



Citizen Happiness Indicators and How to Improve them through Digital Transformation

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ABSTRACT

Countries have been working on digital transformation just to provide citizens with a better lifestyle. It has been observed through researches that digital transformation is today's need and without it even an individual cannot survive. This research tends to observe that how the happiness of citizens can be improved through digital transformation. Happiness of all citizens cannot be measured or achieved through a same scale so to identify the areas and how digital transformation is affecting them we use the scale of "need of science" also used as "ABCDE of Needs". In this research primary approach was used in which data was collected through questionnaires and interviews. Experts were also taken into consideration from different governmental institutes such as finance, health and defence. This research aim is to explore how digital transformation initiatives influence citizens' happiness and what variables associated with that relationship. In the current research digital transformation is taken as independent variable and happiness of citizens are taken as dependent variable. The research concludes that there is a positive significant impact of Digital Transformation on citizen happiness. The hypothesis was concluded after analysis from the questionnaires and interviews of experts.

1. INTRODUCTION

1.1-Background

The world is a place full of ideas and innovation. Technology and their gadgets that we use in today's world have a great history behind them. They were not simply developed in the present form. Abacus (first computer) was developed by Charles Babbage which possess the analog features [1][2][3]. Now the difference among abacus and tablets with versatile features is breathtaking this is the result of innovation. Abacus has now been transformed into different forms including smart phones, laptops, personal computers and tablets [4][5][6]. We can also take the example of cameras at the present moment early in the history the cameras were with very low resolution and were really blur but now the cameras have a really high-resolution power with many other features just the perks of innovation [7][8]. Similarly, almost all

other devices have a considerable history behind them. In the 1940s, the father of digital communications, Claude Shannon, created ways for digitization through an article after the invention of the computer, sending messages through Arpanet, the invention of the World Wide Web, telecom services to endless creations till today is the whole journey and Digital Transformation [9][10][11][12]. People of each era, after experiencing one technology, always ask WHAT NEXT? Which cause an increase in demand and leads to new inventions. Digital transformation has made the world a different place. Many countries are now developed because of digital transformation, and UAE is one of them [13]-[17]. In the past ten years, countries have experienced an explosion of ownership of smartphones with high internet penetration has transformed the

whole country in terms of communication, lifestyle, work, bills, and when the government is there to embrace it adds more productivity [18]-[22]. They took initiatives like Dubai's Smart City, and they are also moving the services of government to online platforms so that tasks can be made effective, efficient and costs can be reduced [23]-[24]. The world has been digitally transformed, which impacted its structure and business. FinTech rise is the most notable thing, with financial services and banks. Success and progress is not everyone's cup of tea one must cross many hurdles to attain. The path of progress with digital transformation was not entirely smooth [25]-[27]. The rise of smartphones and their implementation all over the country was just the beginning which can result in serious issues, especially for youth [28]. UAE has been working on digital transformation just to provide citizens with a better lifestyle, and Dubai has introduced Smart Dubai for the happiness and satisfaction of citizens.

1.2- Research Question

How to improve citizen happiness through digital transformation?

1.3- Research Objective

- To determine how citizen happiness can be raised through digital transformation.
- To identify what are the indicators of citizen happiness assessment that must be achieved?

1.4- Significance of Research

The scope of the study is to study and analyze how digital transformation can make citizen happy. Moreover, indicators of happiness would be identified that would lead to result of citizen happiness. If, after a study, it is found that factors of happiness can be generated by the firms who had transformed themselves digitally as compared to those who had not, then this study can help organizations to take initiatives for transformation to make citizens happy [29]-[32].

1.5- Operational Definitions

Variables	Definitions	Source
Digital Transformation	Digital transformation is related to the change that digital technology	(Vial, 2019)

	brings. That change can be related to the model of business, which would affect the whole structure of the organization. In short, by using digital operations of a business can be changed.	
Citizen's Happiness	It fulfils unique needs and expectations by personalizing experiences, including all contact points and areas.	(Zugravu, 2018)

1.6- Hypothesis

- H1**= There is a positive significant impact of digital transformation on citizen's happiness.
Ho= There is a negative significant impact of digital transformation on citizen's satisfaction.

2. LITERATURE REVIEW

2.1- Gap Analysis

The number of articles was considered before doing research. The Internet is a hub of information but not all information is useful so in order to consider and include information, CRAAP test was passed. CRAAP test is a test that is used to measure the credibility of the article, journal and blogs and analyze if the information is suitable to use or not [33]. Several studies have been conducted on digital transformation [34]-[36]. Studies were found individually on Dubai, Sharjah and Abu Dhabi studying the impact of digital transformation on citizen happiness [37]-[40]. Few studied the impact of digital transformation without considering the variable citizen happiness and satisfaction [41][42][43]. However, government institutes and ministries were mainly taken into consideration throughout significant studies [44]-[48].

This research will include the impact of digital transformation citizen's happiness and satisfaction. Digital transformation of countries would be discussed by taking their government sectors into consideration [49]-[53].

2.2- Digital Transformation

Digital transformation is all about adopting new technologies to surplus productivity, creation, value, and social benefit [54]-[58]. Recently held researches hold a piece of great information about Digital Transformation. Many researchers verify that technology is a kind of complex puzzle that organizations must solve to gain a competitive edge in the world of digital transformation [10][59][60][61][62]. The capability to generate innovative and brand-new paths for value creation are yield by culture, processed strategy as well as changes to an organization structure [63].

Now a day, several companies are utilizing and implementing technology in order to attract the target population [64][65]. The reason can be sales, or it can be for the sake of happiness and satisfaction of the citizen [66]-[70]. For example, the financial sectors are now using a tablet when it comes to presentation; during pandemics, many firms introduced applications, mobile apps, and technology to engage people, target audience, citizens, and plan to engage in analytics [11][71][72][73]. The values behind digital transformation are not changed yet. UAE has implemented several practices to develop itself in terms of digital transformation, and on a global scale, UAE is improving constantly and gradually [74]-[80]. The purpose of shifting government services to online and digital platforms is definitive [81]-[86]. Like UAE, other emerging countries in technology and digital transformation have also been ranked like South Korea. The mission and vision to do such a profound change are totally up to the leaders and government bodies as it has also been coming into notice that the government of UAE always embrace such innovations based on technology that helps transform the country digitally [87]-[92]. When it comes to digital transformation, the leader governing bodies making decisions must be aware of potential difficulties and limitations [12][93][94][95].

Since 2019 after the outbreak of COVID-19, the whole time was so much difficult for all world [96][97]. As no one had imagined that there would

be a pandemic that would affect the economy of the whole world, no one was prepared to face such a situation. Vice President and Prime Minister of UAE and Ruler Dubai mentioned that everything will come to normal when this pandemic would end, but that typically would not be old normal. Instead, it would be "New Normal" [98][99][100]. To face such a situation government made and switched bundle of services online, and as a result, UAE was ranked number 17th globally in the index of the e-Participation index and on number 6th in the online service by UN's E-Government Development Index 2018 cover 193 countries.

2.3- Relation between Digital Transformation and Citizen's Happiness and Satisfaction

Like every human being, citizens also have perceptions regarding the actions and implementation of government bodies [101]-[105]. However, if they are given information about a specific service, they would respond and react positively [13][106][107]. It has also been observed that with the implementation of digital transformation governments have been transformed in to digital transformation [108]-[112]. Through digital transformation, agencies have been able to improve the experience of citizens with maintenance of government transparency. It has been observed that when citizens experience is improved it makes them happy [113]-[118].

When it comes to comparison and study of citizen's happiness it is compulsory for the researcher to be focused and to identify the factors involved in citizens' happiness [119]-[124]. The researcher must define a clear a scientific framework for happiness as happiness was different at different time of life [125]-[129]. In childhood a candy can make a child happy, but an adult be made happy so, not to get entangled in philosophical debates this study identifies and measure happiness as needs of science [130][131]. The reason for choosing needs of science is to forget what happiness is but just to focus what people needs and want in order to remain happy [14][132][133].

Our research uses the model of "ABCDE of Needs" in order to identify the areas that results in happiness and then relate it with digital transformation in a way that it can be understood that how digital transformation is affecting the areas of happiness [134]-[138]. The same scale was

also used to measure the happiness of citizens in Dubai Smart City. The Need of Science includes

- Affective and emotional needs: digital transformation when use to convert the negative feeling of citizens to joy, feeling of fun, delight and pleasure it would make the citizens happy [140],
- Cognitive and evaluative needs: digital transformation is being use for the ease of citizens and when it tends to improve the quality of life such as in education domain, health, income and others also makes the citizens happy [141]-[144].
- Basic needs: as it is well understood that satisfaction leads to happiness, so this needs focusses on citizens satisfaction in basic services efficiently and conveniently without frustration [145]-[147].
- Deeper eudaimonic needs: citizens can also be happy when they tend to do those task that are meaningful for them in and also in their life.

A philosophy known as Gross National Happiness guides the government for highking the satisfaction level of citizens and residents [148]-[151]. Apart from delivering services, wise governments do many things. The development towards happiness and competent government require inter and external transformation because just a technology focus would not be enough [15][152][153]. It has also been observed that whenever the digital transformation is used for the ease of citizens it results into happiness the basic example is when NEBRASKA went online for the registration of license [154][155]. The results portrait that increased ratio of agreeable and happy citizens experience, handily addressing NASCIO's concerns around transformation and innovation [16][156][157].

If we consider the scientific study, then happiness is based on happiness's conception, and it can be measured and improved by asking directly from those who experience it as by asking the dos and don'ts would be crystal clear [158][159]. People provide information about their health being experience is so important because it will help to know the social environment and personal factors necessary for their happiness [17][160]-[164]. Previously, the relationship between digital transformation and happiness is constant since the

rise of the industrial revolution. It has also been noticed that whatever advantages are being provided to people they enjoy it first, but quickly they get used to it [165]-[169]. For example, mobile phones, people would like to use the new trending technology. It will make them happy, but they will quickly adopt it [18][170][171]. Technology has changed the nature of the job radically, and the more it will change, the more it will affect citizens as job and business are sources of their well-being, and every citizen is quite conscious about their earnings which affect their style of living [172]-[174].

The need for an e-government platform is mandatory, and it is changing the strategies of government institutes [175]-[178]. Competent government can be a framework where all of the ministries will be working together to save maximum cost. Research finds that the more technology would be used, the more positive impact it will create on the well-being and happiness of the citizen, and it will also change the economy and the measure of development. Researchers like [179]-[181] government have an average impact on the happiness of the citizen, whereas others suggest that with authority and control, the government must have few social factors and doing this would impact the happiness level of the citizen at its maximum level.

3. METHODOLOGY

The part methodology basically targets data collection from target population, research design, analysis and so on.

3.1. Research Design

It is a fundamental, quantitative and primary data-based study as data was being collected through questionnaires as well as interviews. Results from questionnaires analysis and cases were considered to prove the hypothesis.

3.2. Data Gathering

Data is gathered through questionnaires, interviews and cases. Questionnaires were rotated among 108 people, mostly related to the Ministry of Finance, Ministry of Health and Ministry of Defense. Moreover, experts in a particular field were also considered. Short dialogues were conducted in order to take the interview from the finance, defence and health experts. The respective

citizens also had to fill the questionnaire which was the part of the process.

4. ANALYSIS

Data was collected from government institutes through questionnaires and interviews. The sample size for this study was 108. Each

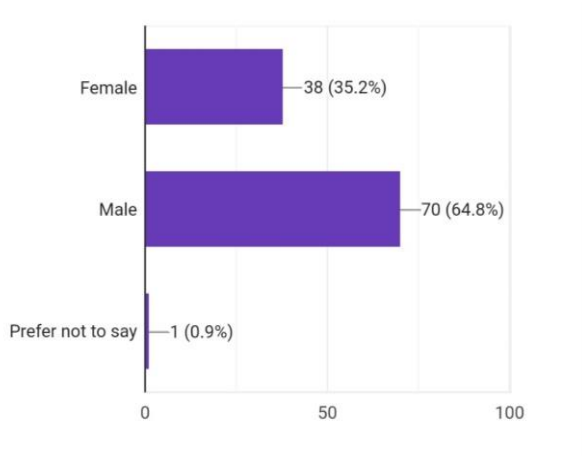
Questionnaire Delivered	Questionnaire Received	Questionnaire Received fully completed
108	108	108

4.1. Questionnaire

Questionnaire was rotated with proper description on it as well as the purpose of study was also written on it. Details about the questionnaire have been mentioned above whereas below are given the responses of questionnaires through which they would be analyzed completely.

4.2. Demographics

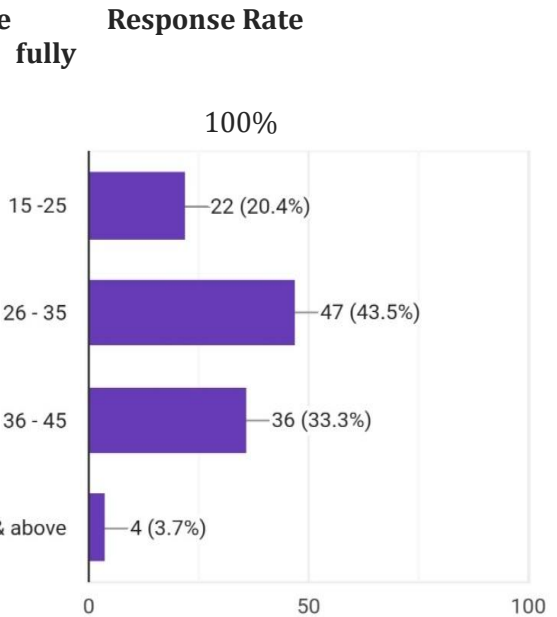
Gender:



It has been observed that number of males who attempted the questionnaire are more as comparable to females

AGE

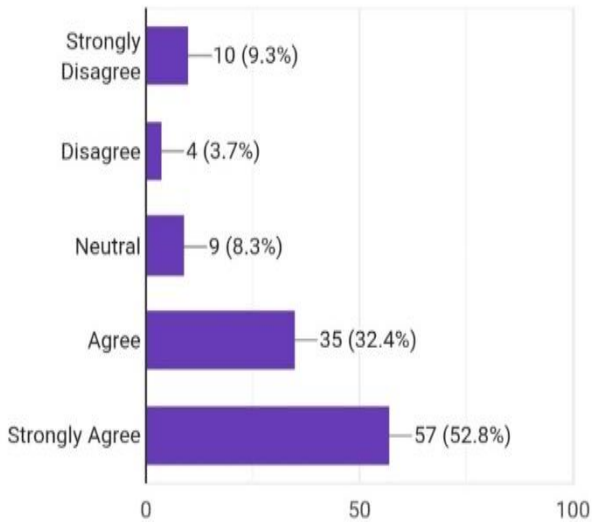
questionnaire was having a total of 10 questions. The questionnaire was based on two parts. The first part of the questionnaire had demographics; the second part was based on Digital Transformation and citizen happiness questions. Data were analyzed by using google forms and surveys



Most of the participants who responded to questionnaire belongs from age group of 26-35. After that the second most responses appeared from the age group of 36-45. Whereas people from age group of 15-25 lies on third number whereas It has been observed that from age group 46 and above less people participated.

Question 1

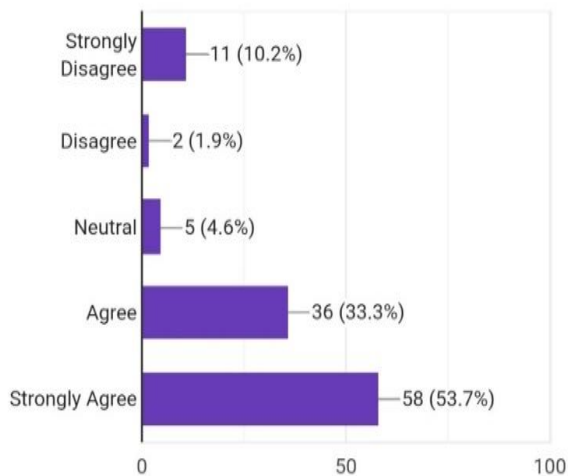
Do citizens want easy access to their relevant work through devices?



When asked if customers want easy access to their relevant work through devices the response was quite positive as more than half of the people strongly agrees with the statement that they want easy access to their work through applications. Whereas it has also been observed and a notable figure of participants disagrees also because the more they can access the work easily the more workplace can also access them.

Question 2

Does digital technology help citizen to stay connected always?

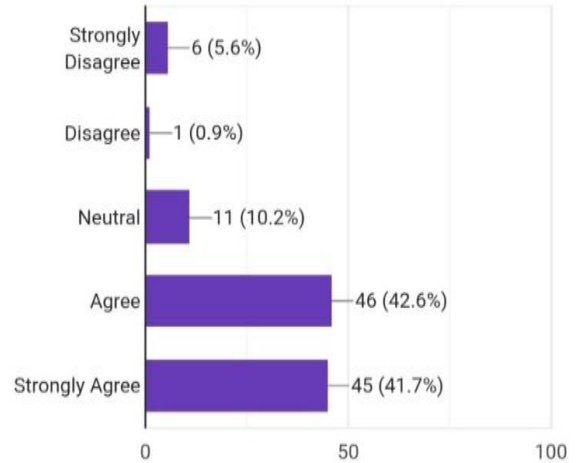


More than half of the respondents strongly agrees that digital technology helps people to stay connected as before it people have to wait many days in order to connect whereas 10% of the people disagrees with the statement. As data was connected from different age group and the age group above 35 prefer to stay close socially which

results in disagreement with these questions.

Question 3

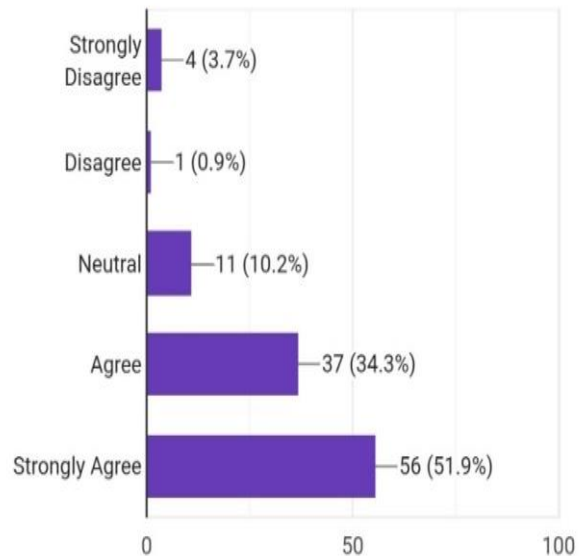
With the help of digital technology data can be easily maintained and this makes citizens happy when their record is maintained in different institutes.



The result agrees the statement that when the record of citizens is maintained, it makes them happy. In the response it can be observed that the ratio of strongly agree and agree is quite same it means more people do agree but there are some who disagrees, and their reason can be that they do not want to share their details with everyone.

Question 4

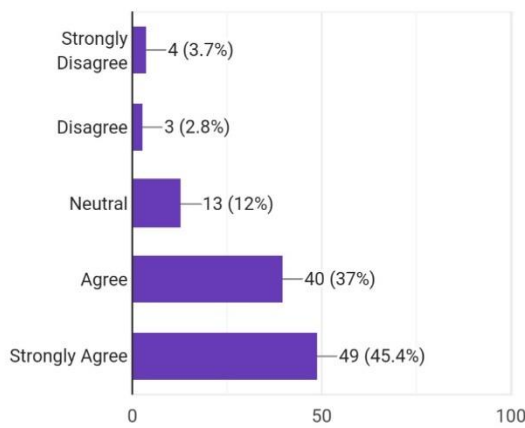
24/7 availability of institutes through digital means has empowered citizen to get what they want at any time.



When it was asked that 24/7 availability empowers citizens in order to fulfil their needs and wants the result shows that more than half of the people strongly agrees with the statement whereas nearly 40% of the people agrees whereas the percentage of disagree is quite less which means response can be considered as positive.

Question 5

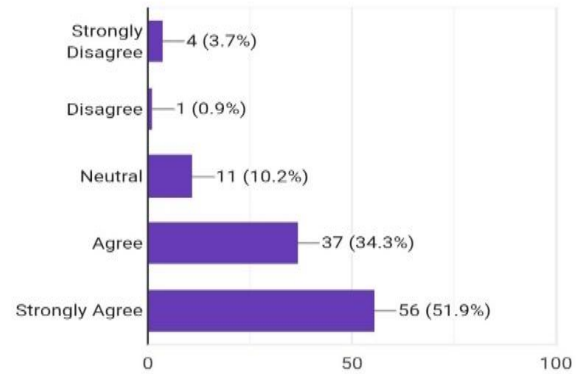
Digital platforms had changed the way of communication. Embracing technology gives organization the opportunity to control and shape their strategy in order to meet customer's satisfaction.



Strategy can be changed after the implementation of technology as technology is evolving all the time, so an organization also needs to evolve the strategies accordingly. With the statement provided to participants most of the participants agrees whereas the participants who disagrees are few.

Question 6

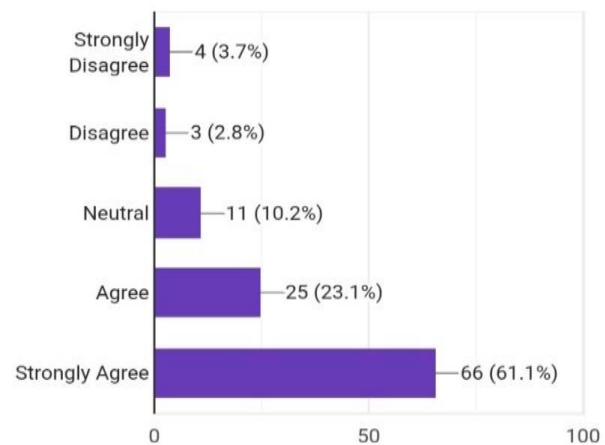
Does feedback portal make citizen, government and institutes more active?



Feedback always helps to improve, and it is also well understood that an organization might not be able to consider all the feedbacks so result of the statement shows that most of the participants strongly agrees and agree with the statement and few don't.

Question 7

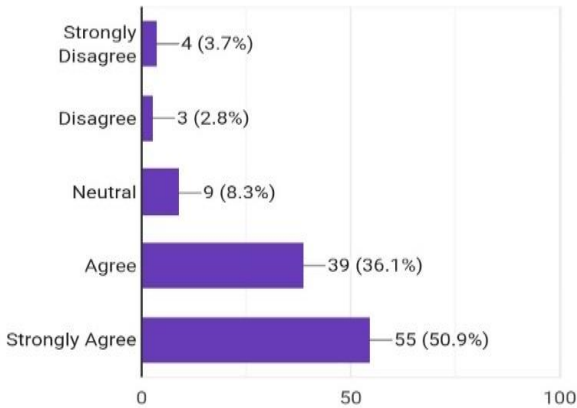
Covid-19 outbreak had made everyone to move towards digitization. citizens are more satisfied and happy while using digital platforms.



About 62% of the respondents strongly agrees that in the current pandemic it is safe, good and feasible to use such digital platforms as they have made the work quite easy whereas only 5 people out of 108 disagrees.

Question 8

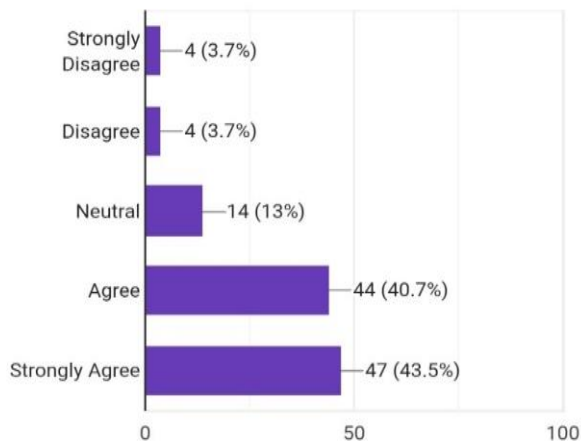
Government by giving certain access to citizen through digital platforms can gain citizens trust and make them happy.



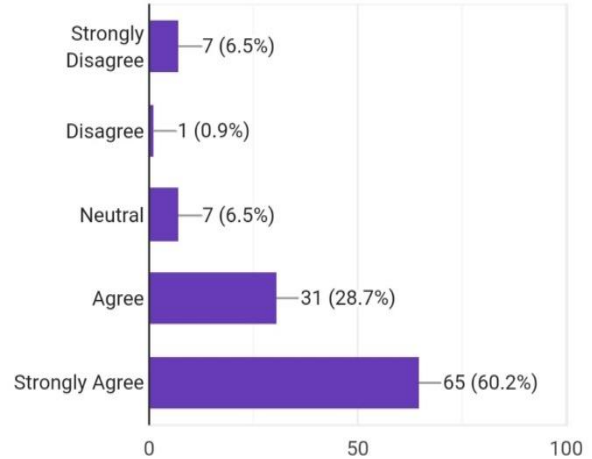
Majority of the participants strongly agrees with the statement that when access is given by the government to citizens it makes them happy. It has been observed citizens feel more safe and comfortable when they have in their mind that they have access to some officials with this statement more than half of the participants agrees.

Question 9

Would citizens choose digital platforms over traditional and old platforms?



There are people who still like to do things as they use to do in the traditional era such people responded neutral or disagree with the statement whereas majority agrees and strongly agrees with the statement.



Question 10

Do you think that effective results, easy access, faster communication and always connected can improve citizens happiness?

60.5% of people which means majority of the people strongly agree that faster communication, easy access and effective results can improve citizen happiness. Whereas half of it agrees with the statement.

After a thorough analysis of questionnaires, it has been clear that there is a significant positive impact of digital transformation on citizens happiness which also results in the rejection of Ho.

4.3. Interviews and Case

Ministry of Finance

The top priority of MOF is to provide services to citizens, private/public sectors and government institutes. The government is taking the initiative related to competent government as it has already been introduced in Dubai with Smart Dubai or Smart City. The government aims to make the citizen happy by providing 24/7 online services. MOF has also introduced an intelligent app through which services are being provided, and others are automated.

As it is quite clear that UAE government has been doing enough efforts so that the economy can be moved to knowledge-based economy. There are bundle of facilities that finance sector is providing to citizens, government and private sectors through online platforms moreover, the list is long each service cannot be mentioned but few are

- E-dirham
- Preparation of budgets
- Email
- Landline and further these are divided into further categories like
- Government revenues
- Federal financial procedures
- Tax certificate and most important is customer care.

Citizens can be happy when their needs would be satisfied, and, in this regard, MOF is satisfying their needs with bundle of applications and services. Moreover, MOF has also introduced a smart service that will let you to start your business with minutes which means in just 15 minutes you can now start your own business. Bayanat which is also a splendid initiative. All of these initiatives are not the result of COVID-19 as our government was previously working on it and the biggest example is blockchain its strategy was launched back in 2018.

Ministry of Health

Ministry of health and prevention has introduced the Innovation Strategy of 2019-2021, which basically tends to work for the betterment of UAE and will also work to make UAE a place of sustainable future in terms of intelligent healthcare. This would be possible after the renovation and transformation of previous services and the development of labs where research can be performed. The Ministry of Health aims to be advanced in technology so that with the help of technology integration into different methods, diseases and epidemics can indeed be prevented.

Digital transformation has made job so easy as compared to the time when they were not having enough access. There are bundle of digital initiatives programs that have impacted the life of citizens in a positive manner.

Program initiatives like

- Shefaa: which provides treatment packages through smart channel and it also have medical record of the patient.
- Smart Robotic Pharmacy: this deals in the field of drug safety and provide service of drug provision.
- Wareed: this system is basically supported by AI which means Artificial Intelligence and it tends to provide relevant medical information to staff and patients with in

recognized platform and further that record can be used in case of need in any health facility.

Ministry of Defence

The Ministry of Defence primary focus is also on technology innovation and digital transformation. The Defence Technology Framework and Defence Innovation Priorities set a roadmap that includes digital transformation and includes the department's further plans. MOD also made it clear that government want a sophisticated relationship with technology.

This technological era also made the ministry of defence to change the policies and strategies as defence is all about to respond in a best possible manner to unwanted or unpredictable situations. The need of technology and digital transformation has been recognized in all over the world. Furthermore, for the wellbeing of citizens smart services are also being provided such as:

- Request for Chemicals trading handling approval.
- Request for importing Hazardous material.
- Request for re-exporting Hazardous material.
- Request for erecting Balloons.
- Approval of inflammable liquefied tanks.
- Request for approving hazardous material warehouse.
- Request for issuing a representative card – New.
- Request for the representative card-Renewal.
- Compensation minute.
- And many more

Such services give edge to the citizens and they feel free and safe to do things and will believe that the government would take care of them.

• Recommendation

This study covers the impact of digital transformation on citizen's happiness in UAE. An overview of the whole scenario has been discussed in this research, but finance, health, and defense ministries were significant concerns. While other researchers can consider other areas and sectors for the purpose of research as it would tend to generate for accurate and precise results.

5. CONCLUSION

Digital transformation and citizen's happiness

were taken into consideration while doing this research, and it has been observed through this research that there is a positive impact of digital transformation on citizen happiness and citizen satisfaction. Through interviews and questionnaires, it also became clear that most citizens are happy with the digital transformation. In the current research digital transformation is taken as independent variable and happiness of citizens is taken as dependent variable. This research elaborates areas of happiness that can be satisfied by the use of digital transformation. The model which was used to identify the areas of happiness was "ABCDE of Needs". Examples from cases are also mentioned in the case through which the impact of digital transformation on happiness was crystal clear.

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