash. By utilizing its large swathes of data, it can effectively disburse small loans to millions of people in the country. With these loans, people would establish their own businesses and boost the economic landscape of Pakistan.

The company's CEO, Aamir Ibrahim presented his vision for the future in a panel discussion organized by Tabadlab in 2021, "Jazz was a telecom company. Today we are a tech company; in the future, we will be a data company." This is the extent to which Jazz is focusing on the Digital Financial Services market. And, until now, the strategy has been successful and has pushed the boundaries for what a Digital Financial Services provider can achieve in Pakistan.

JazzCash has a total of 40 Million mobile wallet accounts that hold 36 Billion PKR in deposits. Its total loan disbursements grossed up to 12 billion in 2021 (Pakistan today). As far as successful loans are concerned, the recovery rate is 95%. This is where JazzCash is dominant because of the data at its disposal. It already knows the financial health of a person and their previous credit history, if any. This makes it easier to disburse loans to worthy candidates who will use it well and return it successfully.

Jazz is betting on its huge subscriber base and trying to open 75 million customers for JazzCash lending. The company aims to disburse 50-60 Billion in the financial year 2022-2023. This lending will be based on 70% productive loans and 30% consumption loans. Consumption loans will be between 1000 PKR to 5000 PKR. However, productive loans will be 10 times higher with monthly interest on loans between 5% to 10 % depending upon the nature of lending, its amount and time duration.

Company is exploring new ways to introduce “buy now – pay later” model for its consumption lending. An example of this is how JazzCash has forayed into the gaming market of Pakistan. With the rise in people playing games such as PUBG, JazzCash began to offer loans to players to utilize for in-game purchases. These steps show Jazz has the vision and ability to make it big.

4.2 – JazzCash and Freelancing (Payoneer):

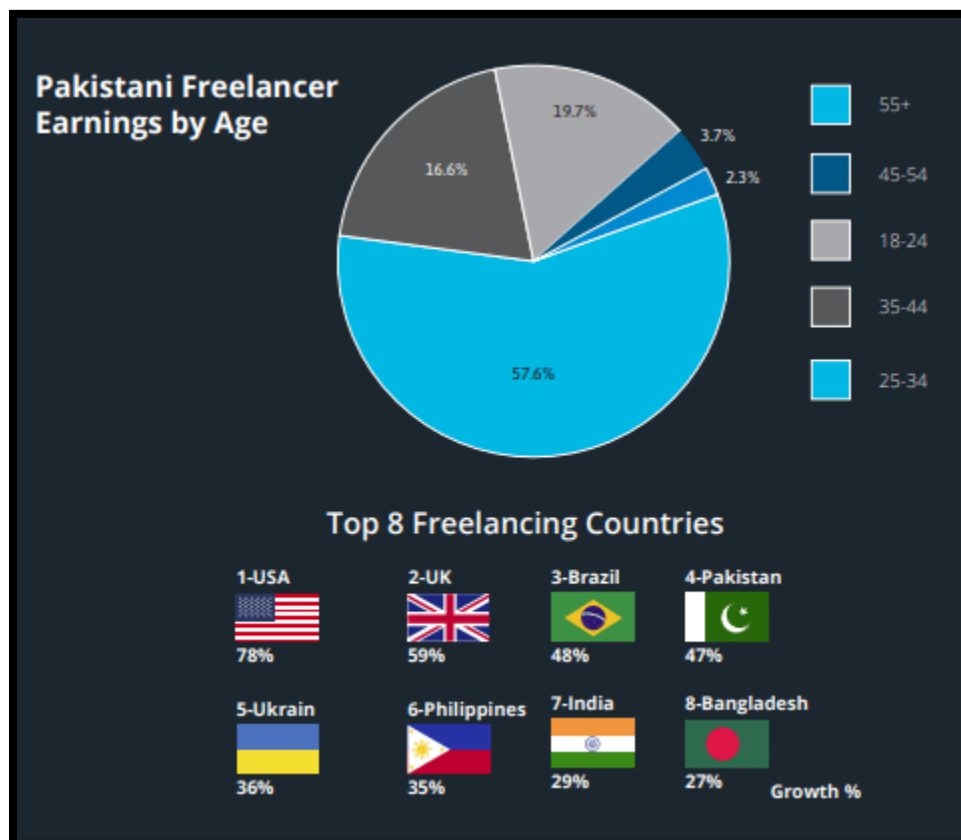


Fig 4: Freelancer Landscape

The freelance community in Pakistan faces many challenges when it comes to online payments transfer. Online payment options are limited and complicated. Not to mention, freelancers can hardly open bank accounts with ease because they do not have a salary slip. While some banks have established mechanisms to open bank accounts for freelancers, most of them are very limited in scope and only help the content creators who get paid millions. The small-time freelancer earning a few hundred dollars is still outside of the traditional banking sector. To facilitate this market, Payoneer and JazzCash have partnered up to help freelancers receive payments from their Payoneer accounts directly to JazzCash account, which is a huge milestone. They have also set a minimum limit of \$1 for withdrawal which is good for the people making little money online.

Usually, freelancers use Payoneer for receiving international payments and withdraw through local banks. But this partnership is set to change that and will allow competitive exchange rates to its clients. This will save users from the tedious process of money withdrawal through a tiring documentation process. This process will be instant and efficient. Users will be able to utilize two free payment withdrawals through an ATM. This partnership has refined the international online payment transfer method in Pakistan which is a huge relief for freelancers and for the economy of Pakistan which is starved for foreign exchange.

4.3 – JazzCash and Woman Empowerment:

Under GSMA’s Connected Women Commitment initiative, JazzCash has come up with plans and strategies to increase women’s proportion in mobile money customer-base by the year 2023. It has started programs to help women start and run businesses to help them empower financially and support their respective communities.

Women make approximately 17% of JazzCash base, which is low. JazzCash aims to improve women involvement by engaging them in targeted projects such as Guddi Bajji, which offers them tailored solutions. This project aims to enable women financially and digitally so that they can enhance quality of their lives in rural areas.

Under this project, women are deployed to sell their products door to door in their communities. JazzCash plans to onboard 300 women in their retail agent network. This project will enhance entry of women in workforce as they will be able to interact easily with female agents. This will also provide employment opportunity to women who will work as retail agents.

4.4 – JazzCash and AgriTech (Farmer Empowerment):

Agriculture contributes 23% of Pakistan’s GDP. Around 100 million people are directly or indirectly dependent on agriculture sector for earning livelihood. Owing to different barriers, productivity of farmers is stagnating. Some of these barriers include lack of modern equipment, dearth of modern education and timely weather forecast contribute towards the degrading conditions.

In these circumstances, it is essential for farmers to secure loans from formal financial service providers (FSPs). However, it is a difficult process for farmers as many lack collateral and credit history to prove themselves credit worthy. Lack of economic identities exclude farmers from borrowing capacity. The situation is much bleaker for the female farmers who have scarce access to assets and opportunities as compared to their male counterparts. They are also affected by

socio-cultural issues which limits their participation in agricultural practices. To aid agricultural sector, JazzCash has initiated many programs.

Bakhabar Kissan is a B2C mobile advisory program that provides farmers with timely and accurate advice regarding agricultural practices and weather alerts. It also gives them access to talk with agricultural experts in certain circumstances. JazzCash has also partnered with AgriTech companies and programs such as Reap Agro and Ricult to provide digital use cases regarding procurement, profiling, payments, insurance, and credit services to farmers. In 2020, the Jazz-led consortium was selected as grantees for GSMA innovative Fund for the digitization of agricultural value chains, which aims to improve lives of farmers and enhance their financial inclusion. The objective of this move is to provide digital identities to farmers through various databases, particularly the Jazz database. It aims farmers to build climate resilience and build their services through user experience-based research and design. These services will be provided to 100,000 farmers across the country.

All the aforementioned steps and initiatives point towards the fact that JazzCash is making it big in the Digital Financial Services sector. Not only is it the market leader today, it is set to further expand into untapped markets and unlock Pakistan's vast economic potential. Sky is the limit when a company can make its way to the millions of people who are outside the formal economic system of Pakistan.

Problem Statement Overview

JazzCash being the leading fintech organization in Pakistan has a user base of over 15 million users with a huge and far reaching agent and merchant network. It represents a huge opportunity within the fintech domain and has a significant impact on the economy of Pakistan. Financial inclusion is a big problem of Pakistan with most of the population remaining unbanked and out of the tax net of Pakistan. Traditional banking is fast becoming saturated by serving a particular class of customer and the lower segments of the society rely on cash as the main financial medium as access to banking has remained limited.

In such a scenario, JazzCash is the ideal potential agent that can bridge this gap between the population and banking services by acquiring customers from this domain and providing them with fintech services. This would not only result in an increase in the banked population but would also give rise to increased tax collection and a safe medium for people to exchange money. Since most Pakistanis have access to smartphones and cheap internet services, this not only leverages these components to create a unique ecosystem but also creates an environment of financial inclusion and trust. As described above, this can have far reaching benefits from being a catalyst in woman empowerment to empowering farmers by providing a means towards agritech.

It is important for an organization like JazzCash to study consumer behaviors and implement a strategy that is coherent with the business objectives and the Pakistan financial services landscape. For the implementation and execution of this strategy, consumer behavior is of vital importance as it dictates on how much leverage JazzCash must capitalize on the presented opportunity. Not only this but studying the consumer behavior allows JazzCash to identify greenfield areas where growth is possible and discard weaker areas where traction is low. It also helps JazzCash tailor its suit of products accurately to the needs of the customers and design new products to serve needs that are there but have been ignored. Such data driven strategy making allows for success of an organization which looking to establish itself as the pioneer of financial services for the unbanked.

Finally, after analyzing the customer behavior of the existing JazzCash customer, look alike modelling can be done to identify similar customers within the non-JazzCash population and unique products can be pitched to them. This will lead to data driven customer acquisition which will have a better quality and result in engagement on the platform which in turn will generate significant revenue for JazzCash.

Quantitative Cluster Analysis of JazzCash Consumer Behavior

To analyze the JazzCash consumer behavior, quantitative method is used to ensure transparency and the quantitative analysis will yield an unbiased result with respect to consumer behavior. Multiple methods were explored to undertake this activity, the details of the process are given in the below section along with the results and the key takeaways from this activity.

6.1 – Analysis Methodology:

The methodology used to study the consumer behavior comprised of the below steps:

- Method Selection
- Data Collection
- Technical Stack Identification
- Interviews
- Model Development
- Model Execution
- Results Evaluation
- Profiling of Clusters

Method Selection was done based on number of variables and data points that were set for the quantitative analysis. For this purpose, it was decided that top 15 JazzCash use cases would be used to drill down and study the consumer behavior. Since other quantitative methods like linear programming and critical path analysis are done for smaller number of variables, the method used for this analysis is **Quantitative Cluster Analysis**.

For the quantitative cluster analysis to be done, a data science-based model had to be developed to classify customers into different clusters based on their unique behavior types. For this purpose, extensive data collection was required which required customer inputs given their user behaviors. For data collection, a format was made and sent to the JazzCash subscribers in a csv file format which would be uploaded into the system. The total data points were collected from 422 JazzCash subscribers split across different SEC classes and an equal representation of urban/rural customers as in the actual population of Pakistan.

The technical stack that was selected for this project was the open source software called Jupyter and the coding was done in Python language. A data science and machine learning based model was developed to siphon through the data points and identify patterns within the data and accordingly make system generated clusters while comparing behavior to the overall population and gauging a measure of propensity to use a particular product. After the technical stack identification, interviews were conducted with selected stakeholders within and outside the

fintech and JazzCash domain to verify and understand the generated insights through the clusters and remove any outliers that might exist in this data set to remove any and all biases from the cluster set result.

Finally, the developed model is implemented and executed on the data set and clusters are formed which are output in the form of radar charts and give an insight in to the consumer behavior. Once the results are extracted, profiling of the different clusters is done to study the type of consumers within each cluster and how that gives an insight in to the behavior of consumers within that cluster.

6.2 – Cluster Analysis Components

Given the above methodology, it is vital to understand the current consumer behavior exhibited by JazzCash customers to further understand the current strategy and recommend appropriate changes. It is pertinent to note that the output of the cluster analysis is in the form of radar charts expressing certain distinct behaviors across all subscribers. These are:

- The currently prevalent consumer behavior with respect to different use cases
- The propensity of the customer to fall within a cluster
- The unique attributes of each cluster
- The comparison with the entire population
- Clubbing of similar subscribers into the nearest clusters

Each of the subscribers are placed by the model in to one cluster which is exhibiting similar behavior. The clusters represent unique consumer behaviors and give us an idea into the unique behaviors exhibited by different subscribers. Precedence is applied on certain use cases which helps the model make distinct clusters and it groups similar customers into the closest cluster that exhibits the same behavior.

Moreover, the behavior is based on different use cases available within the JazzCash product and how customers interact with these use cases. To create a benchmark, the average interactions and transactions per customer are calculated for the entire population and finally, each unique use case that is distinctly different in each cluster is benchmarked against the average interaction of the population and compared accordingly. Thus, this benchmarking enables us to compare the unique use cases that make each cluster different and the extent to which a particular use case is preferred as compared to the average interactions of the population with that particular use case, shows the inclination of subscribers towards that particular use case.

Finally, the propensity of a subscriber to fall within a particular cluster and exhibit a particular behavior is aggregated to see the total impact on the product diversity, and accordingly, each unique subscriber is then placed in the closest unique cluster to give an accurate representation

of the entire JazzCash population sample the was given as an input to the model. Hence, the model encapsulates the current JazzCash consumer behavior and what implications this has on the currently prevalent JazzCash strategy.

The use cases explored for the development are calculated via a scoring mechanism with input taken from the subscribers themselves. The top 15 use cases are selected based on the frequency and after scoring, these are uploaded to the model. The use cases selected along with their definitions are given below:

Use Cases	Definitions
Cash Back	Incentive received on certain transactions
Mobile Top-Up (Jazz)	Mobile balance recharge on Jazz
Balance Check	Balance check via application or USSD
Money Transfer	Transferring money to a mobile account
Cash Deposit	Depositing cash into the wallet via retailer
Profit on Deposit	Profit earned via savings plan on deposit
Money Transfer to Bank	Transferring money to a bank account
Mobile Top-Up (Others)	Mobile balance recharge on other operators
Cash In from Bank	Adding wallet balance through bank transfer
Cash Withdrawal	Withdrawing wallet balance via retailer
Utility Bill Payment	Paying utility bills from wallet balance
Till Payment at Merchant	Making payment on merchant till ID
Cash In (Promo)	Cash in through promos like invite a friend
Merchant Reversal	Over transaction through merchant
QR Payment at Merchant	Making payment on merchant QR
Loan Disbursement	Loan taken from JazzCash
Loan Payment	Loan repaid (auto or manual)
Payment Gateway	Used JazzCash as a gateway transaction

The above use cases represent the most common use cases amongst the sample data set based on frequency, number of transactions and the amount of transactions. To select the top 15, number of transactions parameter was used so that the selection is free from any bias. If the amount of transaction was selected, high ticket size use cases such as utility bill payments would have appeared more often, and the use case mix would have accordingly changed. After selection of the top 15 use cases, subscribers were asked to score the use cases on how likely they are to use them, how often they use them and how would they rate the use case overall in terms of convenience. These scores are then fed into the model to create a unique persona of the customer.

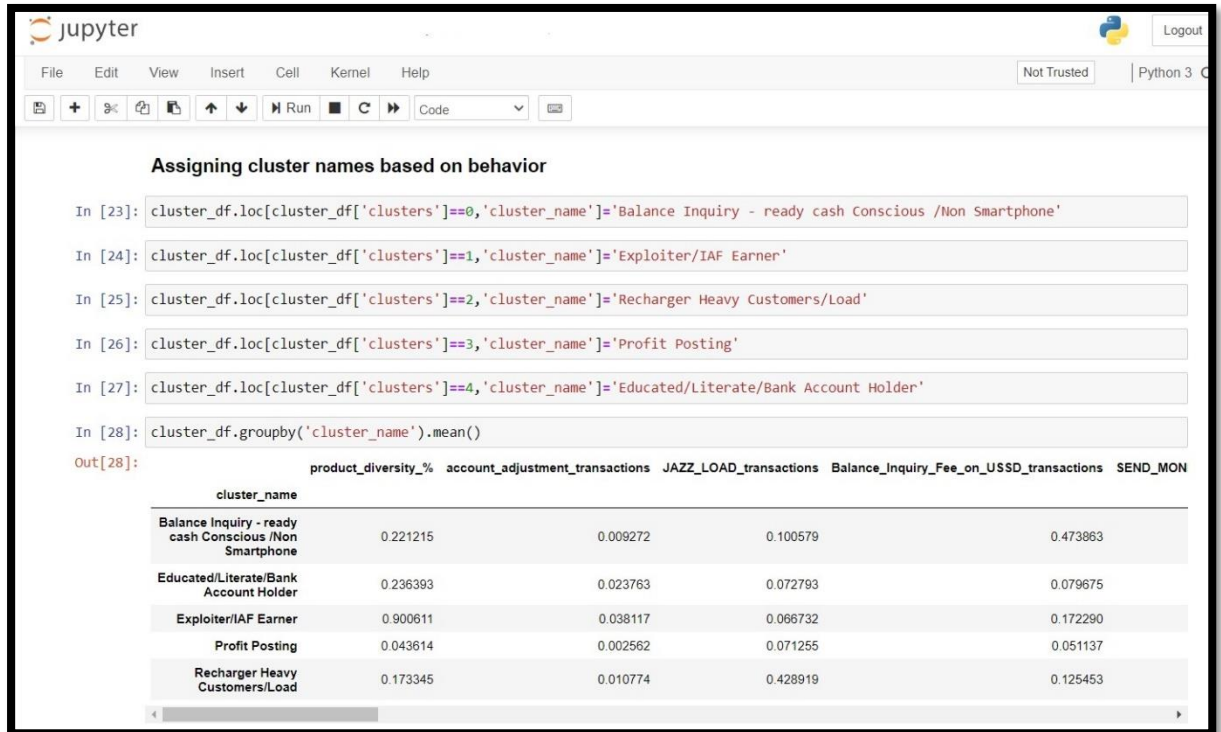


Fig 5: Software Screenshot (Cluster Naming & Scoring)

Clusters are named according to their unique attributes for identification before the final model output is siphoned to the self-learning model. The model then automatically calculates the give input scores and these scores are then used to further segregate the clusters. The screenshot above shows different scores against the cluster model objectives. Since the model is a self-learning one, it is important to give the model a goal seek which it must chase while maximizing cluster output. This is done via giving precedence on the main cluster analysis and how the output would change given the unique score of each unique subscriber and subsequently translating into each unique cluster to give a unique output of the entire model.

It is pertinent to note that customer behaviors are uniquely identified by their distinct behaviors and that any names given are temporary for the model to identify the clusters later to benchmark against the entire population. Cluster naming is only done to segregate the unique customer and is in no way reflective of the customer behaviors. This leads to intelligent benchmarking of clusters as the identification of the clusters is possible at a unique identifier level and the quantitative analysis becomes that much easier.

6.3 – Outlier Correction

As with all data collection models, there do exist a few outliers which the model treats as data points. Due to these outliers, the model variables and the results become somewhat skewed and hence, there occurs an inaccuracy within the model. To mitigate this, the outlier correction and removal tool within the Jupyter software allows us to either remove the outliers altogether or club them with their nearest unique subscriber data point. For the sake of not losing data points, we pick the latter option where the source code gives the model the precedence and enables clubbing of the outlier with the nearest unique subscriber point and accordingly generates the results. The process screenshot is given below:

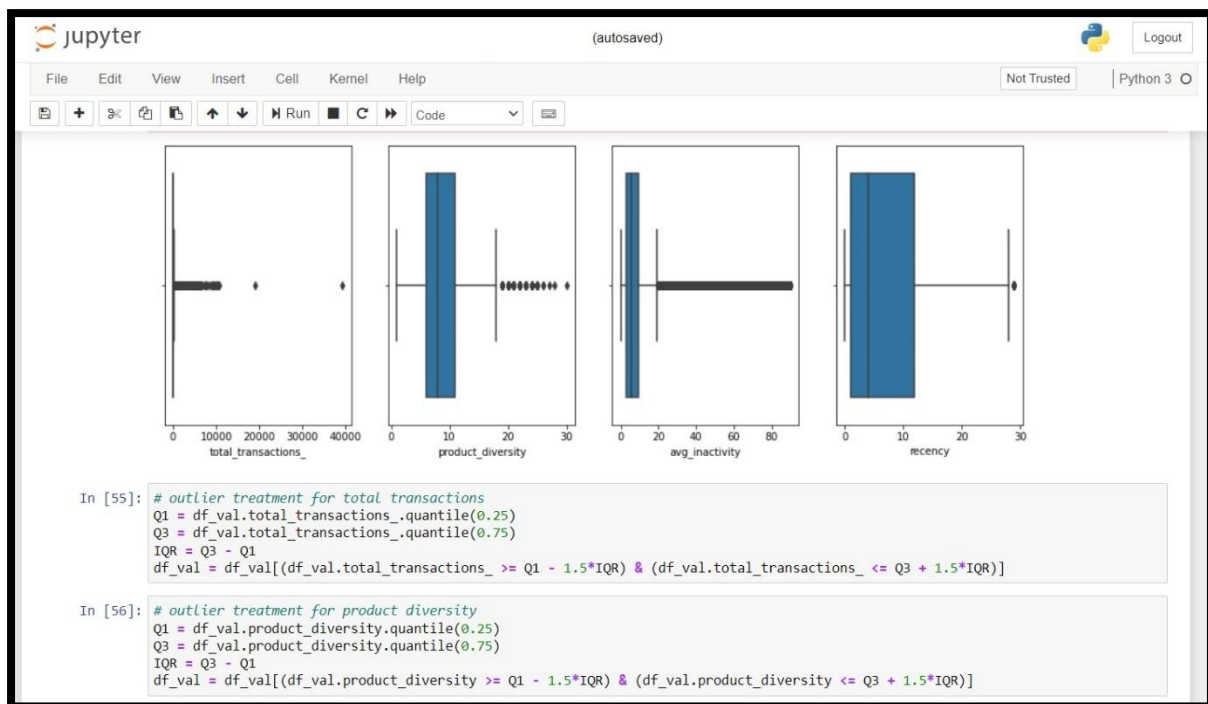


Fig 6: Software screenshot (Outlier Removal)

The outliers are clubbed with their nearest available unique subscribers up till a certain threshold while the distinctly variable outliers are discarded altogether to make the output of the model as error free and reliable as possible. This enables little to no skewness in the model results and furthermore, it enables development of robust clusters within the JazzCash subscriber sample data base.

6.4 – Model Output & Analysis of Clusters

The resulting output from the above given model dynamics are given below with all the clusters being discussed in detail. A total of 6 clusters were formed from the model output which represent unique consumer behaviors of the JazzCash customers. These clusters represent individual consumer behavior and habits which are grouped together to create a unique persona. The clusters are given below:

Cluster 1: QR Centric Customer

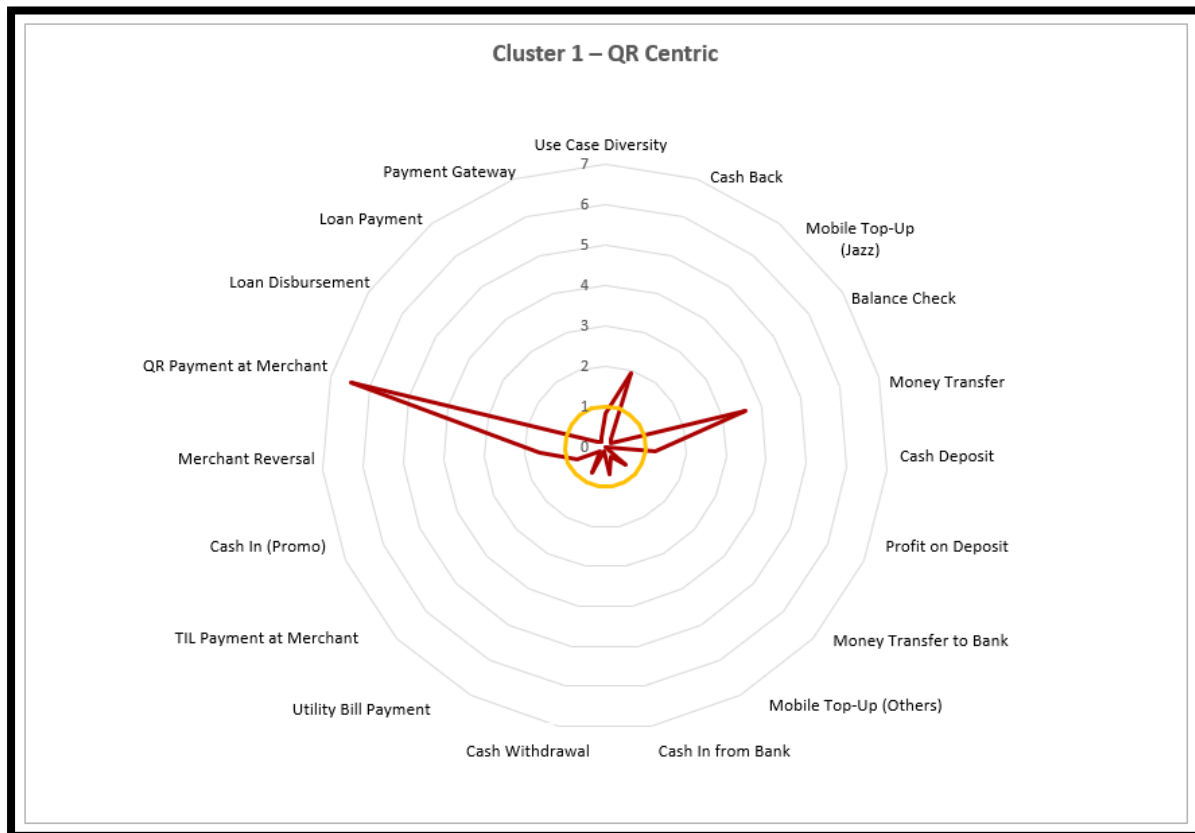


Fig 7: Software Output (Cluster 1)

The first cluster shows a unique subscriber behavior where the customer is QR Centric, hence, the name. Subscribers in this cluster exhibit a unique characteristic and perform QR transactions at merchants 6.5 times more than the average QR transactions of the population. The second unique behavior for this cluster is the Cashback transaction where cashback is coming into the wallet. This correlates with the QR transaction as on the majority of QR payments through JazzCash, customer is offered a cashback incentive into the wallet. The last unique behavior exhibited by this unique cluster is the money transfer activity. This is since the cashback received through the QR payment is transferred to more active wallets.

While this is an ideal cluster for the QR payments use case which fintechs promote and is one of the unique propositions within JazzCash, the last behavior where Money Transfer is prevalent shows signs of trouble. The reason for this is that while the customer is making payments on merchants, the cashback being earned by the customer is moving out of the JazzCash system and being sent to other mobile wallets. This represents a problem which is discussed in detail in the trailing section.

Cluster 2: Potential Exploiter

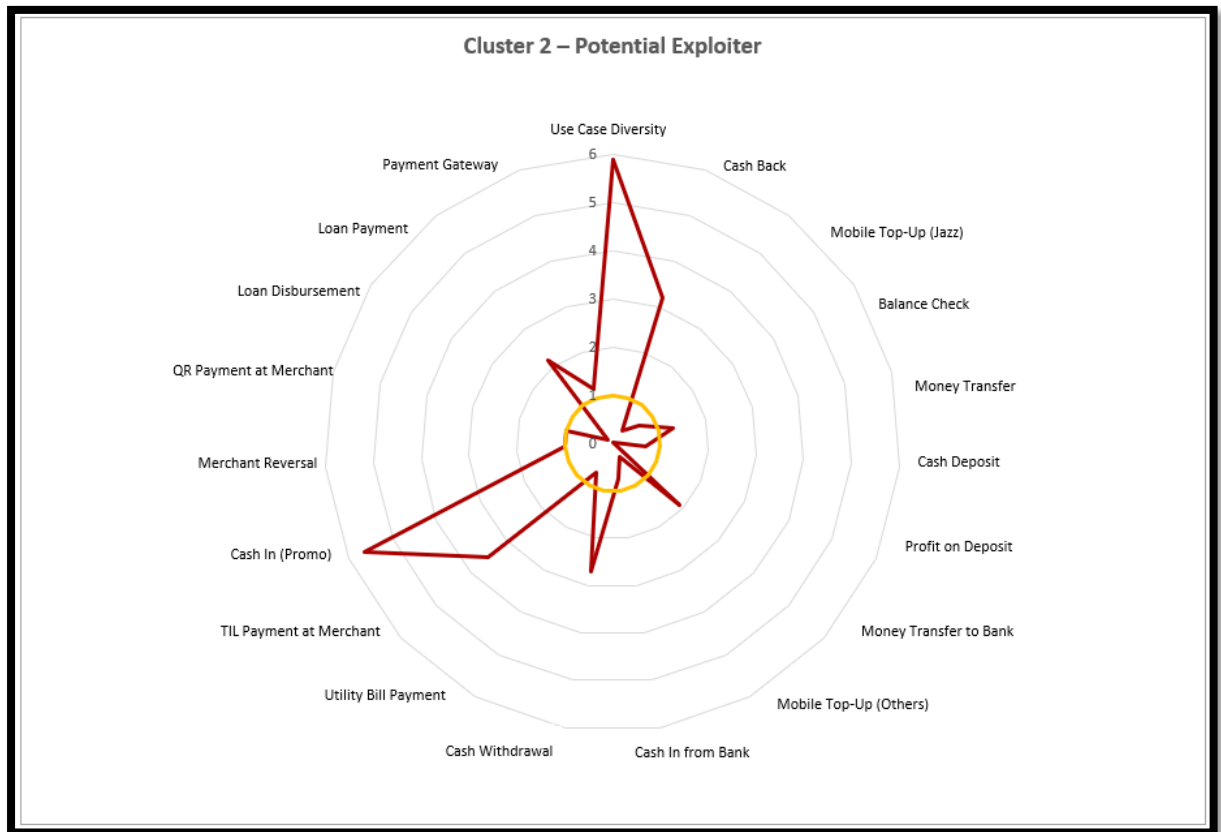


Fig 8: Software Output (Cluster 2)

The second cluster output from the model shows a unique behavior of a customer which is termed as a potential exploiter. As seen in the radar chart, this customer is earning cashback from a Cash In (Promo). This promotion is basically a member get member feature of the application where a customer invites other people on to the JazzCash platform and is rewarded with a cashback. While this feature is important in creating a healthy user base, it opens up JazzCash to exploitation from this channel as more and more people start to do Cash In by inviting people on to this platform.

This poses a huge challenge as we see spikes on two other major items which are Till Payment at Merchant and Cash Withdrawal. Essentially, the conclusion which is drawn from this behavior is that customers are earning cashback from the given promo and then using the same cashback to either make payments at merchants or are withdrawing that cashback from the retailer. There is also a spike on the money transfer to bank use case which again suggests that money is moving out of the system and hence, this poses a serious problem for JazzCash where customers are using the platform to earn cashback and subsequently moving it out of the system. It is pertinent to note that the major spike on use case diversity shows that customers are moving back and forth between transactions i.e customers are doing different transactions and the chance of repeat transaction is potentially lesser. The reason for this is simple, customers first do cash in promo transactions and then earn cashback followed by money transfer out of the wallet, hence, all three transactions are different and unique thus, creating more use case diversity.

Cluster 3: Potential Exploiter

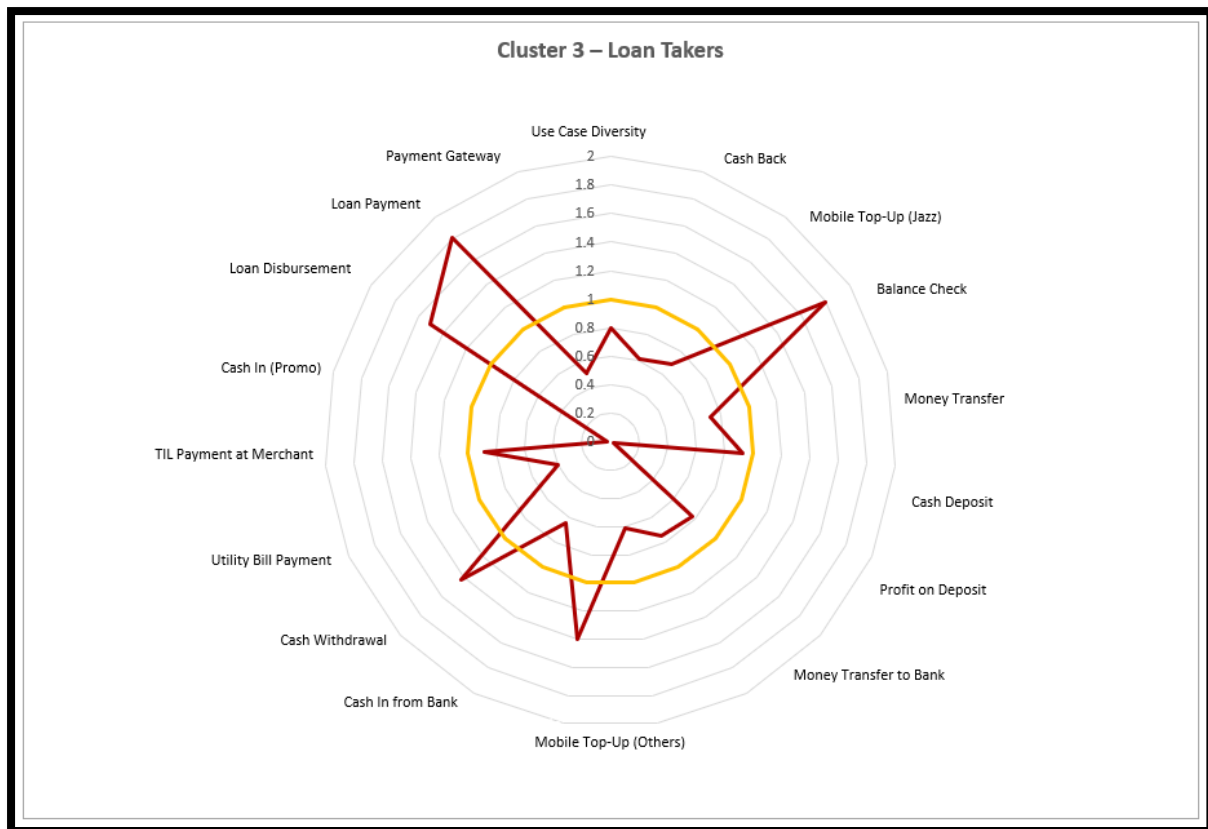


Fig 9: Software Output (Cluster 3)

The third distinct behavior that is output by the model is customers that are consistent with loan takers. The reason for this conclusion is the spike we see relative to the population on two of the loan items, namely, loan disbursement and loan payment. It is pertinent to mention here that

loan can be repaid either by the customer themselves or by auto deduction from JazzCash, whichever mode the customer may select. There is a spike on the balance check use case which makes sense as customers taking loans will check their balances again and again to ensure that the loan amount is received and whenever a manual or auto payment is made, this amount is refreshed again. The last two spikes are on cash withdrawal and mobile top-up use cases, indicating that the customer takes loans and then either withdraws the loan amount or uses the loan amount for mobile top up. This is a good use case customer which is truly using JazzCash as a loan medium which is one of the top use cases of fintechs around the world.

Cluster 4 & 5: Mobile Top-Up Users

The fourth and fifth clusters that the model outputs show a predictable and unique behavior hence, the model clubs these two clusters. The clusters are consistent with subscribers who are inclined towards the Mobile Top-Up use case. Through the JazzCash application, mobile recharge can be bought either for Jazz or for other mobile operators. This mobile top is one of the top use cases and subscribers who do little to no other activities predominantly use their wallets to top up their mobile balances. The only difference between the two distinct clusters is the fact that one cluster is inclined towards Mobile Top-Up of Jazz and the other cluster is inclined towards Mobile Top-Up of other mobile operators.

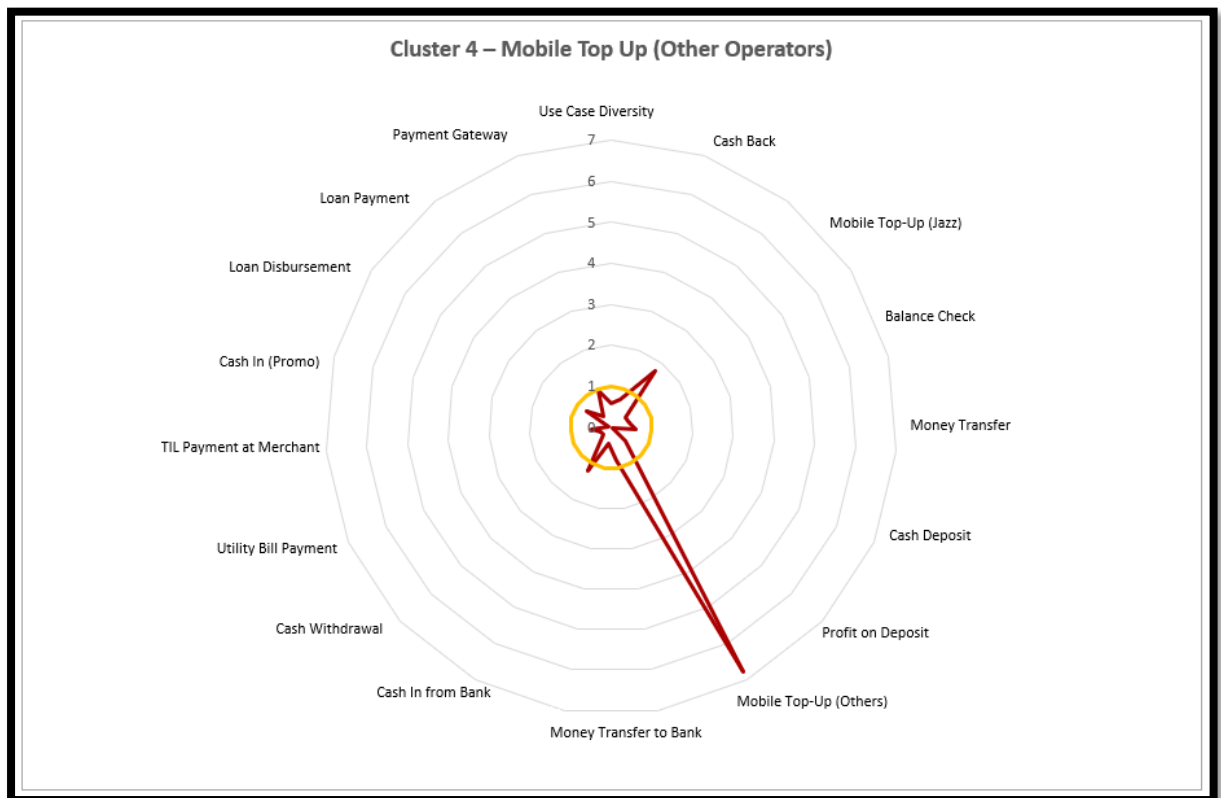


Fig 10: Software Output (Cluster 4)

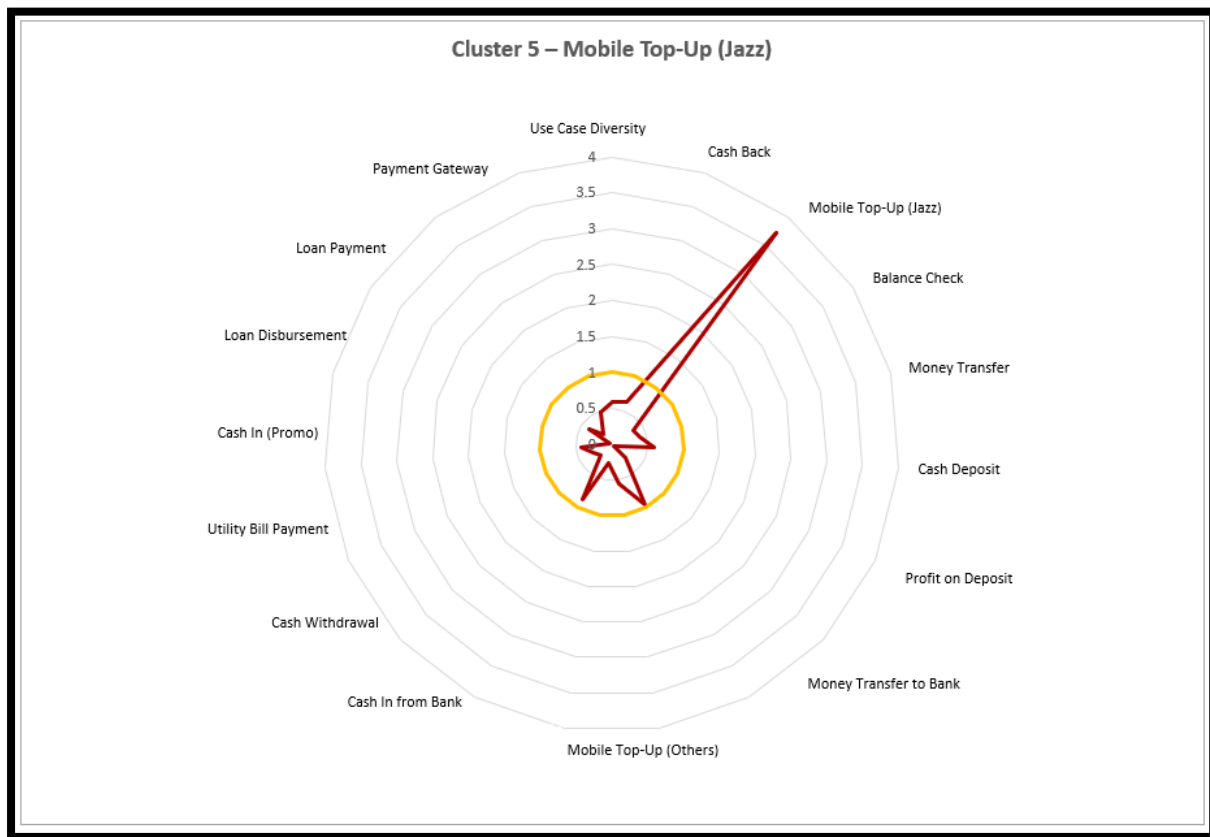


Fig 11: Software Output (Cluster 5)

Cluster 6: Mobile Top-Up Users

The final unique customer behavior out of the sample set that was collected is given above where the customer is solely inclined towards earning profit on the deposit within his wallet. These subscribers do not use their balances, rather they use JazzCash only as a savings wallet to earn interest on their deposit. This is in line with JazzCash’s savings product which is available to the subscribers to plug in a fixed amount of deposit and subsequently use that deposit to earn interest on it. This poses a risk for the JazzCash product itself as the subscribers are largely dormant and earning significant interest. Their balance keeps on increasing while no other use cases are being tapped by them. While the product design is meant to encourage this behavior, it represents an engagement problem where customers are not engaged enough to interact with other use cases that the JazzCash product has to offer.



Fig 12: Software Output (Cluster 6)

Conclusion:

The six clusters seen from the model output represent six distinct unique behaviors of customers from our sample data set. Each cluster has a combination of customers which make up the distinct behavior. This in turn reflects the customer’s behavioral profile and what that tells us about the current JazzCash strategy and how unique customer behaviors shape the development of unique need-based use cases for the JazzCash product. This also poses a huge action item which is to study in depth the user behavior and what an ideal user would look like and accordingly shape the future strategy in order to maximize the ideal users within the overall JazzCash customer base so that engagement, acquisition and retention strategies can all be centered around that particular customer. While the outliers and the distinct behaviors will still prevail, the ultimate goal is to maximize the profit and revenue from the JazzCash product and accordingly, behaviors need to be shaped to encourage a specific type of cluster behavior which would yield greater engagement on the platform and ultimately, greater revenue.

This section concludes the analysis observations and recommends a future course of action based on the model output. It also creates a unique persona of an ideal customer, one which should be acquired and retained for JazzCash to maximize engagement and revenue on the platform. The analysis is given below.

7.1 – Current strategy according to consumer behavior

The current strategy of JazzCash according to the observed consumer behavior makes a case for necessary improvements that are required. These distinct behaviors represent the current subscriber base and make a case for moving away from the traditional fintech model and implementing a more robust model. The above clusters give us the following insight into the current strategy of JazzCash as indicated by consumer behavior:

- **Low Engagement:** The clusters show that the overall engagement on the platform is low and majority of the customers are either moving money out of the wallet or are dormant altogether. This is a huge challenge as engagement keeps the platform relevant and is necessary for the long-term growth of the platform. Use cases take time and resources to develop and if there is no customer willing to engage with these use cases, maintaining them overtime will become a challenge leading to overall deterioration of the platform.
- **Exploitation of Use Cases:** The clusters show that there can be potential exploiters within the JazzCash user base as one of the clusters show customers earning money from a promotion and subsequently withdrawing that money. This represents a cash flow problem where customers are encouraged to invite people and are rewarded for it. While this strategy is fine for growth of the user base, it will, at some point begin to stagnate and ultimately this will lead to more exploitation of the use case
- **Telecom Use Cases:** While JazzCash is an independent fintech product of Jazz, it seems that the use cases are very much intertwined with a large portion of the user base opting for mobile top up use case. This shows that while the platform has multiple other products, the association with the telecom brand is strong and the platform is seen as a medium for buying or making telecom payments. This poses a problem whereas a lot of the other use cases are ignored and swept under the rug. The association with a telecom brand needs to be diminished, like what EasyPaisa has done when compared with Telenor
- **Lesser Focus on Loans:** The last unique behavior that represents the strategy is the lesser focus on loan use cases. The cluster that exhibits the most ideal behavior in terms of a fintech is the loan taker cluster. This demands that there should be an extra focus on loan products and use cases as these use cases will ultimately enable revenue generation and the loan disbursed within the wallet will be used for other wallet use cases

7.2 – Proposed Cluster

According to the above given dynamics, the model under an unsupervised learning mode was given the input of the current clusters with weightages on number of transactions, use case diversity and the overall inclination towards the products of payments to generate the cluster that an ideal consumer behavior would exhibit. In the interviews with the concerned personalities, it was discovered that certain use cases generate greater revenue for JazzCash such as gateway, merchants, and utility bills. Thus, this was also factored in to generate an ideal cluster for the JazzCash user which would in turn increase the revenue and engagement on the JazzCash platform. The resultant cluster is given below:

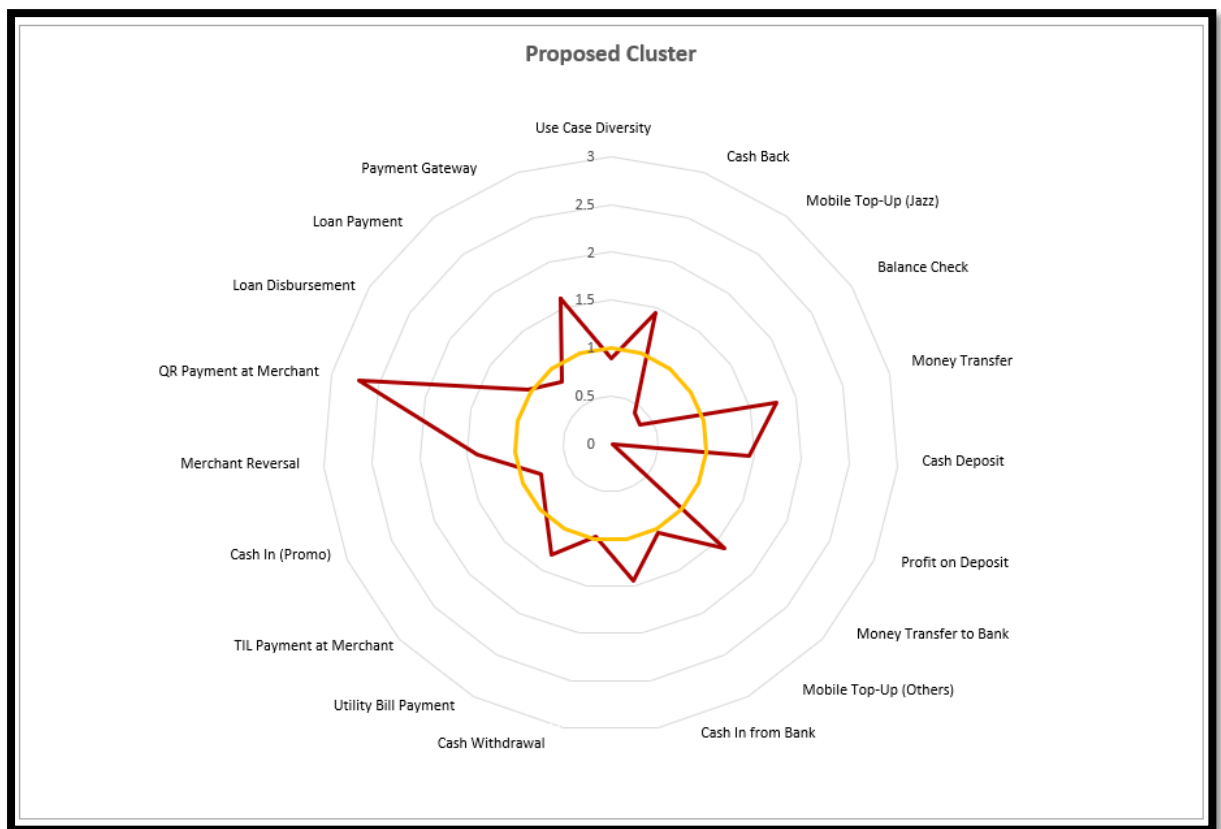


Fig 13: Software Output (Proposed Cluster)

The proposed clusters show that an ideal JazzCash customer is one which uses the full suit of use cases and is engaged across all the different use cases that JazzCash has to offer. It is pertinent to mention that strong focus is given to payments such as gateway payments and QR payments as these are the use cases which generate the most revenue for the platform. All in all, the above clusters represent a good balance of engagement and revenue generation for the platform without being overly inclined towards a particular use case.

7.3 – Concluding Remarks

JazzCash is one of Pakistan’s leading fintech service providers and accordingly, the platform offers multiple use cases for its customers. The journey towards financial inclusion and banking the unbanked population of Pakistan started with the advent of EasyPaisa in the late 2000s and today, many companies have followed that mantra and launched fintech services within Pakistan. The largest fintech player, JazzCash, requires breaking the traditional fintech barriers and transcend beyond to provide ultimate value for the customer. This is evident when cluster analysis is performed to study the consumer behavior and it is seen that within the sample data set, JazzCash user base has six distinct unique behaviors which represent engagement on the platform.

While these user behaviors are unique and represent use of the platform’s use cases, it is also pertinent to note that these use cases are inclined towards specific behaviors and represent low engagement levels on the platform. In order for the sustainability of the platform and increased revenue generation, there needs to be a tilt towards acquiring and retaining well rounded, highly engaged customers which tend to make up the majority of the user base so that the platform’s engagement levels remain healthy enough for the platform to grow and subsequently provide sufficient revenue for the organization to sustain itself and become a profitable fintech, a feat which only a few digital financial service providers have been able to achieve within the world.

Annexure I - References

Following are the references and resources used for the purpose of this project:

- <https://www.jazzcash.com.pk/shop/mobile-account-services/>
- <https://www.jazzcash.com.pk/shop/payments/loan-repayments/>
- <https://www.jazzcash.com.pk/digital-payments/online-payments/>
- <https://en.wikipedia.org/wiki/JazzCash>
- https://en.wikipedia.org/wiki/Mobile_payment
- <https://marketdevelopmentfacility.org/wp-content/uploads/2022/02/Financial-Inclusion-in-Pakistan-FINAL-.pdf>
- <https://www.sbp.org.pk/finc/finc.asp>
- <https://karandaaz.com.pk/blog/financial-inclusion-increasing-gender-disparity/>
- <https://tracxn.com/explore/FinTech-Startups-in-Pakistan>
- <https://karandaaz.com.pk/wp-content/uploads/2021/06/Fintech-Ecosystem-of-Pakistan.pdf>
- <https://www.sbp.org.pk/dfs/Fintech.html>
- <https://www.sbp.org.pk/about/micro/criteria.htm>
- <https://www.sbp.org.pk/dfs/Digital-Bank-Regulatory.html>
- <https://www.investopedia.com/terms/f/fintech.asp>
- <https://en.wikipedia.org/wiki/Fintech>
- <https://bootcamp.cvn.columbia.edu/blog/what-is-fintech/>
- <https://profit.pakistantoday.com.pk/2022/07/31/jazzcash-mobilinks-favourite-child/>
- <https://profit.pakistantoday.com.pk/2022/09/11/as-jazzcash-devours-another-ceo-where-will-they-go-next/>
- <https://tribune.com.pk/story/2353143/jazzcash-app-helps-foodies-save-up-to-25-at-over-500-restaurants-nationwide>
- <https://www.brecorder.com/news/40206279/jazzcash-wants-to-increase-female-customer-base-to-50pc>

Annexure II – Interviews Details

For the purpose of this project, following individuals were interviewed to get an insight in to the current strategy of JazzCash and to get a better understanding of the overall JazzCash use case dynamics. Moreover, the cluster outputs were discussed with the individuals and all the hypothesis and implications were discussed to ensure accurate interpretation of the results. The interviews were conducted of current and former Jazz, JazzCash and EasyPaisa employees, vendors and all other people involved within the fintech domain.

Employees have shared contacts with consent (yes/no) to contact in case of any information required. Consent is written in the table.

Name	Designation	Contact Details	Consent
Shehryar Khan	Expert Digital Financial Services	shehryar.khan@jazz.com.pk	Yes
Shahbaz Aslam	Stream Lead Digital Analytics	Shahbaz.aslam1@jazz.com.pk	Yes
Muhammad Sohaib Raja	Expert CVM & DFS	muhammad.sohaib2@jazz.com.pk	No
Afifa Suhail	Senior Business Analyst	Afifa.suhail@jazz.com.pk	Yes
Farooq Mazhar	Product Expert	muhammad.mazhar2@jazz.com.pk	No
Furqan Ahmed	Product Owner	furqan.ahmed1@jazz.com.pk	No
Syed Hassan Ali	Head of Consumer Products	hassan.ali6@jazz.com.pk	No

Disclaimers:

- Employees did not consent to video or voice recording of interviews
- Views are expressed by employees on personal accounts and not at all are representative of the views of the organization of which they are part of
- No confidential data of any kind was given or used to derive any contents of this project
- The data collection was entirely customer-based survey and scoring methodology and the software used was an open source software

Annexure III – Glossary

Glossary of key abbreviations used within the project document:

1. IT – Information Technology
2. GSM – Global System for mobile communication
3. Fintech – Financial Technology
4. DFS – Digital Financial Services
5. MFS – Mobile Financial Services
6. SBP – State Bank of Pakistan
7. PMCL – Pakistan Mobile Communications Limited
8. ATM – Automated teller machine
9. USSD – Unstructured Supplementary Service Data
10. GDP – Gross Domestic Product
11. FSP – Financial Services Providers
12. GSMA – Global System for Mobile Communications Association
13. SMS – Short Messaging Service
14. VAS – Value Added Service
15. B2B – Business to Business
16. B2C – Business to Consumer
17. IoT – Internet of Things
18. M2M – Member to Member
19. MWallet – Mobile Wallet
20. MSISDN – Mobile Station Integrated Services Digital Network
21. KPI – Key Performance Indicator
22. USP – Unique Selling Point
23. QR - Quick Response code
24. Till – Payment mode through till ID

Annexure IV – Data Collection

The below given files contain the customer questionnaire and the model output after scoring on top of which the radar charts were built. The data was collected manually from some customers while others were asked to digitally enter their scores in an excel format. The overall data collection process took 4 months as a significant chunk of data points were required for the overall model to calculate based on different variables. The data collection was done according to the latest split of financial demographics available based on SBP statistics.



Questionnaire.docx



Customer
Scoring.xlsx