

THE IMPACT OF DIGITALIZATION ON COSTUMER ACQUISITION FOR
FINANCIAL INSTITUTIONS: THE COMPARISION OF TURKEY AND EMEA
REGION



ÖZGE KÜÇÜKBACAK

JUNE, 2022

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BY

ÖZGE KÜÇÜKBACAK

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PLAGIARISM

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Özge KÜÇÜKBACAK

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ABSTRACT

Developments in technology affects every sector especially financial insituties. There has been a significiant change in finance sector with the new technology innovations and financial technology organizations (Fintech). To keep up with the competitors, banks need to implement their technology and digital transformation strategy in terms of new trends and transforming customer behaviours. Banks need to improve successful performance in technology, efficiency and innovation to meet customers demand and cut costs. As the internet rapidly get into our daily life, people have a new way for shopping and doing banking transactions. All manual transactions now can be done online that is faster, easier and more convenient. To make this happen, Fintech companies collabrote with banks to bring new solutions for customers such as digital wallets, online payment systems, contactless debit / credit card payment features, online customer service with video call, modern and more automated bank branches. With the good digital transformation strategy and foreseeing the risks, financial insituties can catch the new technology to implement it successfully. In this research and analysing of customer answers, comparing three different banks in Turkey and EMEA Region, we can see that there are differentations in customer preferences for their solutions. Catching the world standard for the financial technologies and implement it with a good strategy and infrastructure that will bring a huge competitive advantage.

Keywords: Digital banking, customer acquisition, new payment systems

ÖZET

Teknolojideki gelişmeler başta finans kurumları olmak üzere her sektörü etkilemektedir. Teknolojik yenilikler ve finansal teknoloji organizasyonları (Fintech) ile finans sektöründeki yapılarda önemli bir değişim yaşanmıştır. Rakiplere karşı avantajlı olmak için bankaların teknolojilerini ve dijital dönüşüm stratejilerini yeni trendler ve dönüşen müşteri davranışları açısından uygulamaları gerekmektedir. Bankaların, müşterilerin taleplerini karşılamak ve maliyetleri düşürmek için teknoloji, verimlilik ve inovasyonda başarılı performansı geliştirmesi gerekiyor. İnternetin günlük hayatımıza hızla girmesiyle birlikte, insanların alışveriş ve bankacılık işlemlerini yapma şekilleri değişerek daha teknolojik bir şekil almıştır. Tüm manuel işlemler artık daha hızlı, daha kolay ve daha rahat bir şekilde çevrimiçi olarak yapılabilir. Bunu gerçekleştirmek için Fintech şirketleri bankalarla işbirliği yaparak dijital cüzdanlar, çevrimiçi ödeme sistemleri, temassız banka/kredi kartı ödeme özellikleri, görüntülü görüşme ile çevrimiçi müşteri hizmetleri, modern ve daha otomatik banka şubeleri gibi yeni çözümler getiriyor. İyi bir dijital dönüşüm stratejisi ile riskleri de öngörerek, finansal kuruluşlar yeni teknolojiyi yakalayarak başarılı bir şekilde dönüşebilirler. Bu araştırma ve gelen müşteri cevaplarının analizinde, Türkiye ve EMEA Bölgesi'ndeki üç farklı bankayı karşılaştırarak, müşterilerin yeni finansal çözümlere yaklaşımında farklılıklar olduğunu görebiliriz. Finansal teknolojilerde dünya standardını yakalamak ve başarılı bir dijital transformasyon stratejisi ve altyapısı ile firmalar büyük rekabet avantajı sağlayacaklardır.

Anahtar kelimeler: Dijital bankacılık, müşteri edinimi, yeni ödeme sistemleri

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1. INTRODUCTION

The usage of the Internet in our daily life, the unstoppable development of technology and competition have made it necessary for financial institutions to work more technology oriented. Because banks have turned to digital banking applications.

In this research, I compare digitalization of three different financial institutions in Turkey and Emea Region below:

- Bank A: This is a Turkish Bank that has activities in Turkey.
- Bank B: This is an European Bank that has activities both in Turkey and Emea.
- Bank C: This is an European Bank that has activities worldwide

BANK A is a Turkish Bank that has activities in Turkey, founded in 1948. They have 770 branches, more than 12.000 employees and 5.300 Atm's in Turkey. They are one the biggest bank in Turkey that leads the digitalization processes in their IT systems in Turkey. They add a new one to its awards every year since 2010 for their mobile and internet banking. They integrated their online banking platforms to Apple watches, customers can easily follow-up banking transactions at everywhere they connect the internet.

As the pioneer of digital banking in Turkey, Bank A offers solutions for its customers' financial needs at the most appropriate points and with the most perfect customer experience. Bank A opened their own "Bank Data Center", which forms the heart of bank's entire technological infrastructure, and the "Life Center", which will

provide social services to 3,000 employees. The center stands out as the largest investment ever made by them at once.

Bank B is an European Bank that has activities both in Turkey and Emea Region, founded in 1930. They have 191 branches, 30.000 Atm's, more than 50.000 employees in Turkey and Europe. Their digitalized mobile application allows customers to create a new bank account, taking loans, make payments without going to a branch via video conference system. They develop digital banking in terms of customer and employee structure.

In the light of our brand strategy, which is based on digitalization and innovation, Bank B removed the term "Bank" from their name in 2019, emphasizing our pioneering attitude in the transformation of the financial sector and our understanding of being a technology company with a banking license. With the "Think Forward" approach that we have adopted as our global strategy, we aim to make it possible for our customers to always be one step ahead in their private and business lives. We are adopting a growth-oriented strategy in digital banking, taking our claim on new generation banking behind us. For us, banking is "a companion that provides easy, effortless and fast financial solutions anytime, anywhere". As one of the pioneers of new generation banking, we offer innovative products and services to our customers through our branches, digital channels, strategic business partnerships and mobile sales. We reach with our strength.(Ing Bank, 2020).

Bank C is an European Bank that has activities worldwide but mostly in Europe, founded in 1870. They have 2000 branches, 60.000 Atm's, more than 82.000 employees in Europe and worldwide. They are one of the most developed bank digitally worldwide, their competitive works on digital banking discoveries and innovations are influential.

Bank C corporate division is improving an innovative financial solution on the intersection of Internet of Things, 'Pay per use' and new financial services business models. Thus, they have another opportunity to collaborate with multiple fintechs and Internet of Things companies to offer clients new financial tools to grow and adjust to market demands. Fintechs and emerging startup companies are applying modern technologies in their respective market segments in order to differentiate themselves – for example in the area of mobile payments or consumer loans. In the majority of cases, fintechs are not regulated and they either ignore the regulation or rely on banks to provide the regulated services or coverage for them – hence there is a partnership opportunity for both sides.(Perez, 2021).

2. DIGITALIZATION FOR FINANCIAL INSTITUTIONS

Digitalization explains the process of converting information into a digital format, things that have been done manually can now be done online, faster and easier. We have this transformation in our daily lives from shopping to banking transactions. Many banking and finance companies are looking for ways in which they can accelerate digital transformation in their business functions. Digitalization for financial institutions, transforming business operations and performance, customer service and experience in more automated, secure and faster requires an automation capability with artificial intelligence, process mining, analytics and other advanced tools. Financial institutions need to adapt to ongoing industry transformation. However, catching the competitors in the market, they must consider changes across people, processes and technologies to create open, intelligent operational systems that support the business. To be able to live digitalized, people need to connect to the internet. Table below shows us the usage of internet in last 10 years by percentage.

Table 1

Internet access Total, % of all households and Individuals, 2022

Breakdowns	All (individuals aged 16-74)									
Indicator	Individuals using the Internet (%)									
Country	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Year										
Austria	80,03	80,62	81,01	83,93	84,32	87,94	87,48	87,75	87,53	92,53
Belgium	80,72	82,17	85,00	85,05	86,52	87,68	88,66	90,28	91,53	92,79
France	81,44	81,92	83,75	84,69	85,62	86,56	88,17	89,39	..	91,55

Germany	82,35	84,17	86,19	87,59	89,65	90,25	92,35	92,98	94,30	91,43
Hungary	70,28	72,42	75,65	72,83	79,26	76,75	76,07	80,37	84,77	88,64
Italy	55,83	58,46	61,96	65,57	68,88	70,97	74,15	75,57	77,95	81,59
Netherlands	92,86	93,96	93,17	93,10	93,28	95,33	94,66	96,05	94,02	94,52
Spain	69,48	71,64	76,19	78,69	80,56	84,60	86,11	90,72	93,21	93,90
Sweden	93,18	94,78	92,52	90,61	93,31	96,19	92,08	97,55	97,08	96,76
Turkey	42,71	43,16	48,49	51,60	58,35	64,68	71,04	73,98	77,67	81,41

Note. Data extracted on May 2022 UTC (GMT) from (OECD. Stat ,2022).

Traditional business models and banking transactions are having a new way. Financial industry always have a big demand while digitalisation takes a good place in business models where needed new ideas and innovation. Organizations that deliver highly digitized business capabilities in a composable and modular way have the biggest opportunities. In terms of these opportunities, financial institutions have a reputable saving from their operation costs and time. When innovating operations, balancing the risks, capabilities and potential costs against business benefits should be considered. The main purpose of digitalization is saving costs and reducing operation times. Reducing number of bank branches and headcounts, creating more automated branches and increase operation efficiency with RPA (Robotic Process Automation) systems, natural language processing (NLP), machine learning (ML) and artificial intelligence (AI), financial institutions will be able to gain a competitive advantage, save money and time.

Traditional banking transactions are now occurs online in digital channels of banks. They can offer a wide range of transactions online such as summary of the day, loan applications and view the payment plan, account informations and activities, money transfers, list of saved payments, creating digital banking passwords, learn exchange

rates, learn the nearest ATM, product and service offers and application, connect to live support if customer needed.

Looking at customer preferences, the vast majority of customers receiving banking services in Turkey (65%) use mobile banking. 21% prefer to use internet banking, while only 14% still prefer to use branches. From the point of view of digitalization of traditional banking services, Turkey performs with 50% above the EMEA average (40%). With this result, it is clear that banks, like customers, are more focused on mobile and internet banking than Branch Banking. Users benefit from digital banking services in most of their daily banking operations, such as account opening, money transfer, and managing personal accounts. (Cavus, 2018).

The main purpose of digitalization is saving costs and reducing operation times. Reducing number of bank branches and headcounts, creating more automated branches and increase operation efficiency with automation, machine learning, new online payment systems,. As a result, financial institutes will gain a competitive advantage, save money and time. Digitalization for financial insituties allows cost saving from operations while considering from the financial perspective. Better customer service and experience, automated human resources, increasing day-to-day operations efficiency, gain a competitive advantage, simplifying IT systems, reducing operation costs and time are the main benefits of digitalization for financial insituties.

Company will increase the efficiency by automating processes and augmenting decisions through digitalization. Bank, investment and insurance CIOs have an abundant choice of overlapping automation tools, making it a challenge to determine what to use and how. CIOs should start the selection process with a

clear view of the business problem and then determine which automation technologies can solve it. (Shotton & Sturgill, 2021).

On the other hand, while financial insitutes are creating digital transformation strategies, they need to be aware of effects of digitalization. They aim to create fast and easy digital banking for customers to be at the forefront of the industry. The biggest problem is usually the security. Financial insitutes need to secure customer's information from fraud. Keeping security updates and products up-to-date, following the product innovations and solutions in IT teams, increasing awareness of customers and workers inside the company from fraud activities are the main circumstances to protect from fraud and risky activites. Some financial insitutes have their database in Cloud while some of them have in their private data centers. Regulatory updates and information security are one of the main objects of the digital transformation strategy. Financial insitutes have different channells to reach customers and new digital solutions for customers are increasing in the industry from different channells such as mobile, telephone, online banking. The disruption of computer systems and computer networks can have a devastating impact on modern life. Financial systems are one of the best target of cyberattacks.

The disruption of computer systems and computer networks can have a devastating impact on modern life. Financial systems are one of the best targets of cyber attacks. Banks need to create innovative digital transformation strategy that is secure and fast. Regulatory updates and information security are among the main determining factors of the digital transformation strategy. Also, more of contactless fintech services must developed and adapted for digital and direct consumer banking. World is digitalizing fast, keeping up with changing business models for financial insitutes has a lot of resposibilites. In this research, I will explain the digitalization concepts, what

digitalization will bring in positive and negative way while comparing three financial insituties in Emea Region and Turkey. On the other hand, keeping up with next generation is very important for business because they will be the future customers of the banks. While, catching this competitive advantage may only happen with automated, innovative, fast and secure digital transformation strategy that moves beyond.

Financial istituties must have a clear view of their needs and expectations through their capabilities for digitalization strategy. Successful digital transformation only comes from a clear view approach. Transforming only selected process without review and redesign should bring more workforce and short term solution. A good digital transformation strategy must have an overall review, analysing all the steps in the process and must be a clear view of the desired business outcome. For long-term effect, review the entire process is very important. To design a new process, company need to consider potential tools and workers'capability. New technologies and solutions for the needs can be recreated or outsourced to implement the digital transformation.

2.1 Fintech Organizations

Fintech compaines have activites in computer programs, innovatiove solutions and products of technology that supports banking and financial services. As the financial services digitalized, they collobrate with fintech companies to bring successful, easy and creative business models for the companies. With their products and solutions, banks can implement their digital transformation ideas in their way of doing business. In these days, banks become IT companies rather than traditional banks as before. The way they reach customers, opening accounts, giving cash loans, advertising and campaigns, branch structure are changing while they digitalised, they need to implement smart and automated solutions to achieve modern experiences for employees and customers. To

achieve this cost and time saving experience, fintechs and banks are definitely complete each other. For example, an e-commerce company offers their customers several online payment options. For a digital wallet and loan options are under responsibility of that e-commerce company. We can call them a fintech company as well. That is an alternative solution of a bank for online payments with their digital systems under legal payment regulations and security policies.

Banks and fintechs are locked in competition. But as banks examine the drivers, challenges and opportunities in the financial industry, it's increasingly evident that everyone should all be sitting on the same side of the table. Today, bank and fintech partnerships are leading the way to the future of financial services. There's still a significant gap in the market for modern banking services designed for established banks and their existing payment products. This means there's an opportunity to modernize the entire financial ecosystem via collaboration between banks, networks, processors and of course, fintechs. The way I see it, there will be two types of fintechs going forward: those who attempt to rebuild our banking world from the ground up and those who digitize existing infrastructure to reach clients faster. (Andrew Jamison, 2021)

2.2. Digital Transformation Strategy

Only with a good digital transformation strategy, banks can successfully implement new solutions with minimum risks. Information security, infrastructure maintenance, employee trainings to adapt new culture are the main circumstances during digital transformation.

Digital transformation strategy has different perspectives; business, financial, customer relationship and digital best practices.

Business perspective:

- Future initiatives impacting the bank performance
- Regulatory updates
- Operational efficiency
- Asset quality to implement fast and secure infrastructure
- Employee trainings for the new features

Financial perspective:

- Improved profits
- Control costs

Digital Practice Perspective:

- Digital products / portfolio ability
- Adapting the market
- Digital initiatives impacting the bank performance and customers

Customer Relationship Perspective:

- Digital feature introduction
- Customer adaption and evaluation
- Customer reactions

Digital workforce and innovations for financial institutions are getting developed more after the Pandemic. This will affect the way of doing business and customer experiences in the future. Financial institutions in around the world now face some challenges after digitalization and they need to plan, adapt the new future after Pandemic.

Employees started to work remotely at various locations brings vulnerabilities. They need to invest more in security controls and network support as a digital collaboration tools and sources. Market demand and customer expectations might be change, this might bring a huge stress for these organizations. Developing business resilience, digital products and services are very important to pretend from this stress.

Operation resiliency for all business functions such as business and technology services has never been greater. Delivering effective and satisfied digitalization process allows banks to have great opportunities. Banks which have systems like Artificial Intelligence will gain a competitive advantage. They will increase efficiency by automating processes and make better decisions through digitalization and automation at their services and systems. While developing digital platforms, they need to build a digital ecosystem for partnerships, vendors, service providers to deliver specific customer requirements and experiences. Working with business peers to understanding the needs and demands of the bank's targeted customers is important for a successful digitalization process and resilience.

Covid-19 disruption to business has reshuffled priorities for CFOs and treasurers. They must address how to: maintain access to liquidity /credit; implement back-up procedures; create visibility to total cash in global locations; determine cash requirements in the short and medium term; and assess current exposures.

Transforming business models is a key theme emerging from our survey of more than two hundred CFOs, with four discernible trends:

1. Traditional B2B businesses entering B2C and a growing interest in e-commerce. E-commerce has risen by 50% in Europe since March and we expect sustained online volume growth of more than 50% globally in 2021 and 2022. This will trigger the need for innovative collections solutions.

2. A move toward real-time treasuries. CFOs are willing to monitor and be notified about real-time account balances. They believe that instant payments, application programming interfaces (APIs), and open banking will be the technologies/services with the biggest impact on B2B payments over the next two or three years.

3. Usage of cash applications. Automated accounting and reconciliations systems, and e-invoicing technologies are expected to increase.

4. Centralisation of cash management. Treasurers are willing to rationalise bank accounts; between 20% and 50% of treasurers intend to implement virtual accounts this year. (Laboure, Reid 2021).

3. COMPARISION OF BANKA, BANK B & BANK C

3.1. Modern Branches

Financial insitutes started to create new designed and more automated with less people, more innovative branched around the world. As simple transactions can be done online, they focused on giving customers professioan banking services in most effective way in the branches. I will compare and explain the different solutios of these three financial insitutes that have made.

Bank A, aimed to transform the employee's work, their monitoring system and the architecture to have new modern branches. They focus on more professional financial services in the modern branches rather than simple transactions such as money transfer, insurance etc. They put a self service counters for any bank transactions, advanced analytical models, identify the needs very fast and save time for their customers. While, they decreased the paper waste, signature numbers and crowded inside the branches. This is a Turkey based bank that they work very efficient in their new IT infrastructure systems to achieve their digitalization transformation goals.

Bank B, created a inhouse branches like a café store inside the shopping malls to let their customers have information about their products and campainings. They aim to have these branches at where people get socialised, want to be a part of their daily life and save time for people. This is an Europe based bank that has branches in Turkey too, they are more social and creative in campainings. Bank B also have an innovatiove and automated solutions in their branches but not automated as Bank A, they do not have self service counters to cover fall the transactions can be done automed. Thus, they can do these transactions in their mobile bank application

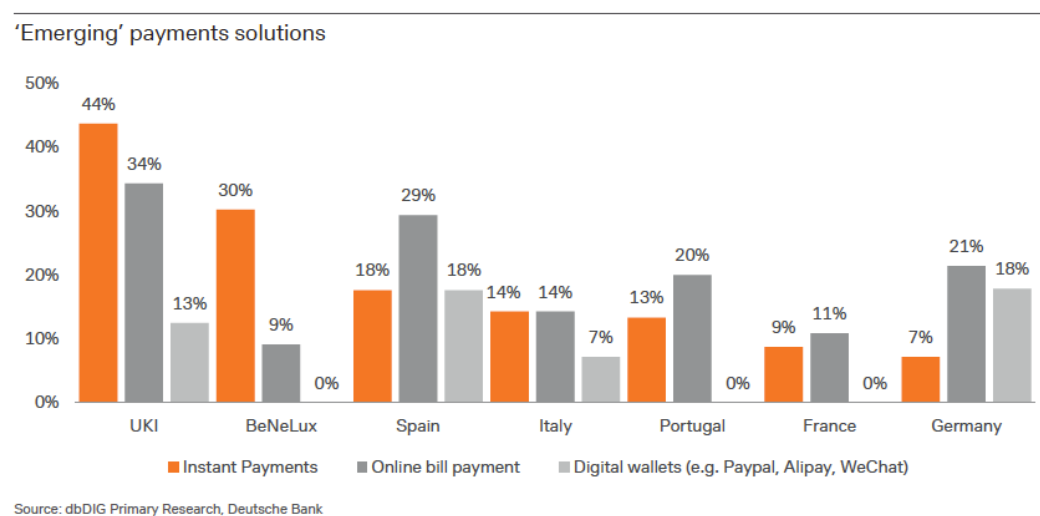
Bank C, holds a big place in EMEA Market, they are focused on financial markets, rich people, large companies. In 2021, they decided to shut down 20% of branches in Europe to adapt and prepare the way of new work in the sector and reduce costs. While, they still have digital branches with less people and more automation.

3.2. Redefining The Future Of Payments

By using digital tools, people can do most of the things automated and faster than they have done manually in the past and ubiquity of mobile technologies introduced more opportunities for digital life style. For preferred payment types, an emerging trend proves that most payments will become digital in future (see Figure1). Financial institutions have different channels to reach customers and new digital solutions for customers are increasing in the industry from different channels such as mobile, telephone and online banking.

Figure 1

Emerging Payment Solutions in Europe (2021)



Note. Popularity of digital payment solutions in some european countries.

Before digitalization, all banking transactions such as money transfers, bill payments, cash loans, credit card applications were done at the branches were carried out within a certain period of time. For all 3 banks that I compare with, they automated those banking transactions to a simple and faster way with their mobile applications, online and telephone banking. While they simplified their branches for their customers, they need to adapt new technologies, collaborate with fintech companies to bring faster, secure and easier solutions.

E-Commerce sector increasing too fast and people make payment online more than before. Then, digital payment solutions are getting popular, more people will adapt to these solutions. Digital wallet is a financial transaction application that runs on mobile devices. Digital wallets and NFC are one of the quick, safe and easy payment solution for the financial institutions. NFC is a technology that allows card readers and certain devices to communicate over a short distance. NFC payments can be accepted using Android devices, iPhones, laptops, tablets and smartwatches, as well as NFC-enabled credit cards. NFC is convenient for businesses and presents little additional risk.(Treece, 2021).

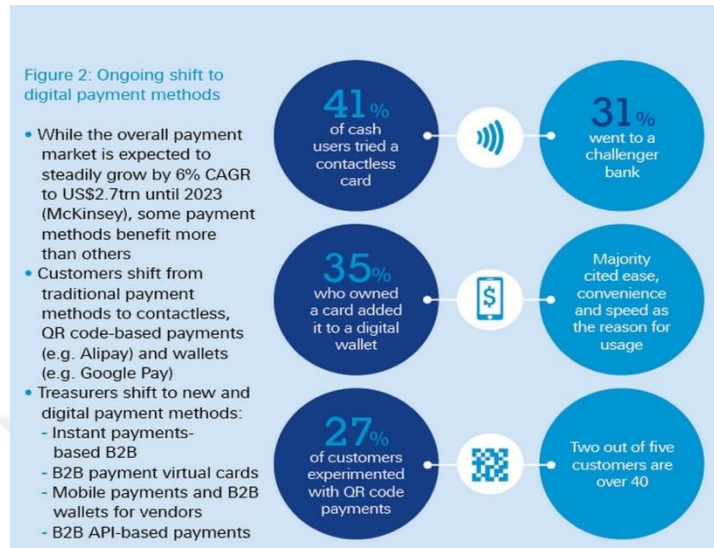
Contactless payment methods have been gaining popularity and digital wallets are one of the method. They store credit and debit cards, allowing you to use smartphone or smartwatch to make a purchase. Credit and debit cards aren't the only things you can keep in a digital wallet. You can also store gift cards, membership and loyalty cards, coupons, event tickets, plane tickets and more. Plus, you can use many digital wallets to transfer money to other people.

Different digital wallets use different technologies to process payments:

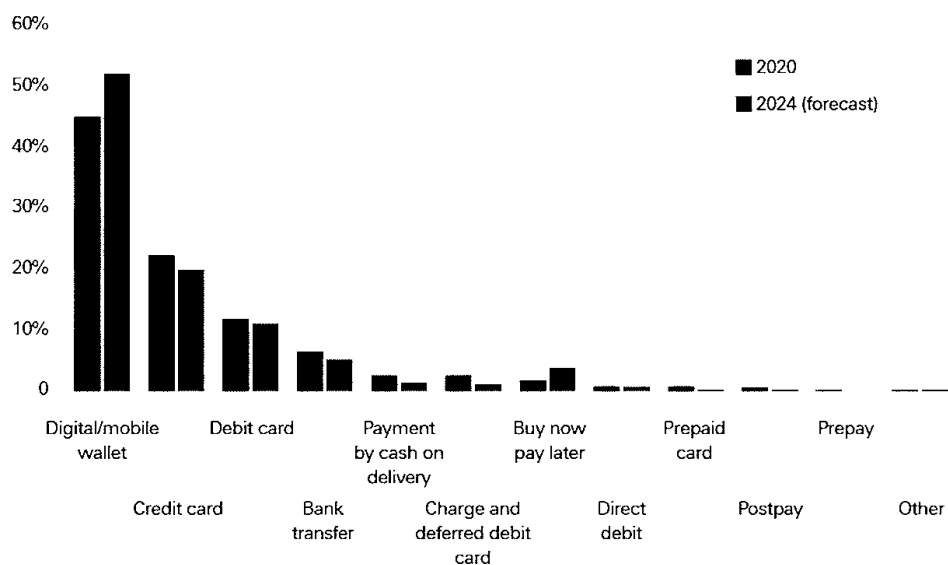
- Near Field Communication, or NFC: This allows two devices to exchange information if they're placed close to each other. Apple Pay and Google Pay use this technology. To use one of these digital wallets, the merchant must have compatible card readers at checkout.
- Magnetic Secure Transmission, or MST: This generates a magnetic signal, much like when you swipe the magnetic stripe on a credit card. The signal is transmitted to the payment terminal's card reader. Samsung Pay uses both MST and NFC technology.
- QR codes: These are barcodes you can scan with your smartphone's camera. In the PayPal app, for example, you can generate a QR code that lets you use your account to pay for an item in a store.(Rathner, 2021) .

Bank A created a special digital wallet application with a private name to submit digital payment solutions for their customers. They also send their customers a physical card for their digital wallet to use for shopping, money transfer and getting socialized. They created campaigns and gift voucher system for theatres, concerts or other social activities to attract customers to use digital wallet application more. In Turkey, this solution is newly getting popular, this bank is the first Turkish bank to bring this solution in Turkey.

Bank C, collaborates with Apple Pay worldwide with the virtual bank cards without annual fee. This digital payment method is an advantage for the customers to save time, money and feel more secure from fraud. People in EMEA Region are adapted this solution before than others.

Figure 2*Ongoing shift to digital payment methods*

Note. According to the table below, Capgemini company had a research on payment methods that has changed in 2020. People started to use contactless card, QR Code payment and digital wallet to adapt new banking systems.

Figure 3*Global e-commerce payment methods*

Note. Figure 3 shows the preference for online payment method preference percentage by type of feature. In 2024, digital wallets are expected to take place of bank transfer features such as direct debit cards.

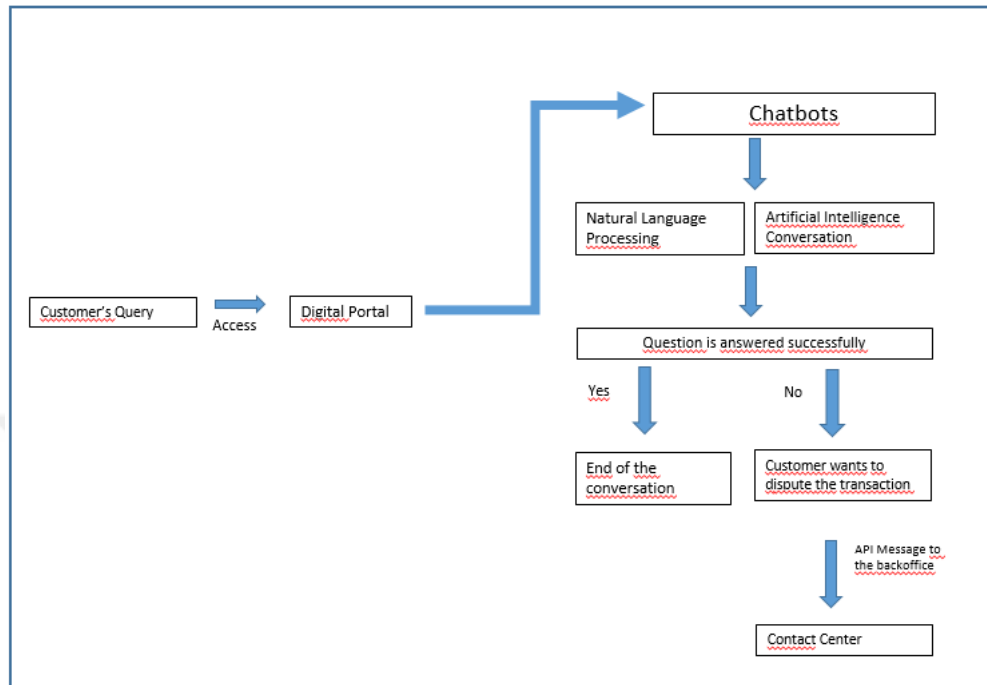
3.3. Digital Customer Experience

Most people do not relish the thought of spending minutes of their lives listening to customer service call center. Make it easier for customers to get answers to their questions, reduce the repetitive calls to the contact center, cut wait times are the main reasons for customer service for financial insituties also need to get digitalized.

As banks get digitalized, competition and rising customer expectation have become a general rule to adapt in this sector. Reduce costs and time, banks have to keep up with the new trends to tend to their customers promptly. Financial institutions need to be digitally transformed to deliver a good banking experience with a business transformation by Artificial Intelligence (AI) in online or retail. Banks should focus on creating an experience culture depend on customer expectations and satisfaction levels.

Easy accessibility in digital platforms, instant support for customers, chatbots, live assistance, personalized services and using big data, understand customer expectations, transparency, security and trust for digital customer service tools are the main solutions and innovations for the digitalized customer experiences.

For all Banks, chatbots are active to use artificial intelligence and natural language processing to simulate conversations in a natural-sounding language and answer customers' questions. Below, we can see how chatbots are working on telephone banking.

Figure 4*Chatbot simulation*

Note. Figure 4 shows how chatbots work while customers ask requests as a listening channel. Banks might understand user habits better, anticipate customer actions and distribute personalized services.

3.4. Customer Acquisition

Bank A, started virtual customer acquisition via their mobile application. People who has a smart phone and Bank A mobile application can easily be a new customer. They are already doing financial transactions in mobile and internet banking, new customers do not need to go to a branch to open an account or use credit. After they apply online, they can have a virtual video conference with a customer service and scan their ID to open a new account. Afterwards, they shift agreements to their customers. They are very

successful on campaigns inside Turkey for customer acquisition. Advertisements attract people, prizes and gifts for new customers are very attractive to potential customers.

Bank B has a vision of being technology company with a banking licence and bring financial services wherever and whenever people are. Now people want banking services instead of banks that focus on products and services that will meet customer's demand. Bank B have increased their investments in technology and non-branch channels for the last 4 years, 100 million a year. Who has a smart phone can easily do all banking transactions in one application of Bank B. Bank B use virtual video conferencing system and scanning ID on the smart phone cameras for new customer acquisitions. People do not need to go to a branch to open an account or use credit, they can do them with Bank B's mobile application easily. Bank B send agreements online and just ask for a e-mail reply from their customers. On the other hand, they aim to gain customers in their daily life, that's why they created mobile inhouse service points in shopping malls. They create their customer acquisition strategy depend on customer expectations. Those inhouse service points looks like a coffee store but gives customers enough information about financial solutions. Bank B believes that the time is the most important think for the customers, to reduce time spendings for financial transactions, they aim to be inside their daily life to achieve new customers. To give them trainings for their new digital solutions, campaigns, new products, they can reach customers easily online as well as innovative solutions such as inhouse service points. They want their customers spend less time on banking and more time on life.

Bank C, does not use physical actions to reach customers, they are more innovative to reach current customers and gain new customers by digital channels. Bank C has a very simple mobile application, that people can easily access and be a customer with mobile banking by checking identity online via web cam or sms code. Their application has a

multiple banking section that others do not have, people can add otheir other bank accounts, cards and digital wallets. This means that, people can see their entire bank accounts in one single mobile application of Bank C. Their digital vision is to create a real-time digital environment for clients, people and partners.



4. EFFECTS OF DIGITALIZATION

Develop digital banking products and services, deliver better employee and customer experience, banks need to adapt some challenges. In terms of these circumstances, banks need to process technology innovations carefully;

- The bank's intelligence and analytics capabilities
- Available resources for investment (people, process, technology)
- Operation capabilities for collaboration and alignment
- Stable and consistent deployments
- Privacy, security and ethics framework
- Employee and customer trainings
- Governance and regulations
- Legacy modernization
- Cost optimization
- Improved information technology systems
- Cultural adaptability and maturity, resistance to change
- Platform and ecosystem development
- Secure and fast location independent services for their ecosystem
- Automate everything that can be automated
- Multiple technologies that work together

4.1. Advantages And Disadvantages

4.1.1. Advantages

- Electronic services from any point where there is an internet connection
- The opportunity to make transactions without going to the bank saves time.
- An easy-to-access and fast transaction service
- Possibility to grow at low cost without the need to open a branch
- Opportunity for banks to expand their customer network through innovations
- Faster and easier access to customers with digital channels
- Adapting to the digital world in the sector
- Being able to fulfill customer demands at anytime.

4.1.2. Disadvantages

- Information security risk is the biggest disadvantage. Weakness of employees or customers, inadequacy of company infrastructure or equipment, lack of information may cause this
- Failures in the provision of electronic services in case of lack of internet infrastructure
- It is more difficult to correct mistakes made on the Internet rather than a physical
- Applications on the Internet might have a complex structure and the probability of making wrong transactions is high

4.2 Information Security

The bank is responsible for ensuring the confidentiality, integrity and accessibility of information assets. The bank must have an appropriate information security policy in accordance with the legislation and laws and adapted to the needs of the bank. Banks need to invest in technology, people and regulation processes to maintain secure and reliable information security system. A maintained and configured firewall is needed to share, process or store data via internet connection. Information security policy should be up to date depends on the regulation and technology updates.

Banks are obviously a high profile target. The data they gather about their customers both individuals and businesses – is extremely valuable to hackers looking to carry out an easy phishing attack, for example. Because their data is so valuable, they have to be aware of the risks and ready to protect it.(Amigorena, 2021).

While these institutes get digitalized, they automate everything and keep their data on cloud or at their data centers. They keep too much confidential data such as customer details, phone numbers, ID numbers, addresses and financial informations. When they authorize the remote access to data center information systems, they must be aware even more to keep the data safe. Digitalization brings more cyber attacks in our days, keep the data safe and secure become one of the biggest task for financial insitutions. That is why awareness for information security is very important after digitalization. When groups are able to collect and utilize massive amounts of data, they begin to a mass power and influence. This data can be in the form of numbers, pictures, video, audio, or any type of data that can be digitized. Every single data is an advantage for cyber attackers. Attacks can originate from within an organization or from outside of the organization. An internal

user, such as an employee or contract partner, can accidentally leak a data to outside that makes a huge risk for the company. They might accidentally invite malware into the network through malicious email or websites. So, financial institutions must take precautions for these risks. Technology infrastructure integration and maintenance should be done as well as information security awareness bank employees for information security should be increased with trainings and announcements. Education and training for employees, gaining security certificates and work suitable with the standards are very important to protect data and keep information security safe while they get digitalized. At the corporate level, it is the employees' responsibility to protect the organization's reputation, data, and customers.

The biggest threat for banks is internal factors instead of external factors that is usually comes from their employee who is careless or not conscious for malicious threats and risks. A good information security strategy is that prevent the problem before it occurs. Examine, analyse and sort out the potential risks before they have a problem.

5. SEARCH ANALYSIS

5.1. Hypotheses

This study intended to explore the differences in reception of digital services in retail banking, therefore banking consumers from Turkey and Emea Region were targeted. In other words, our key assumption or hypothesis is that, digitalization has changed the consumer behavior in retail banking beyond doubt in many regards. Especially during several isolation periods after pandemic, authorities enforced limitations on access to many services including banking ones, so online solutions emerged in retail banking and people embraced the digital life style essentially.

For data collection and to test research questions, three financial institutions from Turkey and EMEA Region were selected. Selection criteria for these financial institutions was their operational activities in different regions or country and below is the list of included banks:

- Bank A: This is a Turkish bank that has operations only in Turkey.
- Bank B: This is an European bank that operates both in Turkey and EMEA Region.
- Bank C: This is an European bank that has activities only in Europe.

Table 2*Research hypotheses and constructs*

Hypotheses	Constructs
There exists a difference between customers' satisfaction with the digital advantages and solutions provided by the banks during the pandemic process	- Satisfaction level with the digital services - Satisfaction level with the security
There exists a difference between usage of digital tools for customer service	- Level of internet banking services usage - Level of mobile banking applications usage - Video conferencing tools

An online questionnaire was administered within the operational periphery of the selected financial institutions. The data obtained from the questionnaire was analyzed through the SPSS 25 program. The frequency distribution (frequency and percentage) and graphs were used for the banks in which the customers involved in the study received services. Kruskal Wallis test was applied in comparison analysis due to the fact that the dependent variable was included in the ranking scale when evaluating the data in the study, and there were more than 2 independent variables. The results were evaluated at the level of significance $p < .05$, within the confidence of 95%.

5.2. Findings

Table 3

Percentage distribution of respondents from 3 banks

Type of Customer	Number (n)	Percentage (%)
Bank A	95	52,5
Bank B	38	21,0
Bank C	48	26,5
Total	181	100,0

Note. Total of 181 customers were responded to the online survey. Just above half of the respondents were customers of bank from Turkey, and lowest frequency belongs to the bank operating in both Turkey and EMEA region (Table 3).

Table 4

Frequency distribution of respondents from 3 banks

Bank Type	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Bank A	95	52,5	52,5	52,5
Bank B	38	21,0	21,0	73,5
Bank C	48	26,5	26,5	100,0
Total	181	100,0	100,0	

Table 5

Examination of the difference between the digital advantage and solution levels provided by the bank between the clients of Banks A, B and C

Variable	Type	n	$\bar{x}_{line}$	χ^2	sd	p
Satisfaction with the digital	Bank A	95	89,92			
advantages and solutions	Bank B	38	84,66	1,930	2	,381
provided by the bank	Bank C	48	98,16			

Note. The Kruskal Wallis test was applied to compare the level of satisfaction of customers working with banks A, B and C with the digital advantages and solutions provided by the bank during the pandemic. Accordingly, there are no significant differences in the level of satisfaction with the digital advantages and solutions provided by the bank during the pandemic process compared to customers of banks A, B and C. In other words, it seems that the levels of satisfaction with the digital advantages and solutions provided by the bank during the pandemic process between banks A, B and C and customers do not differ decidedly. Preliminary analysis of the collected data indicates that H1 is rejected, or there exists no difference between satisfaction level of customers from Turkey and other regions.

Table 6

Examination of the mobile application usage for banking transactions by the clients of Banks A, B and C

Variable	Type	n	$\bar{x}_{line}$	χ^2	sd	p
I use mobile application for my banking transactions	Bank A	95	95,56	7,992	2	,018
	Bank B	38	98,26			
	Bank C	48	76,22			

Note. The Kruskal Wallis test was applied to compare between the levels of mobile application usage for banking transactions between customers working with Bank a, Bank B and Bank C. Accordingly, there are no significant differences in the level of mobile application usage provided by the bank during the pandemic process compared to customers of banks A, B and C ($p > .05$). In other words, it seems that mobile banking application usage do not differ decidedly between the customers of them. (Table 6).

Statistical analysis for the other variables such as usage of internet banking, and customer service over the phone indicated similar results, therefore our second hypothesis (H2) stating that there exists a difference between usage of digital tools for customer service is rejected.

Table 7

Frequency distribution of internet banking usage

Bank Type			Frequency	Percent	Valid Percent	Cumulative Percent
Bank A	Valid	Never	10	10,5	10,5	10,5
		Rarely	23	24,2	24,2	34,7
		Usually	19	20,0	20,0	54,7

		Always	43	45,3	45,3	100,0
		Total	95	100,0	100,0	
Bank B	Valid	Never	11	28,9	28,9	28,9
		Rarely	8	21,1	21,1	50,0
		Usually	4	10,5	10,5	60,5
		Always	15	39,5	39,5	100,0
		Total	38	100,0	100,0	
Bank C	Valid	Never	3	6,3	6,3	6,3
		Rarely	6	12,5	12,5	18,8
		Usually	16	33,3	33,3	52,1
		Always	23	47,9	47,9	100,0
		Total	48	100,0	100,0	

Note. Questionnaire ‘Usage percentage of internet banking for the transactions.’

Table 8

Frequency distribution of mobile application usage

Bank Type			Frequency	Percent	Valid Percent	Cumulative Percent
Bank A	Valid	Never	1	1,1	1,1	1,1
		Rarely	5	5,3	5,3	6,3
		Usually	19	20,0	20,0	26,3
		Always	70	73,7	73,7	100,0

Total			95	100,0	100,0	
Bank B	Valid	Never	3	7,9	7,9	7,9
		Rarely	1	2,6	2,6	10,5
		Usually	4	10,5	10,5	21,1
		Always	30	78,9	78,9	100,0
		Total	38	100,0	100,0	
Bank C	Valid	Rarely	6	12,5	12,5	12,5
		Usually	17	35,4	35,4	47,9
		Always	25	52,1	52,1	100,0
		Total	48	100,0	100,0	

Note. Questionnaire ‘Usage percentage of the mobile application for banking transactions.’

Table 9

Frequency distribution of contactless payment

Bank Type			Frequency	Percent	Valid Percent	Cumulative Percent
Bank A	Valid	Never	9	9,5	9,5	9,5
		Rarely	4	4,2	4,2	13,7
		Usually	30	31,6	31,6	45,3
		Always	52	54,7	54,7	100,0
		Total	95	100,0	100,0	
Bank B	Valid	Never	6	15,8	15,8	15,8
		Usually	9	23,7	23,7	39,5
		Never	23	60,5	60,5	100,0

Total			38	100,0	100,0	
Bank C	Valid	Never	3	6,3	6,3	6,3
		Rarely	3	6,3	6,3	12,5
		Usually	19	39,6	39,6	52,1
		Always	23	47,9	47,9	100,0
		Total	48	100,0	100,0	

Note. Questionnaire ‘ Usage percentage of the contactless payment feature for purchases with debit card.’

Table 10

Frequency distribution of customer solutions in branch

Bank Type			Frequency	Percent	Valid Percent	Cumulative Percent
Bank A	Valid	Never	57	60,0	60,0	60,0
		Rarely	31	32,6	32,6	92,6
		Usually	4	4,2	4,2	96,8
		Always	3	3,2	3,2	100,0
		Total	95	100,0	100,0	
Bank B	Valid	Never	19	50,0	50,0	50,0
		Rarely	17	44,7	44,7	94,7
		Always	2	5,3	5,3	100,0
		Total	38	100,0	100,0	
Bank C	Valid	Never	18	37,5	37,5	37,5
		Rarely	18	37,5	37,5	75,0
		Usually	12	25,0	25,0	100,0

Total	48	100,0	100,0	
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Note. Questionnaire ‘When there is a problem with digital banking applications, customer needs to go to the branch for a solution.’

Table 11

Frequency distribution of customer service solutions

Bank Type			Frequency	Percent	Valid Percent	Cumulative Percent
Bank A	Valid	Never	2	2,1	2,1	2,1
		Rarely	17	17,9	17,9	20,0
		Usually	51	53,7	53,7	73,7
		Always	25	26,3	26,3	100,0
		Total	95	100,0	100,0	
Bank B	Valid	Never	2	5,3	5,3	5,3
		Rarely	2	5,3	5,3	10,5
		Usually	19	50,0	50,0	60,5
		Always	15	39,5	39,5	100,0
		Total	38	100,0	100,0	
Bank C	Valid	Usually	12	25,0	25,0	25,0
		Always	36	75,0	75,0	100,0
		Total	48	100,0	100,0	

Note. Questionnaire ‘When there is a problem with digital banking applications, it is enough to call customer service for a solution.’

Table 12

Frequency distribution of the information security solutions

Bank Type			Frequency	Percent	Valid Percent	Cumulative Percent
Bank A	Valid	Never	3	3,2	3,2	3,2
		Rarely	4	4,2	4,2	7,4
		Usually	34	35,8	35,8	43,2
		Always	54	56,8	56,8	100,0
		Total	95	100,0	100,0	
Bank B	Valid	Never	1	2,6	2,6	2,6
		Usually	16	42,1	42,1	44,7
		Always	21	55,3	55,3	100,0
		Total	38	100,0	100,0	
Bank C	Valid	Rarely	6	12,5	12,5	12,5
		Usually	7	14,6	14,6	27,1
		Always	35	72,9	72,9	100,0
		Total	48	100,0	100,0	

Note. Questionnaire ‘Satisfaction level for the solutions provided by bank's information security team in case of suspicious transactions.’

Table 13

Frequency distribution of satisfaction from security solutions

Bank Type		Frequency	Percent	Valid Percent	Cumulative Percent
Bank A	Never	3	3,2	3,2	3,2
	Rarely	4	4,2	4,2	7,4
	Usually	34	35,8	35,8	43,2
	Always	54	56,8	56,8	100,0
	Total	95	100,0	100,0	
Bank B	Never	1	2,6	2,6	2,6
	Usually	16	42,1	42,1	44,7
	Always	21	55,3	55,3	100,0
	Total	38	100,0	100,0	
Bank C	Rarely	6	12,5	12,5	12,5
	Usually	7	14,6	14,6	27,1
	Always	35	72,9	72,9	100,0
	Total	48	100,0	100,0	

Note. Questionnaire ‘I am satisfied with the solutions provided by my bank's information security team in case of suspicious online transactions.’

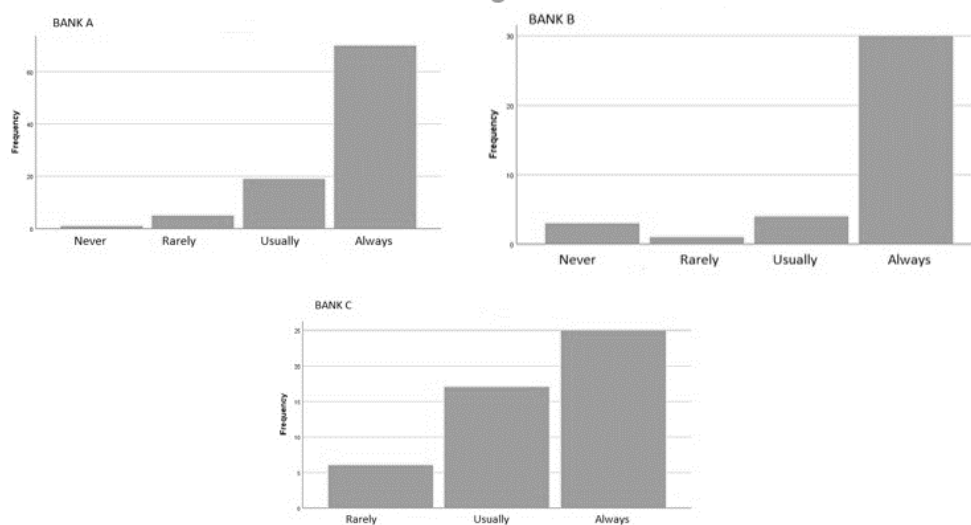
Banks keep confidential data such as customer and financial information in their databases and information systems and they authorized more of their employees for remote access to these systems during social distancing and lockdowns, therefore

vulnerability of system security is increased. However, it is better for financial institutions to pay attention to the trade-off between increased security measures and usability of online services. Adding more security measures to digital services and online banking applications may have an unexpected impact on customer usage and satisfaction.

Below, list of figures shows that the amount of customer preferences according to the bank solutions and services. We can see the difference of customer habits in order to country and region.

Figure 5

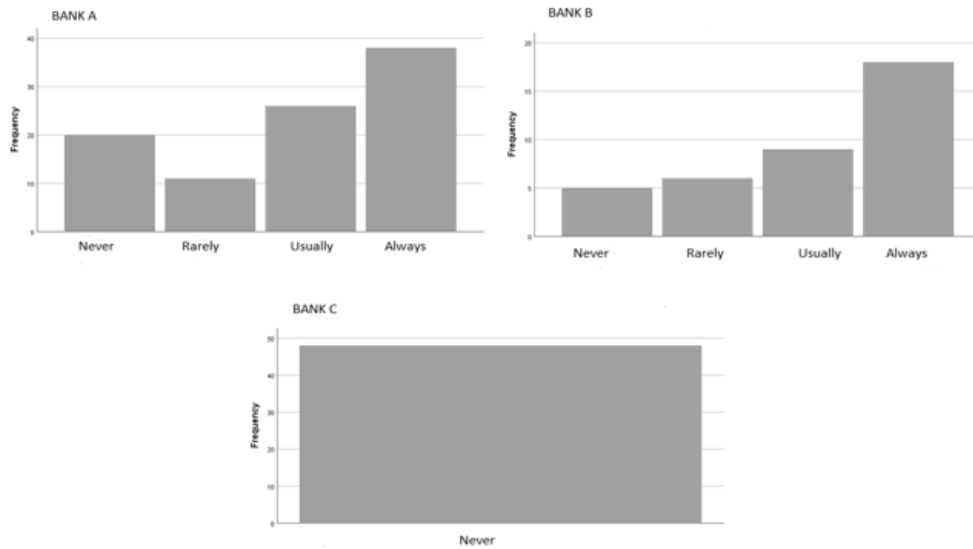
Mobile application user numbers of Bank A,B,C for the banking transactions



Mobile application users are highly similar for each bank, customers are used to use mobile applications for banking transactions.

Figure 6

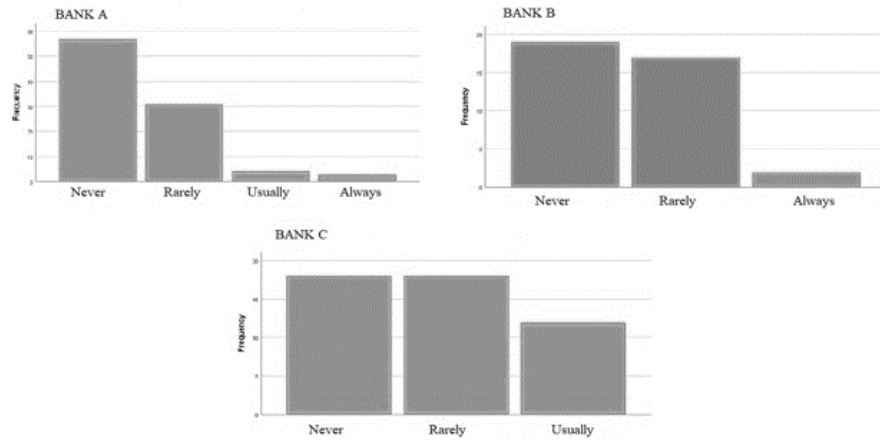
Customers can apply for a loan on mobile application without going to a Branch



Applying for a loan are different in Emea and Turkey. Bank A & B customers can prefer to apply for a loan in mobile or physical at the branch. Bank A & B provides both options for their customers under regulations and procedures. They use virtual video conference system and virtual ID scanning in the mobile application for the loan. However, Bank C in EMEA, does not have an option for a virtual loan application procedure, customers need to go to a branch for a loan application. The regulations and policies might be different in each country.

Figure 7

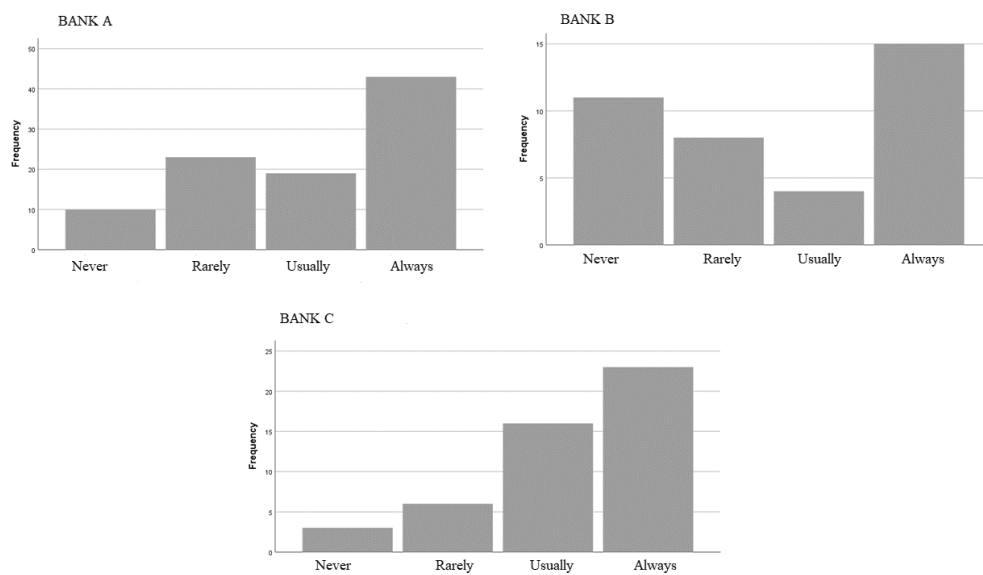
Customers have to go to branch when they have a problem with a digital banking application



All Banks in Turkey and EMEA that I compare with, their online customer service is successful enough to provide solutions when they have a problem with a digital banking application. Technology developments and good infrastructure for customer service, online chatting or video conference system improves the quality of digital solutions.

Figure 8

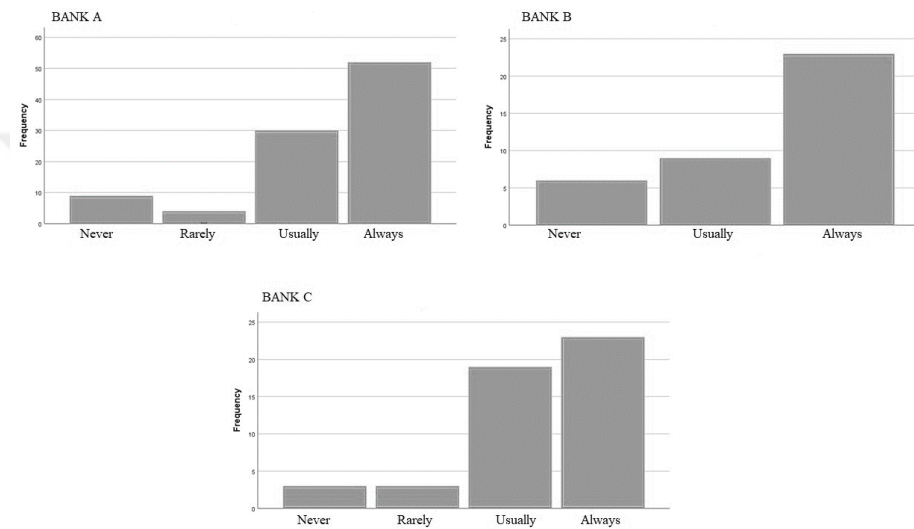
Internet banking users for banking transactions



We can see that customers' behaviour is changing and they get used to use internet banking.

Figure 9

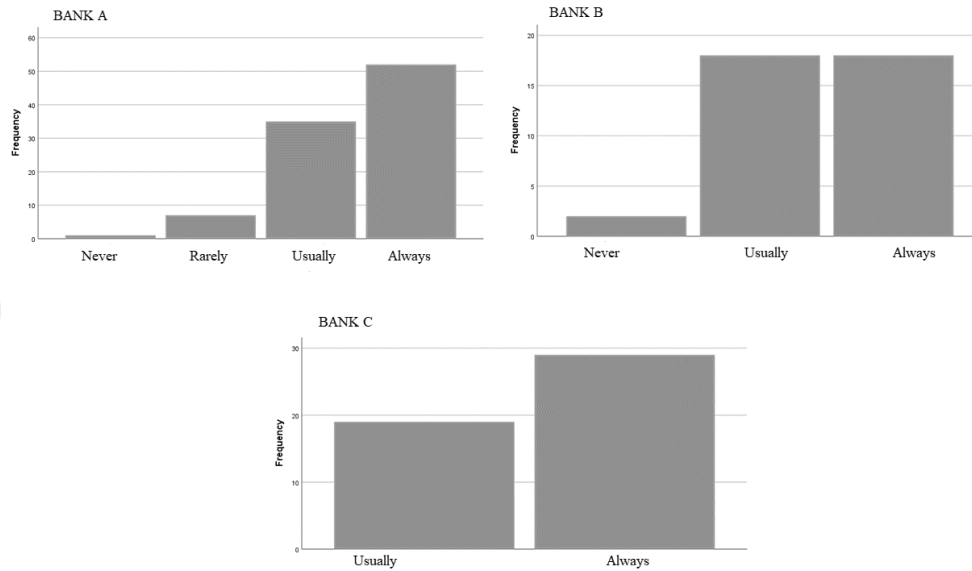
Usage size of the contactless debit card for shopping



Contactless debit card usage is increasing for all banks, customers can make payments quicker and easier with this feature. Entering pin number for the card when make payments is almost disappeared.

Figure 10

Satisfaction level of digital banking solutions and applications during Pandemic



Pandemic bring all banks a huge stress to improve their digital solutions, while customers can not go to a branch for transactions because of lock downs, bank developed their online solutions with the right regulatory updates rapidly. Bank A, B and C are all successful to develop and provide digital solutions for their customers.

6. CONCLUSION

Banking consumers' have been obliged to use more digital services and remote channels to classic channels and branch transactions detriment. This study reaffirms that customers adopted and were using online banking services and other digital channels developed by retail banks. Additionally, results do not support the existence of regional differences between customer reception for most of the digitalized services and online banking. Similarly, retail banking customers from three financial institutions operating in Turkey, Europe and EMEA region put across high satisfaction with the digital solutions.

On the other hand, customers reaction to the fintech applications shows some variation. This may be a sign of unavailability of some fintech tools. Our statistical analysis also verifies such absence of fintech tools offered. For example, based on frequency distribution analysis, QR code withdrawal feature as a cardless transaction is provided just by one bank operates only in Turkey. This is not suprising, in the sense that, depending on their digital transformation strategies retail banks are implementing digitalization initiatives in different pace and urgency. Such fluctuations in digitalization efforts or the late introduction of new technologies by financial institutions can be the limitation for this study. Since no digitalization criteria were preset during the selection of financial institutions, availability of digital technologies in all categories were not taken into consideration. For future research, financial institutions can be selected through benchmarks that are based on diverse and multiple digitalization criterion.

Findings from this study once again emphasized that security is still a major issue for digital service consumption in retail banking. Customers from all 3 financial institutions were satisfied with the solutions and support provided for secure services. Competition and pandemic crisis put distress on consumers since they have to complete most

transactions remotely but the current security measures of banks seems to be working effectively. Although fintech services have a way to go, financial institutions must have a clear view of customer needs and expectations through their capabilities for digitalization strategy even after the COVID-19 pandemic.

By 2024, more than 70% of large global enterprises will have over 70 concurrent hyperautomation initiatives mandating governance or facing significant instability. Financial institutions have started to implement their own IT solutions for their needs and expectations. They have a knowledge and experience for automation and digital transformation. ‘This orchestrated use of multiple technologies within a process moves an organization from simple task automation to what is called “hyperautomation.” Hyperautomation isn’t just about a discipline of orchestrating technologies. It’s also about an ethos change for the enterprise, approaching any process change with the view that anything that can be automated will be automated. This means, for any change, the process is reimagined with an automation-first outlook examining the role for technology and the role for humans. This application of a combination of technologies and the philosophy of rapid progress tied to it are not possible without a structured and disciplined approach.’ (Shotton & Sturgill, 2021).

Instant Payments In the Eurozone, instant payments started to be used in 2017 and they should become mainstream by the end of 2021. A third of executives surveyed believe that instant payment technology will have the biggest impact on B2B payments over the next two or three years. (Marion Laboure, 2021).

There is another challenge for the future is cyber security. Especially for the banks, to secure and ensure the connection process for their employees is one of the main responsibility of them. In terms of governance, regulations, company ethics and

information security is very important. Most of the bank employees hold customer's private data and responsible to keep digital assets safe. To ensure them, cyber security and data centers will have more responsibility more and more in the future for the financial institutions.

On the other hand, COVID Pandemic forced banks for an immediate change. Customers needs and behaviours keep change and banks need to adapt the new World. Banks need to be more innovative, invest in new technology services and products more than before because the need for digitalization for financial institutions increased even faster after Pandemic. Many people now work remotely, digitalization in the work environment allows employees work location independently. Future banks will not be the same as traditional type of banks, all the services are getting automated, customer behaviours are changing with new technology innovations in banking sector. Along with the pandemic, the rapid digitalization of limited lives has led to increased interest in digital banking solutions and applications in our country, as well as all over the world. However, due to both the pandemic and digitalization, the number of branches and therefore the number of employees decreased.

With the permission of remote customer acquisition, we will be able to become the customer of the bank we want without going to any branch of the bank or making physical contact. In this customer-bank relationship, where human interaction is almost non-existent, all interaction will take place through digital applications, we will give our note to the bank depending on the feeling that their digital applications leave us. In a nutshell, whether customers who receive banking services like banks or not will be proportional to the success of their digital experiences alone. In case of dissatisfaction, changing the bank's preference will only take 5 minutes of effort.(Sezer, 2021)

While, pandemic will bring some opportunities for the financial insituties in the future. Banks digitized faster than they expected, this will allow them to discover new paradigms for customers, reskill their employees and launch new business models. To adapt unexpected scenarios in the future, banks need to invest in digital tools and people. With right digital tools, process and automation tools, human errors and fraud could be more preventable for financial insitutions. Machine learning could be the biggest opportunity to pretend fraud while financial insitutions get digitalized in the future. Pandemic is a wake up call for financial insituties to focus on daily operational needs and expectaitions at the expense of investing in digital business and long-term resilience. Rebalancing business priorities and technology investment are in a much better position to capture future growth.

REFERENCES

- Amigorena, F. (n.d.). *Information Security in Banking and the Insider Threat*. IS Decisions Blog. Retrieved April 10, 2022 from <https://www.isdecisions.com/blog/it-infrastructure/information-security-in-banking-insider-threat/>
- Capgemini. (n.d.). *World Fintech Report 2020*. Capgemini. Retrieved August 10, 2021 from https://www.capgemini.com/at-de/wp-content/uploads/sites/25/2020/04/Report_WFTR_2020.pdf
- Cavus, M. (2018, December, 18). *Türkiye, dijital bankacılık 'ta EMEA bölgesi şampiyonları arasında*. BT Günlüğü. Retrieved May 31, 2022 from <https://www.btgunlugu.com/turkiye-dijital-bankacilik-emea-bolgesi/>
- Jamison, A. (2018, December, 3). *Banks And Fintech: A Partnership With A Future*. Forbes. Retrieved January 10, 2021 from <https://www.forbes.com/sites/forbesbusinesscouncil/2021/12/03/banks-and-fintech-a-partnership-with-a-future/?sh=52aabac36aab>
- ING Bank. (n.d.). *Tarihçe*. ING Bank. Retrieved May 1, 2022 from <https://www.ing.com.tr/tr/ing/hakkimizda/tarihce>
- Laboure, M. Reid Jim. (2020, January ,1). *The Future of Payments: Series 2 Part I. Post Covid-19: What Executives Are Thinking and Doing*. Deutsche Bank Research. Retrieved January 10, 2021 from https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD0000000000515432/The_Future_of_Payments_Series_2_-_Part_I_Post_Cov.pdf?undefined&reaload=bPCxtKmod5~zDLZEDwWQhwa wZbjvdcQ0IX13xdUP5t4X/rL8qCVdhyQAcyfEtxko
- Organization for Economic co-operation and development. (2022, May, 15). *Internet Access*. Oecd.Stat. Retrieved May 15, 2022 from <https://stats.oecd.org/>

Perez, G. (n.d.). *Banks and fintechs: potential partners, rather than competitors*.

Deutsche Bank. Retrieved February 15, 2022 from <https://www.db.com/what-next/digital-disruption/>

Rathner, S. (2021, September ,10). *What Is a Digital Wallet and How Does It Work*.

Nerdwallet. Retrieved January 16, 2022 from <https://www.nerdwallet.com/article/credit-cards/what-is-a-digital-wallet-and-how-does-it-work>

Sanders, H. (n.d.). *Reimagining the future of payments*. Flow. Retrieved May 10, 2022 from <https://flow.db.com/cash-management/reimagining-the-future-of-payments>

Sezer, U. (2021, September, 7). *2020 Yılı Türkiye Dijital Bankacılık Raporu*.

Fintechtime. Retrieved January 20, 2022 from <https://fintechtime.com/tr/2021/04/2020-yili-turkiye-dijital-bankacilik-raporu/>

Shotton, L. Sturgill, N.(2021, February, 1). *4 Steps to Automation Success in Financial Services*. Gartner. Retrieved August 1, 2021 from

<https://www.gartner.com/en/documents/3996272>

Treece, D. (2021, November, 19). *What are NFC mobile payments*. Business News

Daily. Retrieved January 10, 2022 from <https://www.businessnewsdaily.com/16250-nfc-mobile-payments.html>

APPENDICES

In this research, I provide the survey responses for each question below;

I use Bank A Internet banking for my banking transactions.

Answer Choices Responses

Always 43

Usually 19

Rarely 23

Never 10

I use Bank B Internet banking for my banking transactions.

Answer Choices Responses

Always 15

Usually 4

Rarely 8

Never 11

I use Bank C Internet banking for my banking transactions.

Answer Choices Responses

Always 23

Usually 16

Rarely 6

Never 3

I use Bank A mobile application for my banking transactions

Answer Choices Responses

Always 70

Usually 19

Rarely 5

Never 1

I use Bank B mobile application for my banking transactions

Answer Choices Responses

Always 30

Usually 4

Rarely 1

Never 3

I use Bank C mobile application for my banking transactions

Answer Choices Responses

Always 25

Usually 17

Rarely 6

Never 0

I use the contactless payment feature for my shopping with my Bank A card.

Answer Choices Responses

Always 52

Usually 30

Rarely 4

Never 9

I use the contactless payment feature for my shopping with my Bank B card.

Answer Choices Responses

Always 23

Usually 9

Rarely 0

Never 6

I use the contactless payment feature for my shopping with my Bank C card.

Answer Choices Responses

Always 23

Usually 19

Rarely 3

Never 3

I use the QR Code withdrawal feature from Bank A ATMs as a cardless transaction.

Answer Choices Responses

Always 25

Usually 23

Rarely 27

Never 20

I use the QR Code withdrawal feature from Bank B ATMs as a cardless transaction.

Answer Choices Responses

Always 0

Usually 0

Rarely 0

Never 38

I use the QR Code withdrawal feature from Bank C ATMs as a cardless transaction.

Answer Choices Responses

Always 0

Usually 0

Rarely 0

Never 48

When there is a problem with digital banking applications, I have to go to the Bank A branch for a solution.

Answer Choices Responses

Always 3

Usually 4

Rarely 31

Never 57

When there is a problem with digital banking applications, I have to go to the Bank B branch for a solution.

Answer Choices Responses

Always 2

Usually 0

Rarely 18

Never 19

When there is a problem with digital banking applications, I have to go to the Bank C branch for a solution.

Answer Choices Responses

Always 0

Usually 12

Rarely 18

Never 18

When there is a problem with digital banking applications, it is enough to call Bank A customer service for a solution.

Answer Choices Responses

Always 25

Usually 51

Rarely 17

Never 2

When there is a problem with digital banking applications, it is enough to call Bank B customer service for a solution.

Answer Choices Responses

Always 15

Usually 19

Rarely 2

Never 2

When there is a problem with digital banking applications, it is enough to call Bank C customer service for a solution.

Answer Choices Responses

Always 36

Usually 12

Rarely 0

Never 0

I am satisfied with the solutions provided by Bank A information security team in case of suspicious transactions.

Answer Choices Responses

Always 54

Usually 34

Rarely 4

Never 3

I am satisfied with the solutions provided by Bank B information security team in case of suspicious transactions.

Answer Choices Responses

Always 21

Usually 16

Rarely 0

Never 1

I am satisfied with the solutions provided by Bank C information security team in case of suspicious transactions.

Answer Choices Responses

Always 35

Usually 7

Rarely 6

Never 0

I can apply for a loan through Bank A mobile application without going to the branch

Answer Choices Responses

Always 38

Usually 26

Rarely 11

Never 20

I can apply for a loan through Bank B mobile application without going to the branch

Answer Choices Responses

Always 18

Usually 9

Rarely 6

Never 5

I can apply for a loan through Bank C mobile application without going to the branch

Answer Choices Responses

Always 0

Usually 0

Rarely 0

Never 48

I am satisfied with the digital advantages and solutions provided by the Bank A during the pandemic process.

Answer Choices Responses

Always 52

Usually 35

Rarely 7

Never 1

I am satisfied with the digital advantages and solutions provided by the Bank B during the pandemic process.

Answer Choices Responses

Always 18

Usually 18

Rarely 0

Never 2

I am satisfied with the digital advantages and solutions provided by the Bank C during the pandemic process.

Answer Choices Responses

Always 29

Usually 19

Rarely 0

Never 0

I am talking to the customer representative via video conference the Bank A mobile application.

Answer Choices Responses

Always 7

Usually 4

Rarely 15

Never 69

I am talking to the customer representative via video conference the Bank B mobile application.

Answer Choices Responses

Always 0

Usually 0

Rarely 0

Never 38

I am talking to the customer representative via video conference the Bank C mobile application.

Answer Choices Responses

Always 0

Usually 0

Rarely 0

Never 48