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GENESIS OF THE DIGITAL AGE: IN THE BEGINNING MANKIND CREATED THE INTERNET

Although the short-term effects of the information and communication technologies (ICTs) can be easily foreseen, it is quite difficult to make predictions about its future. Because every technological development triggers the succeeding developments, just like a snowball, rolling down from the top of a mountain. Hence, it is often difficult to imagine what serious technological advances we would see in the far future. One of the well-known examples that can be given is the lack of vision of IBM's president Thomas J. Watson about the future of computers in the 1940s. According to Mr. Watson, no more than five computers would be needed in the world market in the future! Of course, one who lived in years where tons of bulky and dysfunctional computers were produced, could not possibly dreamed of a world of tiny computers in pocket size.

In the 70s, when there were a limited number of TV channels broadcasting on black and white televisions that did not even have a remote control, snail mail and phone booths were sufficient for long-distance communication. The Knight Rider of the 80s, which appeared after the fantastic Jetsons cartoon series shot in the 60s was able to lock the youth in front of TV units at that time. In that legendary action crime drama, there was a handsome, high-tech crime fighter, wearing a wristwatch as a radio to communicate his artificially intelligent, self-aware, and nearly indestructible autonomous car. In this decade, even though it is still not possible to travel in space like Jetsons, drone taxis are now in test stage. Furthermore, some of the lucky fans of the Knight Rider series can even now ride their own autonomous Tesla's with an iWatch on their wrists.

In order to precisely predict the future direction of the ICTs, it is necessary to observe the snowball in slow motion while it is rolling down from the summit. For the last 30 years, developments in the ICTs were mostly target oriented. The aim of the technology developers was not only making life easier but also making it an integral part of human life. While the first computers of the 1940s were replaced by PCs in the 80s, they were replaced by laptops in the 90s. Then laptops were replaced by tablets in the 2000s and ultimately by smartphones in 2010s. Most of the hi-tech gadgets have shrunk in time and entered the pockets and offered us the convenience of being mobilized. Eventually, even children can easily use a tiny microcomputer, called smartphone in present time.

In modern times, we are seriously facing a technological paradox. Do the technological developments make life easier for human beings or vice versa? My MacBook, for instance, is twice thinner, lighter, faster, stronger and pricy than the previous one. Nonetheless, it is impossible to connect it to the Internet or other devices without a third generation USB adapters or wireless networks. Furthermore, since my new MacBook does not have any multimedia module, I cannot access the data I burned on DVDs anymore. CDs, which replaced floppy disks in the past, have become obsolete thanks to flash memories and cloud storage facilities. As a result, when you buy a new computer, then you will need an external DVD module to access the old data old CDs and DVDs. Moreover, there is no plug for network cable that can be used to access the Internet faster and safer in modern thin and light Ultrabook computers. If you want to use such old-fashioned technologies persistently, then you have to buy converting adapters or external modules at extra cost.

Higher mobility with a cable-free life seems more comfortable for many people. However, concerns are raising about forthcoming missions of the ICT developers: What would technology designers introduce us after saving us from cables and increasing our mobility? The answer of this question would be possibly the integration of nano technologies with the human body. Wearable devices are the early examples of such integration. According to widely voiced conspiracy theories, ICT developers will eventually try to create a bionic generation that does not need to carry mobile devices anymore. While this journey has already

started with medical RFID implants inserted somewhere between thumb and forefingers of some voluntary diabetic patients, Google's smart lens project followed it. In recent years, Facebook's Mark Zuckerberg and Tesla's Elon Musk expressed their intentions to implant microchips inside brains to improve brain capabilities! In recent days, 'digital certificate' dreams of Bill Gates to make an invisible tattoo on arms to track existence of vaccinations have been intensively criticized by some activity groups.

Some events in the history of civilizations are considered as the starting point of a brand-new age. The 'New Age' that started with the conquest of Istanbul by the emperor Fatih Sultan Mehmet of Ottoman Empire is one of the best examples such events. From this point of view, it can be said that thanks to the COVID-19 outbreak, which can be expressed as an effective catalyst to accelerate the integration of our lives with the digital world, 2020 will be mentioned in history books as the period when the 'Digital Age' was officially announced. As a matter of fact, people started to be a part of the digital world, thanks to the worldwide spread of the third-generation Internet (3G) technology along with tablets and smartphones in last two decades. Social networks also supported and speeded up the early integration attempts with the digital world. As a result, distance learning, electronic banking and ecommerce become more popular while the interest in mobile games overspread, and new health problems such as technology addiction radically increased.

The number of people who could afford and access the Internet has already reached half of the world population and is now almost constant at this point. The remainder mostly consists of the elderly and young people or those who cannot access the Internet due to geographical or economic difficulties. Hence, the digital divide in economic, geographical and demographic groups is among the most important obstacles to the digitalization of many products and services in this decade.

COVID-19 appears to affect both global economies and health systems, and our entire social life. Millions of individuals who quarantined themselves in their homes for a long time adapted to this process quicker than expectations. During the first wave of the pandemic, our office chairs and school desks were virtually moved to a corner of our homes; we replaced restaurants and bakeries by our kitchens;

we preferred mobile e-commerce applications to stores and shopping malls; and finally cafe chats and home visits were moved to social networks and online meeting applications. While the results of a recent study in the USA point to a significant increase in the use of electronic banking, significant part of this increase is established by the elderly customers, who are considered the most difficult generation to adopt the digital economy. Such phenomenon clearly highlights that even the Generation X is now ready for the digital age thanks to the outbreak.

As a result, one would assert that the COVID-19 outbreak not only increased the interest in social networks, but also contributed to the widespread interest in e-commerce and other key instruments of the digital economy. For instance, as a result of the decreasing interest in cash usage due to concerns about hygiene, there would not be a serious resistance to the transition to digital money. When considered in this context, the 'new normals' that globally introduced in the second phase of the global battle with the pandemic should be considered as a 'strategic vigilance plan', created to prevent future crises on a global scale, and to increase cooperation.

To summarize, the 'new normals' are essentially nothing more than the announcement that the digital age has officially begun all over the world. The new normal in education, for instance, will be establishing a hybrid education system by fully integrating distant learning infrastructure to the existing national educational systems. So that the education systems would be able to work without interruption, if nations face a second wave of pandemic outbreak. Similarly, electronic channels in the service industry and public services will be more prominent so that face-to-face contact with the individuals will be decreased. We will also witness the digitalization of the procurement processes in both retail industry and agriculture will become even more important in order to meet the increasing demand due to the "anxiety economy" that emerged during the pandemic outbreak. The states will need strengthen their digital infrastructures in auditing-related processes in order to prevent black markets. In terms of health services, an important part of treatment and preventive services it will be fully digitalized to speed tracking and treating more patients. Finally, due to the increasing demand in programmers, coding will be included to the

curriculum of all levels of education, including kindergarten.

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Prof. Dr. Mustafa Zihni TUNCA Editor-in-Chief

CHANGES IN THE PROFESSIONAL PROFILE OF AUDITORS IN THE LIGHT OF BLOCKCHAIN TECHNOLOGY

Hayrettin USUL*, Gözde KARABURUN**

- * Prof. Dr., İzmir Kâtip Çelebi University, Faculty of Economics and Administrative Sciences, Business Administration, hayrettin.usul@ikc.edu.tr, https://orcid.org/0000-0002-3930-0866.
- ** Corresponding Author, Ph.D. Candidate, İzmir Kâtip Çelebi University, Social Sciences Institute, gozdekaraburun@gmail.com, https://orcid.org/0000-0002-9443-4146.

ABSTRACT

Blockchain is a shared ledger technology. In other words, blockchain technology is a shared and immutable notebook. This technology is used to record transactions, track assets and build trust. All transactions are stored encrypted by all stakeholders in the blockchain network. Auditing of these transactions is the domain of the auditors. The dynamics of auditing are changing with the developing technology. As a reflection of blockchain technology, professional profiles of auditors are also changing. The purpose of this study is to discuss the change in professional profiles of auditors in the light of blockchain technology.

Keywords: Blockchain Technology, Accounting, Auditing, Auditor.

Jel Codes: M40, M41, M42.

In this study, research was conducted on blockchain technology, audit and auditors. First, a literature review was conducted. Then, information about blockchain technology and blockchain control was given. Finally, the effect of blockchain technology on auditors was discussed and changes in profession profiles are discussed.

1. INTRODUCTION

All transactions performed in the blockchain are recorded by everyone on the network. Anyone on the blockchain network can view actions taken. However, during the transactions performed on the system, the identity of the person doing the transaction is hidden from those who can view the transaction. With this feature, blockchain technology enables to verify transactions without any brokerage house.

Auditing is an accounting branch developed to reach an opinion about the accuracy of accounting documents, data and information. Data is obtained as a result of the operations performed with blockchain technology, too. Along with the developing technology, the dynamics of auditing are changing as well. Auditors performing the auditing profession are affected by this change. In particular, the approach to audit evidence has changed. In this case, auditors face many threats and opportunities. Considering the changing auditor and client's relationship, the effects of blockchain technology on auditor profession become more of an issue.

2. LITERATURE REVIEW

Blockchain technology has been the subject of many articles in the national and international context. Some articles in the field of Social Science are given below in alphabetical order.

In his study, Demirhan (2019) examined blockchain technology as a new approach in tax auditing. As a result of his research, he has reached that the blockchain will be highly effective in tax auditing in the future. Demirhan concluded that blockchain would take an active role in the tax collection and the fight against black economy.

In their study, Doğan & Ertugay (2019) discussed blockchain and applications in the field of accounting. As a result, they stated that the financial data to be generated through blockchain will provide significant benefits to both businesses and other financial report users.

In his study, Şat (2019) examined blockchain's potential impact on public administration. As a result, Şat argued that the organizations should equip themselves with new visions, and they should train public administrators and civil servants who would create public value.

In their study, Şen & Alnıaçık (2019) investigated the effects of blockchain technology on management processes. As a result, the expectations of the business world and the managetment area regarding blockchain technology have been determined.

In their study, Şen & Ergin (2019) investigated the rise of cryptocurrencies, the blockchain network and bitcoin. As a result, they argued that even if there are no cryptocurrencies and bitcoin, blockchain has a wide range of uses.

In her study, Tekin Bilbil (2019) examined local governments and blockchain technology. Tekin Bilbil also proposed a governance design / strategy at the same time. As a result, her study revealed that there is the lack of information regarding blockchain technology in local administrations.

In their study, Uğur, Güler, Yıldırım, & Kurubacak (2018) examined the use of blockchain and strategic decision model for transhumanist learners in open and distance learning environments. As a result, they have demonstrated the importance of the strategical decision model in ensuring sustainability.

In his study, Yıldırım (2018) examined the relationship between blockchain technology and the potential of blockchain technology in literature. As a result, Yıldırım expressed the importance of spreading the potential of blockchain technology to all areas.

3. BLOCKCHAIN TECHNOLOGY AND AUDITING

This section contains information about the definition and audit of the blockchain. It also includes the qualification of audit evidence, which plays an important role in blockchain auditing. Finally, the threats and opportunities of blockchain control are included.

3.1. Definition of Blockchain

Blockchain, which holds the power of changing and reshaping the accounting profession, is a technology that records, processes and stores financial transactions (Liu, Wu, & Xu, 2019, s. A19). Blockchain technology gives management professionals and auditors access to secure information in a real time (Smith, 2018, s. 131). Blockchain technology performs transactions within a work discipline.

The blockchain working principle has five main characteristics. These are request, notification, verification, insertion and distribution. It all starts with the request of a user to add a transaction to the blockchain. This transaction is broadcast to all users via notification. The transactions are verified by users in the verification step. It is then bundled into

blocks. The bundled blocks are added to the blockchain and become permanent. Finally, an updated copy of the blockchain is received by those on the network (Mahbod & Hinton, 2019, s. 23).

Blockchain records are tamper-resistant thanks to the deployed cryptographic mechanisms. These code-protected records are irreversible. The hash of the record contains the digital signature of the user. Therefore, the originator of the recording can be determined (Rozario & Thomas, 2019, s. 24). Blockchain technology has different usage areas.

An encrypted message is created by an individual who wants to transfer funds in the blockchain system. This message contains information about the recipient's network address. The validity of the message posted to the entire network is examined by other members. The message posted in the network compares to the latest balance recorded in the sender's blockchain by other members. Execution of the process depends on the verification of the message. After the message is verified, a new block is added to the end of the blockchain. This block contains the transaction (Liu, Wu, & Xu, 2019, s. A20).

3.2. Auditing the Blockchain

There is uniformity in the blockchain. With uniformity, audit preparation activities and manual data extraction are eliminated (Mahbod & Hinton, 2019, s. 26).

Auditors ensure data reliability by designing and implementing audit tasks. The auditor obtains sufficient and appropriate evidence to determine whether there are material misstatements. (Appelbaum & Nehmer, 2017, s. 6).

Reliable evidence is evidence that can be trusted and verified by the auditor. The audit team that collects and evaluates sufficient audit evidence arrives at an opinion. All the information on which the audit opinion is based by the auditor is evidence of audit. Evidence is obtained from both external and internal sources (Appelbaum & Nehmer, 2017, s. 6).

Confirmations are an inseparable part of traditional auditing. This routine will not be needed for the information stored and examined on the blockchain (Smith, 2018, s. 128). The cleaning and classification of information that is secured and verified according to blockchain technology is automated (Smith, 2018, s. 132). However bugs or embedded codes can compromise the integrity of the data. Auditors want to evaluate the client's procedures to determine this situation. Oracles are a

third-party information source. They should be properly linked (logically) to smart contracts. Auditors should evaluate the physical control of Internet of Things devices. (Sheldon, 2019, s. A21).

In case the initial entry or source of the chain is suspicious, the auditor will need to physically validate the originating event. This physical validate takes place through verification, observation and recalculations-reperformance (Appelbaum & Nehmer, 2017, s. 13). Notable items can be manually investigated by the auditor. In records that require further investigation, a follow-up smart audit procedure can be pre-programmed (Rozario & Thomas, 2019, s. 25).

3.3. Audit Evidence in Auditing Blockchain

Audit evidence is obtained and stored from a variety of sources. Auditors overcome the obligation to combine both financial and non-financial information with blockchain. Audit evidence is taken from the client's blockchain by the auditor. This information is sent to the hash of smart audit procedures. Finally, the predefined audit test is performed by the smart audit procedure (Rozario & Thomas, 2019, s. 31).

The transaction data from Blockchain is highquality audit evidence. Because it is confirmed that the transactions take place once. If the auditor wants to confirm accounts, they only need to get the relevant transaction data from the blockchain. They then perform analytical procedures (Wang & Kogan, 2018, s. 4). If block of transactions is completed and added to the end of the blockchain, it cannot be reversed. Thanks to cryptography and decentralization features, the auditor is provided with a tamper-resistant audit trail. These features help improve the integrity of internal and external data (Rozario & Thomas, 2019, s. 23). With the increase in the number of entities that adopt blockchain, the information to be obtained from the blockchain will become efficient (Mahbod & Hinton, 2019, s. 26).

Schemes that guarantee data privacy are recommended. These schemes, managed by a trusted third-party auditor, have the ability to centralization. The downside of centralization is that it reduces the security of the auditing protocol. Instead, a scheme supporting decentralized auditing is proposed (Fan, Bao, Liu, Vasilakos, & Shi, 2019, s. 7).

Evidence provided by a continuous real-time audit frees the auditor from the observation task. Auditors only need to observe the timestamp of transactions added to the block. They can also observe whether the lengths of blocks increase over time (Appelbaum & Nehmer, 2017, s. 9). Nevertheless, auditors who will develop procedures to obtain audit data directly should consider the risks. At the top of these risks is the risk that the information may be inaccurate due to error or fraud (Mahbod & Hinton, 2019, s. 26).

3.4. Threats and Opportunities in Auditing Blockchain

There are some threats and opportunities in blockchain auditing. A high degree of transparency is achieved as a result of digitization. So, auditors can encounter clients' resistance (Tiberius & Hirth, 2019, s. 5). Control of the blockchain of peer nodes operating on the same cloud can be attempted to be taken control or rewritten by fraudsters. The auditor should consider this added risk (Appelbaum & Nehmer, 2017, s. 11).

Changes in the world of technology happen quickly. With the blockchain technology, customer risks also change. The ability to respond to these changes and risks is considered an opportunity for auditors (Rozario & Thomas, 2019, s. 21). The routines of audits and their close proximity to real time will provide auditors with opportunities. Focusing on risky and complex transactions can be counted from these opportunities (Mahbod & Hinton, 2019, s. 26).

Confirmations, inventory counting, and data analysis are among the audit components. Confirmations before the blockchain were random. Confirmations after blockchain technology have become 100% and real-time. While inventory counting is done manually in the pre-blockchain, it is carried out continuously in the post-blockchain. Finally, data analysis is addressed. While sampling methodology is used in pre-blockchain, continuous and for 100% of information are used in post-blockchain (Smith, 2018, s. 128).

Using blockchain technology in business processes reduces the audit workload. It gives auditors a chance to focus on other operations (Karahan & Tüfekci, 2019, s. 67). Ethereum is an operating system built on a neutral, open access infrastructure, stating that it is not controlled by any company or person (Ethereum, 2020). Ethereum has a consensus feature. Therefore, the auditing process is more secure and transparent than the traditional auditing protocol (Fan, Bao, Liu, Vasilakos, & Shi, 2019, s. 7).

Decentralization, immutability, and accountability are the most important features of blockchain. Due

to the decentralization, fraud on the blockchain is unlikely to occur. Immutability is achieved by the cryptographic mechanism being employed. Accountability is achieved by verifying the source of the transaction performed with the digital signature of the user by the auditor (Rozario & Thomas, 2019, s. 23). Although blockchain technology removes the need for current auditors, it can create new opportunities for the audit profession (Uçma Uysal & Kurt, 2018, s. 478).

4. CHANGES IN THE PROFESSIONAL PROFILE OF AUDITORS

This section discusses the effects of blockchain technology on the audit profession. Changing auditor and customer relationships are also included in this section. Finally, the phenomenon of blockchain controllers as a concept is discussed.

4.1. Effects of Blockchain Technology on Auditing Profession

People who carry out audit work and turn this function into a profession are called auditors. Auditors are examined in three parts in accounting audit application. These are external auditors, internal auditors and public auditors (Usul, 2015, s. 25). Since external auditors and internal auditors are the subject of this study, they will be examined in detail.

If we look at the technological developments, it is seen that the accounting profession is in the middle of a transformation (Smith, 2018, s. 118). Auditors can be more innovative and efficient with blockchain (Mar, 2018, s. 17). Intelligent audit procedures provide auditors with the opportunity to improve audit quality while automating audit tasks (Rozario & Thomas, 2019, s. 26).

The high level of trust in the information obtained from blockchain technology is due to the fact that each transaction performed with this technology becomes as notarized on the level of authenticity. Auditors have an important and fundamental role. Auditors should determine the authenticity of the first transaction with the object under consideration. All subsequent transactions will be considered to be accomplished and reliable (Melnychenko & Hartinger, 2017, s. 33).

Blockchain technology affects the audit profession and therefore the auditors. The effects of blockchain technology on the audit profession can be examined from the perspective of internal auditors and external auditors.

4.2. Internal Auditors

The focus of traditional accounting information systems is to increase security. This security covers the collection and reporting of financial information. The problem of not obtaining information on time is frequently mentioned by internal auditors, or in other words, information is not available on time. A large amount of energy is spent by internal accounting to verify and clear the data (Smith, 2018, s. 121).

New risks and opportunities brought by blockchain technologies are the main points that internal auditors should focus on. Blockchain technology sets business objectives. As with any new technology, internal auditors should evaluate internal and external risks towards these business objectives. Internal auditors should examine whether appropriate measures are taken, such as timelines and staff, to reduce their clients' risks. Blockchain technology has its own security measures. However, internal auditors should test the system. Millions of transactions are written simultaneously in the blockchain. In the meantime, fast and timely acquisition of data should be handled by internal auditors. Availability risks should not be ignored since the design stage. The security of authorizations granted to users in terms of confidentiality risks should be tested (Mar, 2018, s. 17).

Internal auditors are expected to be open to blockchain technology. They must understand the opportunities and threats that this new technology will bring. Auditors should be prepared for future destructive changes (Karahan & Tüfekci, 2019, s. 70). Internal audit professionals will want to take advantage of new methods and tools. Because they will need to verify the structure and viability of blockchain networks. They will also need to assess the appropriateness and effectiveness of risk mitigation efforts associated with blockchain transactions (Kloch & Little, 2019, s. 5).

4.3. External Auditors

The trusted third-party auditor is empowered by the public auditing authorizes to audit external data (Fan, Bao, Liu, Vasilakos, & Shi, 2019, s. 1). The auditors act independently in the client's blockchain. They can access all the internal and external blockchain information that belongs to the client. The auditor is a node on the client's blockchain. In this way, they can extract information about the audit and execute smart audit

procedures autonomously (Rozario & Thomas, 2019, s. 29). The possibilities of the external audit blockchain can be listed as follows: improving the quality of the audit and minimizing the difference in expectations among stakeholders (Rozario & Thomas, 2019, s. 21).

The auditing protocol is another important issue in the audit process of blockchain technologies. Decentralized auditing protocol becomes more reasonable due to the difficulty of finding an honest organization (Fan, Bao, Liu, Vasilakos, & Shi, 2019, s. 2).

External auditors face problems with data cleanliness and availability. It is one of the problems facing external auditors to not present the information in a convenient timeframe for the annual audit process. Lack of audit efficiency occurs as a result of all these problems. At the same time, lack of audit efficiency results from lag and lack of availability (Smith, 2018, s. 122).

4.4. Changing Auditor and Client Relations

Regardless of whether they pay for the audit service, shareholders, lenders, financial analysts and other stakeholders can be regarded as auditors' actual clients (Tiberius & Hirth, 2019, s. 4).

Evolving blockchain technologies create an ecosystem. Proactive audits are advantageous in this ecosystem. Because the auditor has the ability to view and extract reliable information from the client's blockchain (Rozario & Thomas, 2019, s. 27).

Block chain is an evolving technology. There is a balance between a proven and mature technology solution and early blockchain adopter. In other words, blockchain is not the solution for every scenario. This situation should be reminded to the clients by the auditors (Sheldon, 2019, s. A27).

The gap between information provided by auditors to investors and users of financial statements and the information they need needs to be explored (Rozario & Thomas, 2019, s. 23). Against the expectation gap, auditors should apply rigor when evaluating executives' statements about future risks (Tiberius & Hirth, 2019, s. 4).

4.5. New Type of Auditors: Blockchain Auditors Concept (The Future of Auditors: Blockchain Auditors)

Auditors affect the systems of the audited institutions. As the needs of the business world change rapidly, auditors will have to be aware of and adopt blockchain technology (Mahbod &

Hinton, 2019, s. 27). With the blockchain technology, the profile of the auditors will change. The potential effects of blockchain on the profession will be realized in two ways: forward looking and become more IT oriented (Brender, Gauthier, Morin, & Salihi, 2019, s. 35).

It will be possible for auditors to focus more on issues that require judgment through digitalization (Tiberius & Hirth, 2019, s. 9). Audit process and auditors will change depending on the developments in blockchain technology. The data is embedded in the blockchain. Auditors will have the ability to export this data. They will also be able to understand this exported data. With the blockchain technology, the need for auditors in confirmation and verification will decrease. This will make it easier for auditors to focus on high-level duties (Smith, 2018, s. 134).

Blockchain technology has brought transparency to the audit profession with an immutable ledger and real-time audit potential (Sheldon, 2019, s. A15). The adequacy of cryptography arrangements used to hide the database on the network has gained importance in the control of blockchain technology (Mar, 2018, s. 18). Auditors must be competent to supervise technological developments.

Although the data in the blockchain is protected from tamper-proof, it is vulnerable to risks while outside the blockchain. Auditors and clients should work together to transfer data out of the blockchain. It should determine together that the data transfer will be realized in the most controlled and most convenient way (Sheldon, 2019, s. A20).

According to the research from Germany, the auditors predict that the annual audit will progress towards a continuous audit approach. According to experts, new technology will not replace auditors. They believe that the new technology will provide them with more relief and support (Tiberius & Hirth, 2019, s. 1).

Auditors will test the controls on the evidence. They will perform these tests to determine their authenticity and reliability (European Court of Auditors, 2020, s. 47). Even if the audit process becomes more continuous, auditors will need to apply professional judgment when examining other judgments made by management. Auditors will need to evaluate and test internal controls in automated areas (CPA & AICPA, 2017, s. 11). Some tests and tasks do not require specific technical skills. These will disappear in favor of analysis that requires expertise and experience

(Brender & Gauthier, Impacts of blockchain on the auditing profession, 2018, s. 30).

When the blockchain is applied, the auditor will have more time to focus on high-level problems (ICAEW, 2018, s. 6). Auditors will be able to discover and visualize deviations that deserve closer scrutiny (European Court of Auditors, 2020, s. 69). The focus of the auditors will be to validity the digital representation of physical assets and codification of contracts in conjunction with accounting standards (EY, 2017, s. 4).

With the widespread use of blockchain, auditors should provide more complex assurance services. They will need to make progress to support future digital transformations (Psaila, 2017, s. 3). With the use of blockchain, auditors who can access their clients' data in real time will analyze the data. In this way, the level of assurance and the quality of the audit will increase (Brender & Gauthier, Impacts of blockchain on the auditing profession, 2018, s. 30). The auditor who receives the data from the blockchain should evaluate whether the data is reliable. At the same time, auditors should consider audit procedures on management's estimates. They will need to perform audit procedures on management's estimates (CPA & AICPA, 2017, s. 10). In addition, against the risk of fraud, auditors will need to determine whether internal controls operate effectively (Psaila, 2017, s. 3). According to the findings in the report of the European Court of Auditors, auditors will need to be more adaptable to change in future (European Court of Auditors, 2020, s. 24).

According to the study conducted by Brender, Gauthier, Morin, & Salihi, auditors think that the audit activity will change in the med-term. They predicted that today's financial auditors will replace auditors with specific IT skills such as programming. Some even mentioned IT engineer auditors while others mentioned blockchain auditors whose function will be to certify blockchain (Brender, Gauthier, Morin, & Salihi, 2019, s. 15).

When adopting blockchain technology, auditors will be able to use their professional judgment with more analytical methods. The levels of independence and professional judiciary will become even more important (Jackson, 2018, s. 34). Auditors will apply to blockchain technology to test the whole population of transactions within the period under observation. Thus, sample-based substantive test days are expected to be challenged (Psaila, 2017, s. 1). Auditors can develop software

using the blockchain. In this way, more than one organization can be continuously audited (Mahbod & Hinton, 2019, s. 26).

5. CONCLUSION

Blockchain is seen as an important part of a huge wave of digital revolution. This wave of digital revolution also affects the audit process and auditors. Considering the effects of blockchain technology on auditing and auditors, the phenomenon of change is outstanding. Based on this change, changing professional profiles of auditors are discussed in the light of blockchain technology.

As a result of the researches, it can be interpreted that the audit profession has changed, especially in the stage of collecting evidence and performing the audit. Thanks to blockchain, every transaction is recorded by everyone on the blockchain network and this data cannot be changed. This is also important for audit evidence. Auditors acting independently on the client's blockchain can access client's internal and external blockchain information. Auditors who obtain the evidence take this into account when evaluating the audit evidence. According to the audit evidence obtained in traditional ways, the data in blockchain is more reliable and transparent. However, although they are shared with everyone on the blockchain network, clients may not be willing to share this data with auditors.

While performing the audit and in the relations with the clients, the auditors encounter differences compared to the traditional system. With the developing and changing technology, the professional profiles of the auditors are also changing. This may create a new competence area and title opportunity for the auditors. With this approach, auditors can be called blockchain auditors. As a result, these auditors, who will have an interdisciplinary understanding, are expected to have competence in both auditing and technology.

REFERENCES

1. APPELBAUM, D. & NEHMER, R. (2017). "Designing and Auditing Accounting Systems Based on Blockchain and Distributed Ledger Principles", Feliciano School of Business, pp. 1-19.

- 2. BRENDER, N. & GAUTHIER, M. (2018). "Impacts of Blockchain on The Auditing Profession", ISACA JOURNAL, 27-32.
- 3. BRENDER, N., GAUTHIER, M., MORIN, J. & SALIHI, A. (2019). "The Potential Impact of Blockchain Technology on Audit Practice", Journal of Strategic Innovation and Sustainability, pp. 35-59.
- 4. CPA & AICPA (2017). "Blockchain Technology and Its Potential Impact on The Audit and Assurance Profession", Deloitte Development.
- 5. DEMIRHAN, H. (2019). "Vergi Denetiminde Yeni Bir Yaklaşim Olarak Blok Zinciri Teknolojisi", Bingöl Üniversitesi Sosyal Bilimler Enstitüsü Dergisi (BUSBED), pp. 857-875.
- 6. DOĞAN, M. & ERTUGAY, E. (2019). "Blokzinciri ve Muhasebe Alanındaki Uygulamaları", Üçüncü Sektör Sosyal Ekonomi Dergisi, pp. 1654-1670.
- 7. ETHEREUM (2020, Mayıs 20). "Ethereum nedir?", Retrieved from Ethereum Web sitesi: https://ethereum.org/tr/what-is-ethereum/.
- 8. EUROPEAN COURT OF AUDITORS (2020). "BIG DATA and Digital Audit", European Union.
- 9. EY (2017). "Blockchain: How This Technology Could Impact The CFO", Ernst & Young .
- 10. FAN, K., BAO, Z., LIU, M., VASILAKOS, A. & SHI, W. (2019). "Dredas: Decentralized, Reliable and Efficient Remote Outsourced Data Auditing Scheme With Blockchain Smart Contract For Industrial IoT", Future Generation Computer Systems, pp. 1-10.
- 11. ICAEW (2018). "Blockchain and The Future of Accountancy", Institute of Chartered Accountants in England and Wales.
- 12. JACKSON, B. (2018). "Understanding The Implication of Blockchain Technology on The Audit Profession", Retrieved from University of Central Florida's Showcase of Text, Archives, Research & Scholarship: https://stars.library.ucf.edu/cgi/viewcontent.cgi?article=1441&context=honorstheses.
- 13. KARAHAN, Ç. & TÜFEKCI, A. (2019). "Blokzincir Teknolojisinin Iç Denetim Faaliyetlerine Etkileri: Fırsatlar ve Tehditler", Denetişim, pp. 55-72.
- 14. KLOCH, R. & LITTLE, S. (2019). "Blockchain and Internal Audit", Internal Audit Foundation.

- 15. LIU, M., WU, K. & XU, J. (2019). "How Will Blockchain Technology Impact Auditing and Accounting: Permissionless versus Permissioned Blockchain", Current Issues in Auditing, pp. A19–A29.
- 16. MAHBOD, R. & HINTON, D. (2019). "Blockchain: The Future of The Auditing and Assurance Profession", Armed Forces Comptroller, 23-27.
- 17. MAR, S. (2018). "Auditing Blockchain", IT Audit, 17-19.
- 18. MELNYCHENKO, O. & HARTINGER, R. (2017). "Role of Blockchain Technology In Accounting and Auditing", European Cooperation, pp. 27-34.
- 19. PSAILA, S. (2017). "Blockchain: A Game Changer For Audit Processes", Deloitte Malta Article, 1-4.
- 20. ROZARIO, A. & THOMAS, C. (2019). "Reengineering The Audit With Blockchain and Smart Contracts", Journal of Emerging Technologies in Accounting, pp. 21-35.
- 21. SHELDON, M. (2019). "A Primer for Information Technology General Control Considerations on a Private and Permissioned Blockchain Audit", Current Issues in Auditing, pp. A15-A29.
- 22. SMITH, S. (2018). "Blockchain Augmented Audit–Benefits and Challenges For Accounting Professionals", The Journal of Theoretical Accounting Research, pp. 117-137.
- 23. ŞAT, N. (2019). "Blokzincir (Blockchain)'in Kamu Idaresine Olası Etkileri Üzerine", Amme Idaresi Dergisi, pp. 117-147.
- 24. ŞEN, E. & ALNIAÇIK, B. (2019). "Blokzincir Teknolojisinin Yönetim Süreçlerine Olası Etkileri Üzerine Inceleme", Akademik Sosyal Araştırmalar Dergisi, pp. 660-673.
- 25. ŞEN, E. & ERGIN, B. (2019). "The Rise of Cryptocurrencies, Blockchain Network and Where Bitcoin Stands in Today's World", Uluslararası Sosyal Araştırmalar Dergisi, pp. 1592-1603.
- 26. TEKIN BILBIL, E. (2019). "Yerel Yönetimler ve Blokzincir Teknolojisi: Bir Yönetişim Tasarısı/Stratejisi Önerisi", Kent Akademisi, pp. 475-487.
- 27. TIBERIUS, V. & HIRTH, S. (2019). "Impacts of Digitization on Auditing: A Delphi Study for

- Germany", Journal of International Accounting, Auditing and Taxation, pp. 1-14.
- 28. UÇMA UYSAL, T. & KURT, G. (2018). "Muhasebede ve Denetimde Blok Zinciri Teknolojisi", Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, pp. 467-481.
- 29. UĞUR, S., GÜLER, E., YILDIRIM, H. & KURUBACAK, G. (2018). "Transhümanist Çağda Mega Açık Üniversitelerin Yeniden Yapılandırılabilmesi Için Stratejik Karar Modeli İle Bir Blokzincir Uygulamasının Geliştirilmesi", Açıköğretim Uygulamaları ve Araştırmaları Dergisi, pp. 5-11.
- 30. USUL, H. (2015). TMS ve TFRS Uygulamalı Türkiye Denetim Standartlarına Göre Bağımsız Denetim, Detay Yayıncılık, Ankara.
- 31. WANG, Y. & KOGAN, A. (2018). "Designing Confidentiality-Preserving Blockchain-based Transaction Processing Systems", International Journal of Accounting Information Systems, pp. 1-18.
- 32. YILDIRIM, H. (2018). "Açık ve Uzaktan Öğrenmede Blokzincir Teknolojisinin Kullanımı", Açıköğretim Uygulamaları ve Araştırmaları Dergisi, pp. 142-153.

A COMPARATIVE STUDY ON THE USE OF FACEBOOK IN PUBLIC RELATIONS ACTIVITIES IN HIGHER EDUCATION INSTITUTIONS¹

İsa İPÇİOĞLU*, Ayşe AKYÜZ**

- * Prof. Dr., Bilecik Şeyh Edebali University, Faculty of Economics and Administrative Sciences, Business Administration, isa.ipcioglu@bilecik.edu.tr, https://orcid.org/0000-0002-6912-3290.
- ** Corresponding Author, M.B.A., Bilecik Şeyh Edebali University, ayse.kirca@bilecik.edu.tr, https://orcid.org/0000-0003-3924-9623.

ABSTRACT

In this study which is based on how Facebook is used by the universities in social media, the appearance of Facebook accounts of universities were tried to be described. Another aim of the study is to analyse which universities use Facebook more actively, what are the shares, and the distribution of the shares regarding the weekdays and weekends using the content analysis method. The population of the study consists of the verified Facebook accounts of 185 universities in Turkey in 2017 while the sample of the study consists of 10 the state university ranked in URAP TR 2016-2017 and 10 the private universities in URAP TR 2016-2017. Facebook accounts of the two groups were analysed using Boomsocial computation and analysis software. As a result of the research, it is possible to say that the universities do not follow a common social media policy as the state and the private university group, that each university's target group is unique, that the expectations of the target group are different, and that they respond differently to different criteria.

Keywords: Public Relations, University, Facebook.

Jel Codes: 123, L82, L86.

1. INTRODUCTION

The concept of public relations has been around since ancient times when people started to live together. It has been used for various purposes since public relations and has used many tools to achieve its goals. Traditional public relations tools come first among these tools. With the development of technology, the Internet has emerged and all countries in the world have become part of an Internet-based virtual world. The development of the Internet and the transition from Web 1.0 to Web 2.0 led to the emergence of social media. Eliminating the concepts of time and space, enabling users to express themselves as they wish, and helping people socialize have caused the social media to be used intensely and intensely used in the world in a short time.

Public relations activities have not been insensitive to this development and have included social media as a means to achieve their goals. It has become indispensable in social media universities used in public relations activities of almost all institutions. The main purpose of this research is to reveal to what extent the universities have benefited from the

official Facebook accounts they have established for public relations purposes and to compare the differences between the state universities and the private universities and the attitudes of the state and the private university groups on social media. Hence, in this study, which is based on how Facebook is used by the universities in social media, the appearance of official Facebook accounts of universities were examined. Content analysis method has been used to analyse the official use of Facebook. In the first section traditional and digital public relations activities are compared. In the following sections, public relations activites of universities and use of social media has been described. Then the methodology and the analyses are given in the subsequent sections.

2. FROM TRADITIONAL PUBLIC RELATIONS TO INTERNET-BASED PUBLIC RELATIONS

Public relations is a management function that is carried out with the aim of influencing opinions and actions between an institution and its target audiences, which have an important role in the success or failure of the institution, to establish and

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maintain mutual benefit and communication based relationships (Cutlip et al., 1994:6). IPRA (International Public Relations Association) created a new definition of PR fit for the recent times. According to the definition of IPRA (IPRA, 2020), Public relations is a decision-making management practice tasked with building relationships and interests between organisations and their publics based on the delivery of information through trusted and ethical communication methods. With the introduction of the Internet, this organized

management task includes the use of all digital online and offline tools such as computers, mobile phones, photo and video cameras.

The rapidly increasing use of the Internet has caused institutions to shift from traditional public relations tools to Internet-based public relations tools. In Table 1, new media relations, which are the products of developing and changing technology, and traditional media relations are examined (Onat, 2014:10).

Table 1. Traditional Media Relations and New Media Relations

Media Relations	Traditional Media Relations	New Media Relations
Tools	Press Release	Online Press Release, Press
		Rooms
	Video Cassette	Links on video sharing sites
	Photos, Translucent	Carrier memory, cd, links given
		on photo sharing sites
	Press kit	Press kit, online press kit
		Online press kit
	Press kit gifts, coupons	Gifts, online coupons, online
		gifts
Events	Press conferences, press	Events, product launches, few
	cocktails, press tours, press	scheduled professional,
	trips	thematic events, excursions,
		visits
Contact People	News directors, editorial	Traditional relationships,
	directors, relevant	contacts on news sites, related
	correspondents	bloggers, managers of online
		communities, online opinion
		leaders
Communication Channels	Shared Corporate website,	Interactive website, corporate
Where Controlled Content is	corporate newsletter corporate,	blogs, social networks, profile
Shared	advertising, special programs	pages, groups, accounts
Communication Channels in	Newspaper, magazine,	Traditional communication
which Uncontrollable Content	television, radio	channels, news sites, social
is Shared		networks, blogs, video, photo,
		audio sharing sites

Source: (Onat; 2014:10)

As can be seen from Table 1, it is possible to say that almost all tools are adapted to the internet environment by examining the traditional media relations and the tools of new media relations. Since there are not significant differences in terms of activities, it is possible to say that more people are addressed on the basis of the people contacted. When the communication channels sharing the controllable content are examined, it is observed that the target audience in the traditional public relations is active in the passive new media relations. When it is analyzed in the communication channels where uncontrollable content is shared, it

is seen that today there are social networks, blogs, video, photo and audio sharing sites and applications in addition to the elements in traditional media relations. With the shift of the majority of users from traditional media to digital media, digitalization has recently been observed in public relations activities and this is considered to be very natural given the goals of public relations.

3. PUBLIC RELATIONS IN UNIVERSITIES

In the Turkish Higher Education Law (No. 2547) (1981), "University is defined as a higher education institution consisting of faculties, institutes,

colleges and similar institutions and units that provide scientific education, scientific research, publication and consultancy with high level of scientific autonomy and public institutionalism". The universities existing in Turkey operate as public entities according to the "Higher Education Law" and the Higher Education Law regulates the establishment and functioning of the universities. Higher education institutions operating in Turkey and higher institutions related to higher education have to adhere to the rules in various articles of the current constitution.

As with most institutions and businesses, universities also have a public relations unit. The purpose of public relations operating in universities is to strive to be a respected university, to attract the attention of the target audience and to establish a relationship with the public, to develop and maintain these relations. In addition, ensuring the establishment of a good environment between the university and other institutions, and providing goodwill, trust and support among the organization and the people it serves are the main objectives of public relations (Çağlar, 2006: 21).

The developments with advanced technology and changes in higher education in the world and Turkey has made competition differently. Nowadays, universities are willing to involve the best students, regardless of whether they are the private or the state universities, to train the best faculty members and to progress in scientific production (Güven, 2014: 62). Universities carry out a number of public relations activities to achieve their goals. These public relations activities allow the name of the university to be mentioned both inside and outside the institution (Yılmaz, 2015: 34). Universities need to have a professional public relations team to successfully fulfill these requests and create a good image in and out of the institution.

Universities' internal public relations environment; students, academic and administrative staff, while outside public relations environment; media organs, educational institutions at the same or different levels, graduates, student families, surrounding institutions and businesses, the region and the local community where the higher education institution

operates, and public administrators managing the public. The universities should be in close contact with their internal and external environments, and should conduct public relations work that will ensure their dignity and positively affect their image. In order to do this, considering the structure and culture level of the "target group"; public relations tools should be used. The tools that provide this best are also known as "mass media". The media, which can be used by universities, are the university's own media organ, magazines, newspapers or bulletins, annual albums, meetings, ceremonies, contests, concerts, screenings, posters, brochures, etc. Attracting and supporting the people living in the region or region where universities operate, is effective in public conferences, seminars, exhibitions, folklore and dance performances, panels, symposiums, recitals, concerts and various scientific activities (Tikveş, 2005: 85,86,87).

Considering the young and dynamic structure of the universities, the most effective mass media is thought to be social media due to the internet. The fact that young people follow the technology closely and keep up with technology quickly reveals the necessity to keep up with this change in their universities. who want to establish close relationships with their target audience. The fact that young people are tight followers of the Internet and social media channels compared to traditional public relations tools, and that the internet is faster than the traditional public relations tools, reaches more individuals, is independent of time and place, is less costly, more interesting and popular. it provides a basis for them to benefit more. The public relations units of universities have started to exist in social media and operate in almost all social media platforms by keeping up with this technology. Thus, opening up corporate social media accounts and keeping track of these opened accounts, actively making their presence felt, keeping these accounts up to date and making them interesting are among the duties of public relations units. The reason for this is the desire to reach the audience they want to attract.

4. SOCIAL MEDIA MEASUREMENT AND ANALYSIS METHODS

In last two decades, being in social media is inevitable for institutions. It is very important for institutions to use social media effectively. In order for organizations to use social media effectively, they should clearly determine the reasons for their existence in social media and accordingly, they should make long-term plans. They also need to measure and analyze social media platforms to see how successful those plans are, or if they are unsuccessful, to learn the reasons and make a new plan accordingly (Barutçu and Tomaş, 2013: 20).

While it is possible for institutions that make social media analysis to learn which social media platforms would provide more effective results, it is possible to learn how the users behave differently on different platforms to develop different strategies. In this way, the strategies suitable for their wishes can be followed by displaying behaviors according to the expectations of the target audience. In addition, institutions that conduct social media analysis can learn the thoughts of their followers about the institution and determine how much their posts are liked or disliked by the target audience, and how much interest they attract. Various tools can be used for the mentioned social measurement and analysis Institutions that cannot receive professional support due to their limited budgets can carry out social media measurement and analysis using the freely available online tools, listed below (Kırcova and Enginkaya, 2015; 161). Some of the social media analysis programs that institutions can use within their own means at no cost or by paying a small amount of fees are as follows;

4.1. Boomsocial

Boomsocial is a social media analysis system that allows brands to track, compare and report their presence on social media. Using the Boomsonar infrastructure, Boomsocial was launched in February 2013. With Boomsocial, institutions can analyze their situation on social media and compare them with their competitors. Boomsocial is a free service (Boomsocial, 2020).

With Boomsocial, which enables organizations to measure their performance on social media and the return of their shares, organizations have the opportunity to compare their performances in social networks with seven competitors. The website provides benchmark information such as the number of followers, periodic changes in the page views, etc. with detailed graphics and tables (Özdemir, 2013).

4.2. Google Analytics

Google Analytics is a product of Google. It is a free service that measures traffic to websites. Google Analytics offers organizations the ability to identify which social media platforms are most frequently referred to by website visitors. As a result of this opportunity, institutions can decide which social media platforms they should focus on. At the same time, businesses can learn more about visitors from social platforms such as Twitter, Facebook, and Instagram (Barutçu ve Tomas, 2013: 18).

4.3. Socialbakers

It is a platform where different social media channels can be monitored and reported from a single point. It works with the membership system and offers detailed information to anyone who wants to get information about their social media (Kırcova ve Enginkaya, 2015; 161).

In addition to these social media measurement and analysis programs, there are many applications such as Sensekit, Monitera, Somera, Radian6, Brand24, Mention, Trackur, UberVU, Talkwalker, Rival IQ, TrendSpottr, Buzzsumo, NOD3x, Brandwatch, Sysomos, Cision, Attensity, Talkwalker Alerts, Bottlenose, Digimind, Meltwater, Crimson Hexagon, Synthesio, Viralheat, TweetReach etc. (Dijital Ajanslar, 2020).

The presence of social media has also revealed social media measurement and analysis. With the social media measurement tools given above, it is revealed how important the measurement and analysis of social media is. It is possible to make a difference in social media with social media tracking tools that enable brands or institutions to make the most efficient and simple use and strengthen their online presence.

5. METHODOLOGY

Social media usage benefits all universities to interactively share up-to-date information to students and other stakeholders and get instant feedback from them. These benefits can be collected under four groups:

- 1) Providing effective communication with graduates and their families,
- 2) Strengthening the institutional identity of the university, increasing the preferred one, creating a good image, building trust,
- 3) Providing academic and pedagogical development, and
- 4) Providing an environment to improve freedom of expression and creating a polyphonic environment in universities (Bingöl and Tahtalıoğlu, 2017).

The main purpose of this research is to reveal to what extent the universities have benefited from the official Facebook accounts they have established for public relations purposes and to compare the differences between the state universities and the private universities and the attitudes of the state and the private university groups on social media. It is aimed to compare which functions their Facebook accounts perform, what do they post in accordance with the purpose of public relations and how it has a functional structure.

The limitations of the research, are as follows:

- While 185 universities of the Higher Education Council operating in 2017 form the universe of research (URAP, 2017), top 10 the state universities and top 10 the private universities for 2016-2017 academic year are the sample of the research.
- -Research was limited to the Facebook posts of the universities in March, April and May 2017 periods only.

The sample of the top 10 universities that form the ranking of URAP TR 2016-2017 the state universities (URAP, 2017) and the top 10 universities that form the ranking of URAP TR 2016-2017 the private universities (URAP, 2017) are seen in Table 2, and Table 3, respectively.

Table 2. URAP TR 2016-2017 Top 10 State Universities

THE STATE UNIVERSITIES	ESTABLISHED IN	NUMBER OF STUDENTS	TOTAL SCORE
Middle East Technical University	1956	20,468	756.67
Hacettepe University	1957/1967	36,901	720.55
Istanbul University	1453/1933	222,155	702.55
Ankara University	1946		688.08
Gebze Technical University	1992	2,504	46.674
Gazi University	1926	53,305	662.79
Istanbul Technical University	1773/1944	23,474	656.67
Ege University	1955	53,617	655.38
Atatürk University	1954	263,337	617.40
Erciyes University	1978	53,823	605.76

Table 3. URAP TR 2016-2017 Top 10 Private Universities

THE PRIVATE UNIVERSITIES	ESTABLISHED IN	NUMBER OF STUDENTS	TOTAL SCORE
İhsan Doğramacı Bilkent University	1984	11,086	671.53
Koç University	1992	6,428	642.79
Sabancı University	1994	3,719	637.66
Başkent Üniversitesi	1994	12,410	535.62
Atılım University	1996	7,881	469.60
Yeditepe University	1996	19,521	458.12
Çankaya University	1997	7,181	454.96
TOBB Ekonomi ve Teknoloji University	2003	5,304	427.29
Acıbadem University	2007	3,434	421.31
Doğuş University	1997	5,930	401.58

6. FINDINGS

Although Gebze Technical University is among the 10 the state universities, since there is no data about the university in the Boomsocial system, only the total number of messages could be included in the Table 4 and Table 5. As seen in Table 4, a total of 1,337 messages were posted by the state universities, in total 160,835 likes and 3,300 comments were provided by the followers, and 22,031 fans shared their posts in the profile of the websites. In is also noteworthy that the periodic change in the number of followers was negative on four the state universities Facebook pages.

Interaction ratio is the highest for Ege University and the lowest for Ankara University. The highest positive change in the number of followers happens for Middle East Technical University, ie. 1490 more followers at the end of the observation period. The highest negative change in the number of followers, however, happens for Gazi University, ie. 1456 followers stopped subscription for the official Facebook account of the university at the end of the research period. Interestingly, while Ankara University posts only 73 messages, which is the lowest number of sharing, number of the followers of the university increases by 255. Hence, it is possible to highlight that the number of posts is not the major reason to change the number of followers. Indeed, interactions with the followers provide more more insights about the efficiency of a Facebook existence.

Table 4. Facebook Accounts of the State Universities

+: Yes	OFFICIA	L FA	CEBO	OK AC	COUNT					
-: No		a	səf		ents	o.o	er of	er of	le	Ratio
STATE UNIVERSITIES	Profile Photo	Verified page	Total Messages	Total Likes	Total Comments	Total Sharing	Initial Number of Followers	Final Number of Followers	Change in the Number of	Interaction Ratio
Ege University	Corporate Logo	-	35	4,976	82	527	30,472	30,422	-50	0.5245
Middle East Technical University	Corporate Logo	-	99	34,974	324	9,561	116,578	118,068	1,490	0.3837
Hacettepe University	Corporate Logo	-	167	33,379	325	2,739	79,526	79,810	284	0.2734
Gazi University	Corporate Logo	+	159	35,162	1,809	4,702	123,585	122,129	-1,456	0.2146
Istanbul Technical University	Corporate Logo	-	148	16,307	204	1,971	78,036	78,831	795	0.1584
Atatürk University	Corporate Logo	-	131	14,697	191	672	103,684	103,448	-236	0.1145
Erciyes University	Corporate Logo	-	308	7,483	133	388	22,529	22,852	323	0.1137
Istanbul University	Corporate Logo	-	103	11,541	148	1,284	121,189	120,297	-892	0.1047
Ankara University	Corporate Logo	-	73	2,316	84	187	68,240	68,495	255	0.0517
Gebze Technical University	Corporate Logo	-	114	-	-	-	-	-	-	-

Having the highest interaction ratio, although Ege University shared the least number of posts, received an average of 142 likes per share. Unlikely, Ankara University has the lowest interaction ratio, with an average of 31 likes per share (See Table 5). Likewise, Ege University receives at least 2 comments on each post while Ankara the same ratio

for Ankara University 1.15, ie. about one comment for each post. It is possible to interpret this finding as most of the posts of Ankara University may have not attracted much attention. As will be given in Table 8, majority of the posts of Ankara University are related to the public announcements about scientific meeting, which does not attract students.

Table 5. Proportional View of the State Universities' Facebook Data

+: Yes	Ratios							
-: No	sage Fotal	l otal	essage / Total	oer of	y owers verage	Every owers nts / oer or	ery owers ge	te
STATE UNIVERSITIES	Likes Per Message (Total Likes / Total Messages)	Comment per message (Total Comments / Total	Sharing Per Message (Total Sharing / Total	Average Number of Followers	Likes for Every Thousand Followers (Total Likes/ Average	Comments for Every Thousand Followers (Total Comments / Average Number or	Sharing for Every Thousand Followers (Total Sharing/Average	Interaction Rate
Ege University	142.171	2.342	15.057	30,447	163	2	17	0.5245
Middle East Technical University	353.272	3.272	96.575	117,323	298	2	81	0.3837
Hacettepe University	199.874	1.946	16.401	79,668	418	4	34	0.2734
Gazi University	221.144	11.377	29.572	122,857	286	14	38	0.2146
Istanbul Technical University	110.182	1.378	13.317	78,433	207	2	25	0.1584
Atatürk University	112.190	1.458	5.129	103,566	141	1	6	0.1145
Erciyes University	24.295	0.431	1.259	22,690	329	5	17	0.1137
Istanbul University	112.048	1.436	12.466	120,743	95	1	10	0.1047
Ankara University	31.726	1.150	2.561	68,367	33	1	2	0.0517
Gebze Technical University	-	-	-	-	-	-	-	-

As seen in Table 6, 935 messages 72,162 likes and 2,772 comments were made to shared messages, and 10.433 followers shared their posts on their

profile at the private universities. Hence, the state universities use Facebook more intensively than the private universities in Turkey.

Table 6. Facebook Accounts of the Private Universities

+: Yes	OFFICIA	L FA	CEBO	OK ACC	OUNT					
-: Hayır PRIVATE UNIVERSITIES	Profile Photo	Verified page	Total Messages	Total Likes	Fotal Comments	Total Sharing	Initial Number of Followers	Final Number of Followers	Change in the Number of Followers	Interaction Rate
Sabancı University	Corporate Logo	+	65	21,123	1,983	2,445	62,269	64,413	2,144	0.6102
İhsan Doğramacı Bilkent University	Corporate Logo	-	54	18,205	140	1,678	68,074	69,011	937	0.5373
Çankaya University	Corporate Logo	-	88	1,781	38	180	5,704	5,782	78	0.3928
Başkent University	Corporate Logo	-	136	4,097	72	988	11,883	12,165	282	0.3117
Koç University	Corporate Logo	+	67	13,315	201	3,881	86,527	88,443	1,916	0.2935
Acıbadem University	Corporate Logo	-	30	925	20	86	15,145	15,314	169	0.2244
TOBB Economics and Technology University	Corporate Logo	-	42	1,293	13	93	29,870	29,425	-445	0.1132
Atılım University	Corporate Logo	-	74	4,288	97	365	76,115	83,117	7,002	0.0772
Doğuş University	Corporate Logo	+	130	1,758	54	109	22,613	22,417	-196	0.0659
Yeditepe University	Corporate Logo	-	249	5,377	154	608	41,095	40,868	-227	0.0603

Sabancı University, which has the highest interaction rate in Table 6, has a total of 65 messages, while in Table 7 it received an average of 324 likes per message. However, Yeditepe University, which has the lowest interaction rate, has 249 messages in Table 6 and an average of 21 likes per message in Table 7. Similarly, 30 comments were made on the posts of Sabancı University, while on average, 0.61 on the shares of

Yeditepe University, or at least 1 comment on each share. From this point of view, although the shares of Sabancı University are lower than Yeditepe University, the rates are higher, and it is possible to say that the messages of Sabancı University are more remarkable. As seen in Table 9 Yeditepe University shares the most part of the activity criteria.

 Table 7. Proportional View of the Private Universities' Facebook Data

+: Yes	PROPO	RTIONA	L VIEW (OF CORPO	ORATE FA	ACEBOOK .	ACCOUNTS	
-: Hayır	e (Total sages)	ssage / Total	age otal	Jo	housand Likes/ of	ery ers /	ers erage ers)	
PRIVATE UNIVERSITIES	Likes Per Message (Total Likes / Total Messages)	Comment per message (Total Comments / Total	Sharing Per Message (Total Sharing / Total Messages)	Average Number of Followers	Likes for Every Thousand Followers (Total Likes/ Average Number of	Comments for Every Thousand Followers (Total Comments /	Sharing for Every Thousand Followers (Total Sharing/Average Numver of Followers)	Interaction Rate
Sabancı University	324.969	30.507	37.615	63,341	333	31	38	0.6102
İhsan Doğramacı Bilkent University	33.425	2.592	31.074	68,542	265	2	24	0.5373
Çankaya University	20.238	0.431	2.045	5,743	310	6	31	0.3928
Başkent University	30.125	0.529	7.264	12,024	340	5	82	0.3117
Koç University	198.731	3	57.925	87,485	152	2	44	0.2935
Acıbadem University	30.833	0.666	2.866	15,229	60	1	5	0.2244
TOBB Economics and Technology University	30.785	0.309	2.214	29,295	44	4	3	0.1132
Atılım University	57.945	1.310	4.932	79,616	53	1	4	0.0772
Doğuş University	13.523	0.415	0.838	22,515	78	2	4	0.0659
Yeditepe University	21.594	0.618	2.441	40,981	131	3	14	0.0603

When Table 8 is analyzed, it is seen that the state universities share the highest efficiency criteria with a rate of 0,202. It is thought that the 3-month period covering the research period coincides with the spring months and has an impact on the efficacy criterion. Scientific meeting criterion is followed by the activity criterion with a share rate of 0.195. Seminars, conferences, panels etc. evaluated within the scope of the scientific meeting criteria within the 3-month period covering the research period of the

state universities. It is possible to say that importance is attached to the activities and sharing of these activities on the Facebook. Following the scientific meeting criteria, the announcement criterion comes with a sharing rate of 0.109. Following the announcement criterion, the most sharing is followed by the promotional criterion with 0.096 messages. When the promotion criterion is analyzed, it is seen that the highest share rate belongs to Hacettepe University with 0,497.

Table 8. Proportional Distribution of Messages in the State University Facebook Accounts by Subject

STATE UNIVERSITIES	Announcement	Information	Scientific Meeting	Meeting- Interview	Service	Activity	Culture-Art	Ceremony	Celebration	Invitation-Visit	Claim-Wish	Sports	Health	Promotion	Condolence- Commemoration	Other	TOTAL
Ege University	0,057	0,142	0,114 (0,028	0,028	0,200			0,200	ı	0,028	0,057	0,057		0,057	0,028	35
Middle East Technical University	0,181	0,161	0,151 (0,010	0,010	0,191 0	0,070	0,020	0,060		0,020	0,010		0,070	0,030	0,010	66
Hacettepe University	0,059	0,041	0,053)	0,143 0	0,119	0,017	0,023	ı		0,023		0,497	0,017		167
Gazi Üniversitesi	0,283	0,018	0,018			0,106		900'0	0,062	ı	0,094	900'0		0,132	0,037	0,232	159
lİstanbul Technical University	0,074	0,222	0,209	0,033	0,027	0,202 0	0,040		0,040	0,013	0,006	0,040		0,020	0,020	0,047	148
Atatürk University	0,022	0,007	0,206	0,038	0,007	0,267	0,045	0,007	0,160	0,099	0,022	0;030	,	0,015	0,030	0,038	131
Erciyes University	0,120	0,074	0,314 (0,003	0,003	0,279 0	0,103	0,022	0,025	0,009		0,032	,		900;0	0,003	308
Ankara University	0,087	0,145	0,126	0,087	0,038	0,077	0,038	0,048	0,067	1	600,0	0,067	0,029	0,116	0,019	0,038	103
Ankara University	960'0	0,027	- 6/4/0			0,150	0,082	0,027	0,041	ı	ı	0,013			890;0	0,013	73
Gebze Technical University	0,035	0,157	0,236	0,114		0,298		0,017	0,026	0,052	0,008	0,035	,	0,008		0,008	114
TOTAL	0.109	0,091	0,195 0	0,026 0	0,008	0,202 0	0,060	0,017	0,056	0,017	0,017	0,029	0,003	960'0	0,022	0,043	1337

Table 9. Proportional Distribution of Messages in the Private Universities Facebook Accounts by Subject

Meeting- Interview Scientific Meeting Information
0,138 0,353 0,030 -
0,018 0,185 0,074 -
0,125 0,045 0,181 - 0,034
0,051 0,08 0,198 -
0,104 0,089 0,149 0,014 0,014
0,100 0,033 0,433 -
0,095 0,071 0,214 - 0,023
0,148 0,121 0,094 -
0,061 0,007 0,184 -
0,124 0,060 0,293 - 0,020
0,098 0,088 0,197 0,001

When Table 9 is analyzed, it is seen that the private universities share the highest efficiency criteria with the rate of 0,267. Scientific meeting criterion

follows the activity criterion with the rate of 0,197. The announcement criterion is followed by the announcement criterion with 0.098 rate, followed

by the informative criterion with 0.088 rate and the 0.087 rate. Although Yeditepe University is the university that shares the most messages among the private Universities (249) and the criteria that it gives intensity are similar to Sabancı University, the lowest interaction rate shows that their sharing is not impressive. In order to increase the interaction rate of Yeditepe University, it is recommended to change its shares, take care of the quality of the shares and follow a path according to the expectations of the target audience.

Comparing the Tables 8 and 9, it is possible to say that the criteria that the state and the private universities share the most are similar. It is seen that the first 5 of the state universities constitute an event, scientific meeting, announcement, promotion and information criterion, while the first 5 of the private universities constitute an event, scientific announcement. information meeting, and celebration criterion. It is seen that the top 3 shared criteria and ranking are the same in the state and the private universities. The different criteria are the promotion criteria, which are in the top five in the state universities, and the celebration criteria, which are in the top five in the private universities.

7. CONCLUSION

Universities need to use technology intensively and take full advantages of social media in order to provide better value for the existing and potential students. Because, social networks have become an increasingly popular medium and among young people. Thus, institutions pay attention to take place in social media, which has no time and space limit, is easy to access, and provides fast and close transportation. In addition, Facebook, which has the most common use among social media, is seen as an important communication network for many segments. It is not possible for universities, which are especially rich in young people, to benefit from social media platforms. Universities university followers to be aware of the university on any subject they want with the posts they share on Facebook. Universities immediately learn the opinions of the target audience with the feedbacks they receive and can shape the structure of the university accordingly.

Top 10 public and the private universities that are the subject of this research have official Facebook accounts and are actively used. Universities other than Atatürk University have social media access icons on their corporate web pages and social media icons function without any problems. As the Gebze Technical University, one of the state universities, has not been added to the Boomsocial measurement and analysis program, information about the university could not be included in the Facebook account overview. An important point in the research that is emphasized in the Facebook overview is the interaction rate. The interaction rate shows how effective the social media platforms used by the university as a public relations activity. It is known that the total message, total comment, total share, the number of start fans, the number of end fans and the increase of the seasonal fan are the factors that affect the interaction rate. None of the mentioned criteria can increase the interaction rate alone. Too much sharing does not mean higher interaction rate. It is thought that the important thing is to make an effective sharing and attract the target audience as a comment or liking. When Facebook interaction rates of the state and the private universities are taken into consideration, it is seen that there are universities that have higher interaction rates in the private universities than the state universities. It can be suggested to the state universities to increase their interaction rates by making their sharing more effective and quality.

When the subject contents of the public Facebook accounts of the state universities are analyzed, it is determined by the examination that the state universities are shared with the most activity, scientific meeting and announcement criteria in the private universities. It is also possible to say that universities do not pursue a common social media policy, each university's target audience is unique, their target audience has different expectations, and they react differently to different criteria.

Nowadays, given the usage rates of Facebook, universities' effective use of this social media, ilt enables them to experience many positive public relations activities such as reputation, image, promotion, follow-up, liking, sharing, and being preferred. In the furher studies, it is advised to

increase the number of universities and the observation period for better understanding.

REFERENCES

- 1. BARUTÇU, S. & TOMAŞ, M. (2013). "Sürdürülebilir Sosyal Medya Pazarlaması ve Sosyal Medya Pazarlaması Etkinliğinin Ölçümü", İnternet Uygulamaları ve Yönetimi Dergisi, C:4, S.1, pp. 5-24.
- 2. BINGÖL, S. & TAHTALIOĞLU, H. (2017). "Türkiye'de Üniversitelerin Sosyal Medya Kullanımı: Gazi Üniversitesi Örneği", Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, C:22, pp. 2405-2423.
- 3. CUTLIP, S. M., CENTER, A. H. & BROOM, G. L. (1994). Effective Public Relations, Englewood Cliffs, Prentice-Hall, New Jersey.
- 4. ÇAĞLAR, N. G. (2006). "Üniversite Kütüphanelerinde Halkla İlişkiler ve Başkent Üniversitesi Kütüphanesi", Yüksek Lisans Tezi, Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü Bilgi ve Belge Yönetimi Anabilim Dalı, Ankara.
- 5. GÜVEN, B. (2014). "Yüksek Öğretim Kurumlarında Halkla İlişkiler Faaliyetleri: Atatürk ve Muş Alparslan Üniversiteleri Örneğinde", Yüksek Lisans Tezi, Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Halkla İlişkiler ve Tanıtım Anabilim Dalı, Erzurum.
- 6. IPRA, https://www.ipra.org/member-services/pr-definition/.
- 7. KIRCOVA, İ. & ENGINKAYA, E. (2015). Sosyal Medya Pazarlama, 1. Baskı, Beta Basım A.Ş., İstanbul.
- 8. ONAT, F. (2014). Dijital Çağda Halkla İlişkiler Yazarlığı, Nobel, Ankara.
- 9. ÖZDEMIR, F. (2013). Boom Social Beta Yayına Girdi, Retrieved from http://lsosyalmedya.com/boom-social-beta-yayına-girdi.html, 01.03.2018.
- 10. TIKVEŞ, Ö. (2005). Halkla İlişkiler ve Reklamcılık, 2. Bası, Beta Basım A.Ş., İstanbul.
- 11. Turkish Higher Education Law (No. 2547), (1981). T.C. Resmi Gazete, 17506.
- 12. University Ranking by Academic Performance, Retrieved from tr.urapcenter.org, 01.08.2017.
- 13. University Ranking by Academic

- Performance, 2016-2017 Devlet Üniversiteleri Genel Sıralaması, Retrieved from http://tr.urapcenter.org/2016/2016_t5.php, 01.08.2017.
- 14. University Ranking by Academic Performance, 2016-2017 Vakıf Üniversiteleri Genel Sıralaması, Retrieved from http://tr.urapcenter.org/2016/2016_t6.php, 01.08.2017.
- 15. YILMAZ, M. (2015). "Üniversitelerde Halkla İlişkiler: Kurumsal Web Sayfaları ve Sosyal Medya Uygulamaları Üzerine Bir Değerlendirme", Yüksek Lisans Tezi, Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Halkla İlişkiler ve Tanıtım Ana Bilim Dalı Halkla İlişkiler ve Tanıtım Bilim Dalı, Konya.
- 16. Boomsocial (2018). Retrieved from www.boomsocial.com/Social-Medya-ve-Biz.
- 17. Dijital Ajanslar (2018). Retrieved from www.dijitalajanslar.com/social-medya-takip-araclari/.

A PRELIMINARY INVESTIGATION OF DIGITAL HOARDING BEHAVIORS OF UNIVERSITY EXECUTIVES

Ömer Faruk ACAR*, Seda ACAR**

- * Corresponding Author, Lecturer, Süleyman Demirel University, omeracar@sdu.edu.tr, https://orcid.org/0000-0002-1878-9172.
- ** M.B.A., Akdeniz University, sedaacar7@hotmail.com, https://orcid.org/0000-0003-0492-6145.

ABSTRACT

Life in digital age leads people sharing more information online. Becoming increasingly dependent on their digital assets, leading Internet users to worry that losing those assets may cause problems. Therefore, there are similarities between the stacking behavior of physical and digital assets. In this study, digital hoarding behaviors of university executives on e-mail usage have been analysed. A questionnaire has been formed based on the work of Sweeten et al (2018). The participants of the study were determined as the senior level university executives that use their e-mail accounts intensively. In this context, 50 academic members of Süleyman Demirel University who have administrative duties participated the study. Exploratory analyses are conducted, and the findings are discussed.

Keywords: Digital Hoarding, E-Mail, University Executives.

Jel Codes: 123, M12, M15.

1. INTRODUCTION

Many people keep items throughout their lives even if they do not use or need them at all. Such behavior may be related to the functional and emotional dimensions of the item. However, some people take this behavior to an advanced level for reasons. This causes a pathological condition and becomes an important problem in the life of the individual (İsliyen, 2019: 405).

This condition, which is often referred in the literature as the 'Hoarding Disorder', is dysposophobia or pathological accumulation with different definitions, the objects are invaluable, unhealthy or dangerous, but not severely stacked or accumulated (Gökdaş, 2017:173-174).

"People who have a Hoarding Disorder have constant difficulty getting rid of them, regardless of their actual value. As a result, old items continue to be accumulated, even if they do not work. This situation can cause serious problems such as narrowing the living space at home, negatively affecting the quality of life, stress and anxiety disorders and family unrest" (Tunca, 2019). Therefore, Hoarding Disorder is considered a clinically important condition. Stacking or accumulating discomfort affects mobility and prevents major activities such as hygiene, health, cooking and cleaning and sleep (Gökdaş, 2017: 173-174).

We live in an increasingly digital age and people are sharing more information online. Almost everyone is in a relationship with every information shared. People are becoming increasingly dependent on their digital assets, causing them to worry that their deletion or loss may cause them problems in the future and accumulate their digital assets. Therefore, it is a fact that there is a direct relationship between the stacking of physical assets and the stacking of digital assets. Therefore, digital assets are also included in the goods we interact with in daily life. Within the scope of the study, the digitalization that caused the emergence of digital hoarding, the changes it caused, and the data obtained from the focus interview and its interpretation were included.

2. DIGITALIZATION

Digitalization takes place as a system that dominates all visual communication technologies of the digital age. Unlike traditional media, this system is based on a digital coding and the communication process takes place at high speed and multi-layer interaction. For this reason, this system, realized by the fact that a visual message consists of digital codes, has an important place in the art of moving painting. Along with the digitization process, many different concepts are on the agenda. In particular, a new era is emerging with new experiences in the development of visual communication (Sunal,

2016: 300). One of the most important features that define digitization is the ability to convert data in a different format. The digital form of the content enables the information to be transferred smoothly and quickly via different communication channels. With digitalization, the size of electronic devices has been reduced and at the same time, the mobilization of information has become possible. Digitization also saved communication from being dependent on cable and the use of individual communication tools is becoming widespread (Değirmencioğlu, 2016: 595).

On the other hand, it is possible to list the factors that enable digitalization to actively affect the life of the individual and the society (Bal, 2010: 2-3):

- Individual expectations of life change day by day and digital life can respond to them,
- Digital elements ensure that human life conditions are improved in every sense,
- The services provided by the digital world help to relax individuals psychologically,
- Digital elements create new employment areas and therefore individuals are required to closely follow the developments in the digital world.
- The new digital world is the result of people's curiosity; so the digital situation keeps people in touch with technology,
- Humanity is in a struggle and competition to use what they get from the digital world for their own benefit,
- People use digital tools at least once in all activities in their lives; Therefore, digital elements have an indirect effect on human practices and decision-making activities.

The most striking point is that digital elements become an important part of people's lives. Technology is an indispensable part of humanity, especially in everyday life, and the individual's spirit and mind are digitized. On the other hand, the new communication process that emerged with digitalization has radically changed communication processes in the daily life of the society. In today's world, communication is no longer a physical dimension. On the contrary, the communication understanding of the new era is largely based on written and visual elements on digital platforms. Since this is a matter of debate, people often prefer digital platforms to express themselves, socialize and display an active attitude and behavior. (Turhan, 2017: 27-28).

The transformation that took place in this period, in which speed and information encompassed life, led to new developments both in the behavior patterns of individuals and in the cultural patterns of societies. In the context of the topic, it is possible to say that digitalization has brought some discomfort due to its misuse or not being used effectively. Many studies agree that computer and television are addictive. These addictions, which basically contain entertainment, negatively affect the quality of life of adults, especially children and young people, in social life. However, many diseases have emerged in the digital age we are in. It is seen that some of these diseases are manifested by spending time in digital media and some of them by impulse control disorder. Some of the diseases that have been identified so far are as follows (İsliven, 2019: 409):

- Nintendinitis (Sports injury due to extreme video game playing),
- WhatsAppitis (Keyboard-Mouse Disease)
- Nomofobi (Fear of being deprived of the phone),
- Netlessfobi (Fear of staying without internet),
- Fomo (Fear of missing developments),
- Jomo (Fear of lacking in fun),
- · Google Stalking,
- · Siberhondrik,
- Youtube Narcissism

3. DIGITAL HOARDING

The concept, which is stated as Hoarding Disorder, is a behavioral disorder or disease that continues with the difficult situation that emerges after the accumulation of the object by considering the emotional value created by the objects and the benefit that is thought to be created in the future and the life quality of the individual is seriously affected (Bennekom et al., 2015: 1). In another definition, the problem that people who accumulate in their homes by not throwing away old items that they do not use for emotional reasons or worry about need may be referred to as Hoarding Disorder after a while. People who have stacking problems have constant difficulties getting rid of them, regardless of their true value. As a result of this, even if it does not work by those people, old items continue to be collected (Tunca, 2019).

Common symptoms of digital hoarding can be listed as follows: "Accumulating and not being able to throw away a large number of items that seem unnecessary or limited in value; The spaces that are vacant have been specially set to prevent performing activities for which these spaces are designed; Obvious trouble caused by accumulation and difficulty in moving; Reluctance or inability to return the borrowed items; Driven greed can sometimes lead to theft or kleptomania as the boundaries blur." (Dispozofobia, 2015).

Digital hoarding disorder is also a term digitally expressed for people who have similar troubles. In other words, digital hoarding is the accumulation of all kinds of digital materials such as e-mail, video, photo, document and files. The individual does not know exactly how to react to the digital data (s)he has accumulated. This situation is also expressed as a accumulation habit that results in stress and disorder and leads to trouble seeing ahead (Bennekom vd., 2015: 1).

It can be seen as normal behavior that individuals tend to accumulate their digital assets, which are material and emotional. In this respect, it is reported that children started collecting and storing objects at an average age of 25-27 months and this increased monotonic around the age of six. In addition, in 70% of the children considered healthy, the existence of these features has been demonstrated through studies (Bulut et al., 2015: 320). Similar to hoarding disease, digital hoarding emerges as a discomfort that causes the behavioral and cognitive disorders, which prevents the individual from his/her daily work and triggers the quality of life negatively.

Bennekom et al. (2015) conducted the first study in the literature on digital hoarding. In this study, a patient at the age of 47 refers to digital photo accumulation problem that affects his daily work. The patient was determined in the literature as the first "digital hoarder". The patient stated that although many of the photes that he stack were

similar, they had difficulty in deleting them as they brought back memories.

Although it is possible to record large amounts of data with today's technology, this accumulation or stacking behavior reveals a kind of "information scatter". Digital assets should not be evaluated only by storage. Store properly and systematically and with accurate identification is one of the ways to properly evaluate digital data (İşliyen, 2019: 411).

4. METHOD

An empirical study was conducted in this study. The questionnaire was formed in Likert Scale by adopting the "Digital hoarding behaviors: Underlying motivations and potential negative consequences" study of Sweeten et al (2018). The participants of the study were determined as the senior level university executives that use their email accounts intensively. The survey was conducted on 50 academic members of Süleyman Demirel University that have administrative duties. The main reason of selecting the participants from executives is their active use of e-mail accounts for formal communications and administrative purpose.

The data obtained were analyzed with the SPSS program. The demographic data were analyzed by frequency analysis. In the second category, the relationship between cross tables and variables were analyzed.

4.1. Frequency Distributions

The first part of the survey consists of the demographic questions such as gender, academic title, administrative duties and ages. Frequency distributions of the demographic data of the participants are shown in Table 1.

Table 1. Frequency Distributions of Demographic Data

	Gender	
	Frequency	Percentage
Male	40	%80
Female	10	%20
Total	50	%100
	Academic Title	
	Frequency	Percentage
Professor	21	%42
Associate Professor	7	%14
Assistant Professor	12	%24
Lecturer	10	%20
Total	50	%100
	Administrative Duty	
	Frequency	Percentage
Rector & Vice Rector	2	%4
Dean & Vice Dean	12	%24
Director	15	%30
Head of Department & Deputy Head of Department	17	%34
Head of Sub Department	4	%8
Total	50	%100
	Age	·
	Frequency	Percentage
25-35	7	%14
36-45	21	%42
46-55	19	%38
56-65	3	%6
Total	50	%100

It is seen from Table 1 that the participants of the study are predominantly male and mostly in the age group of 36-55. The highest percentage of the participants are full prefessors while majority of them are either director, dean or head of department.

Table 2 depicts the frequency distributions of the email usage details. While majority of the participants read most of the e-mails, they also keep over 41 of the e-mail messages after reading for future references or other reasons (See Table 3). The succeeding frequency distributions highlight that most of the e-mail messages are deleted after reading.

Table 3 shows the frequency distributions of digital hoarding behaviors. The majority of the participants reads the title of the messages to decide reading the message immediately or not. Likewise, an important number of the participants only sometimes or rarely need the stored e-mail messages. While the rate of those who clean the inbox every day is high, the number of those who clean one or two times a year or month is also high.

Participants think that most of the messages they keep in their inbox will be useful in the future. There is a balance between those who think they are keeping messages that they think will not be useful in the future and those who do not. The majority of the participants state that they do not have difficulty deleting messages that are not useful. The participants also state that they kept their messages in their e-mail accounts because they thought they would need them in the future. While expressing that they rarely delete stored messages by mistake, the participants also state that they do not feel anything but sadness and regret after the messages they accidentally deleted.

4.2. Crosstabs for Demographics and E-Mail Account Usage

Crosstabs for demographic and e-mail account usage data are given in Tables 4 to 7 for comparative purposes.

Table 2. Frequency Distributions of E-mail Usage Data

Numl	ber of unread messages in e-mail i	nbox
	Frequency	Percentage
Less than 10	30	%60
11-20	4	%8
21-30	5	%10
31-40	0	%0
41 and more	11	%22
Total	50	%100
Number of	messages stored in email inbox aft	ter reading
	Frequency	Percentage
Less than 10	9	%18
11-20	5	%10
21-30	1	%2
31-40	2	%4
41 and more	33	%66
Total	50	%100
Numbe	r of deleted e-mail messages in tra	sh can
	Frequency	Percentage
Less than 10	16	%32
11-20	5	%10
21-30	1	%2
31-40	5	%10
41 and more	23	%46
Total	50	%100
Numbe	r of unread e-mail messages in tra	ish can
	Frequency	Percentage
Less than 10	24	%48
11-20	7	%14
21-30	6	%12
31-40	0	%0
41 and more	13	%26
Total	50	%100

Table 3. Frequency Distributions of Digital Hoarding Behaviors

Routine Behavior When Receiving a New Email Message												
	Frequency	Percentage										
Immediately reading the e-mail	7	%14										
Reading the the e-mail if the title is important	37	%74										
Taking no action for a while	6	%12										
Total	50	%100										
Frequ	ency of Needing Stored E-mail Mo	essages										
	Frequency	Percentage										
Rarely	23	%46										
Sometimes	21	%42										
Often	6	%12										
Total	50	%100										

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Fr	equency of Cleaning E-mail Inl	box
	Frequency	Percentage
Everyday	18	%36
Once a week	9	%18
1 or 2 times a month	10	%20
1 or 2 times a year	11	%22
Never	2	%4
Total	50	%100
The Number of E-	mail Messages That May be No	eeded in the Future
	Frequency	Percentage
All of them	2	%4
Most of them	19	%38
Half of them	9	%18
Some of them	20	%40
Total	50	%100
The Stored E-	-mail Messages will not be Used	l in the Future
	Frequency	Percentage
Absolutely Agree	7	%14
Agree	15	%30
Undecided	6	%12
Do not Agree	13	%26
Strongly Disagree	9	%18
Total	50	%100
Having Diffi	culty on Deleting Unuseful E-m	nail Messages
8	Frequency	Percentage
Absolutely Agree	3	%6
Agree	9	%18
Undecided	5	%10
Do not Agree	17	%34
Strongly Disagree	16	%32
Total	50	%100
	asons for Keeping E-mail Messa	
	Frequency	Percentage
Need	38	%76
As an Evidence	4	%8
No Reason	8	%16
Total	50	%100
	of Accidentally Deleting E-mai	
1	Frequency	Percentage
Very Often	1	%2
Often	2	%4
Sometimes	4	%8
Rarely	35	%70
Never	8	%16
Total	50	%100
	er Accidentally Deleted an E-m	
	Frequency	Percentage
Regret	10	%20
Sadness	14	%28
Guilt	4	%8
Anger	2	%4
Nothing	20	%40
Total	50	%100
1 0441	50	/0100

Table 4. Gender and E-Mail Account Usage

USAGE			Number of unread messages in e-mail inbox					Number of messages stored in email inbox after reading					Number of deleted e-mail messages in trash can						Number of unread e-mail messages in trash can				
FREQUENCY		0-10	11-20	21-30	31-40	41+	0-10	11-20	21-30	31-40	41+	0-10	11-20	21-30	31-40	41+	0-10	11-20	21-30	31-40	41+		
GENDER	MALE (%)	70	5	5	0	20	22.5	7.5	2.5	5	62.5	40	7.5	2.5	10	40	52.5	12.5	12.5	0	22.5		
	FEMALE (%)	20	20	30	0	30	0	20	0	0	08	0	20	0	10	70	30	20	10	0	40		

As seen in Table 4, the number of messages that most of the male participants did not read in their email accounts is quite low. Male participants often read their messages, but they do not delete them. They continue to keep their deleted messages in the trash. The number of messages they delete without reading is very low. The number of e-mail messages that female participants is higher than the ones deleted without reading. Just like male participants, they do not delete the messages they read. Female participants tend to hide messages in deleted boxes more than male participants. The number of messages they delete without reading is higher than the ones of male participants. It is seen in Table 4

that female participants tend to stack messages more than men participants.

The crosstab in Table 5 demonsrates the frequency distributions of academic titles and e-mail account usage. The lecturers participating in the research often read the messages. The number of messages that are not read but deleted is quite high. Professors' and instructors' tendency to read and delete messages is higher than the others. Likewise, the tendency to store the messages they delete in the trash can is higher. Those academic groups do not delete messages without reading, and they do not keep the messages they delete without reading.

Table 5. Academic Title and E-Mail Account Usage

	USAGE		nber of mail ir		d mess	ages	Number of messages stored in email inbox after reading					Number of deleted e-mail messages in trash can					Number of unread e-mail messages in trash can				
FREQUENCY		0-10	11-20	21-30	31-40	41+	0-10	11-20	21-30	31-40	+11+	0-10	11-20	21-30	31-40	41+	0-10	11-20	21-30	31-40	+11+
	Professor (%)	66.7	9.5	0	0	23.8	14.3	9.5	0	8.4	71.4	38.1	4.8	4.8	4.8	47.6	47.6	14.3	9.5	0	28.6
ACADEMIC TITLE	Associate Professor (%)	42.9	28.6	14.3	0	14.3	14.3	28.6	14.3	0	42.9	0	42.9	0	28.6	28.6	28.6	28.6	14.3	0	28.6
	Assistant Professor (%)	58.3	0	16.7	0	25	25	0	0	8.3	2.99	41.7	0	0	8.3	50	90	0	16.7	0	33.3
	Lecturer (%)	09	0	20	0	20	20	10	0	0	70	30	10	0	10	50	09	20	10	0	10

Crosstab for administrative duties and e-mail account usage is given in Table 6. The number of messages sent to e-mail accounts is high due to the workloads of the academic staff who have administrative duties. As seen in Table 6, the faculty members who have administrative duties usually read the messages sent to their e-mail accounts regardless of their administrative duties. Deans,

directors and heads of departments tend not to delete the messages they read. They also tend to keep the messages they delete. The tendency to delete messages without reading and the tendency to keep these messages happens at all administrative duties. Deans, directors, and heads of departments are more likely to store messages.

Table 6. Administrative Duty and E-Mail Account Usage

	USAGE m		Number of unread messages in e-mail inbox			юх	Num in en	iber of	messa oox aft	ges sto er read	red ing	Number of deleted e-mail messages in trash can Number of unread e-messages in trash can				l e-mai	i1				
	FREQUENCY	0-10	11-20	21-30	31-40	41+	0-10	11-20	21-30	31-40	41+	0-10	11-20	21-30	31-40	41+	0-10	11-20	21-30	31-40	41+
	Rector & Vice Rector (%)	100	0	0	0	0	50	0	0	50	0	50	0	0	0	50	50	0	50	0	0
	Dean & Vice Dean (%)	66.7	16.7	0	0	16.7	25	8.3	0	0	2.99	41.7	8.3	8.3	0	41.7	50	16.7	0	0	33.3
ADMINISTRATIVE TASK	Director (%)	53.3	6.7	26.7	0	13.3	13.3	0	0	6.7	08	33.3	13.3	0	6.7	46.7	40	13.3	13.3	0	33.3
ADMINIS	Head of Department & Deputy Head of Department (%)	47.1	5.9	6.5	0	214	11.8	17.6	5.9	0	£.4.6	8'11	11.8	0	23.5	625	47.1	11.8	9'21	0	23.5
	Head of Sub Department (%)	100	0	0	0	0	25	25	0	0	90	75	0	0	0	25	75	25	0	0	0

40 v 311	USAGE			Number of deleted e-mail messages in trash can				Number of unread e-mail messages in trash can													
ASMAIIOAGA	FREQUENCI	0-10	11-20	21-30	31-40	41+	0-10	11-20	21-30	31-40	41 +	0-10	11-20	21-30	31-40	41 +	0-10	11-20	21-30	31-40	41 +
	25-35 (%)	42.9	0	0	0	57.1	0	0	0	14.3	85.7	28.6	0	0	28.6	42.9	57.1	14.3	14.3	0	14.3
AGE	36-45 (%)	57.1	14.3	5.6	0	19	23.8	4.8	0	0	71.4	42.9	4.8	0	4.8	47.6	57.1	5.6	5'6	0	23.8
AC	46-55 (%)	63.2	5.3	15.8	0	15.8	15.8	15.8	5.3	5.3	57.9	26.3	21.1	.53	5.3	42.1	31.6	21.1	10.5	0	36.8
	(%) 59-95	100	0	0	0	0	33.3	33.3	0	0	33.3	0	0	0	33.3	<i>L</i> :99	<i>L</i> '99	0	33.3	0	0

Table 7. Age and E-Mail Account Usage

The crosstabs for age and the e-mail account usage is given in Table 7. It is seen that the number of unread messages decreases as the age increases. The number of messages that are not read and but kept in the inbox shows an increase as the age decreases, on the contrary. As age increases, the tendency to keep deleted messages in the deleted messages box increases. Although there is no difference in the messages that are deleted without reading according to different age groups, the tendency to delete messages without reading is low for all age groups. It is seen that young people have more tendency to keep messages.

4.3. Crosstabs for Demographics and Digital Hoarding Behaviors

Crosstabs for demographic and digital hoarding behaviors data are given in Tables 8 to 11 for comparative purposes. As seen in Table 8, both male and female participants read the messages depending on the importance of the titles. While 20% of women read the messages immediately, only 12.5% male participants read do the same behavior. Male and female participants rarely or sometimes need to access the messages they keep in their inboxes. The percentages of those who often need it is 10% for men and 20% for women. While 40% of men clean their inboxes every day, this rate is 20% for women. Women clean their inboxes weekly, monthly and yearly periods. The proportion of those who think that only a few messages in their inboxes are valuable to them is 40% for both genders.

Similarly, 40% of the participants think that most of the messages in their inbox are valuable to them. The rate of those who think that they store messages that are not useful in the future for men and women is 30%. The majority of both groups think that they do not store messages that are not useful to them. 30% of women find it difficult to delete messages that are not useful. For men, however, this rate is

only 15%. Majority of participants in both genders claim that they can delete their e-mails with no hesitation. 80% of men and 60% of women state that they keep messages as they need them. Men have feelings of regret and sadness while women predominantly feel nothing when they accidentally delete e-mail messages. The tendency to keep

messages is higher in female participants. The fact that they have less time to clean their inboxes and have difficulty in deleting messages that are not useful for men and that they do not try to delete them shows that the behavior of stacking e-mail messages is higher in women than men.

Table 8. Gender and Digital Hoarding Behaviors

		GE	NDER		
Digital Hoarding Beh	Digital Hoarding Behaviors				
	Immediately reading the e-mail	12.5	20		
Routine Behavior When Receiving a New Email Message	Reading the the e-mail if the title is important	72.5	80		
	Taking no action for a while	15	0		
Frequency of Needing Stored E-mail Messages	Rarely	45	50		
1.12000 ng co	Sometimes	45	30		
	Often	10	20		
	Everyday	40	20		
	Once a week	15	30		
Frequency of Cleaning E-mail Inbox	1 or 2 times a month	17.5	30		
	1 or 2 times a year	22.5	20		
	Never	5	0		
	All of them	2.5	10		
The Number of E-mail Messages	Most of them	37.5	40		
That May be Needed in the Future	Half of them	20	10		
	Some of them	40	40		
	Absolutely Agree	15	10		
	Agree	30	30		
The Stored E-mail Messages will not be Used in the Future	Undecided	12.5	10		
be essea in the I utule	Do not Agree	25	30		
	Strongly Disagree	17.5	20		

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	Absolutely Agree	7.5	0
	Agree	15	30
Having Difficulty on Deleting Unuseful E-mail Messages	Undecided	10	10
Chastra 2 man ressunges	Do notAgree	37.5	20
	Strongly Disagree	30	40
Reasons for Keeping E-mail Messages	Need	80	60
	As an Evidence	7.5	10
C	No Reason	12.5	30
	Very Often	2.5	0
	Often	5	0
Frequency of Accidentally Deleting E-mail Messages	Sometimes	7.5	10
Ü	Rarely	67.5	80
	Never	17.5	10
	Regret	20	20
	Sadness	35	0
Feelings After Accidentally Deleted an E-mail Message?	Guilt	7.5	10
Ü	Anger	2.5	10
	Nothing	35	60

The crosstab for academic table and digital hoarding behavior is given in Table 9. As seen in the table, participants at all academic ranks tend to read e-mail messages depending on the importance of its title. Likewise, they also rarely or sometimes need their old messages in their inboxes. It is noteworthy that 41.7% of the assistant professors clean their inboxes once or twice a year. Similarly, 20% of the lecturers with the title of lecturer stated that they never clean their inboxes. It is also observed that 50% of the assistant professors clean their inboxes daily, while associate professors and full professors perform this job weekly and monthly, respectively. The proportion of those who think that only a few messages in their inboxes are valuable to them is

52.4% in professors, 41.7% in assistant professors and 30% in lecturers, respectively. Interestingly, 71.4% of the associate professors stated that a significant part of the messages is valuable for them. This rate is 50% for the assistant professors and 40% for the lecturers. Accidental message deletion behaviors among the academic levels either absent or rarely occur. While academicians with other titles feel nothing of messages that are deleted by mistake, assistant professors feel regret, sadness and anger. The tendency of keeping messages is higher in assistant professors than the other titles. The lecturers show the tendency of of stacking e-mail messages more than other academic groups.

Table 9. Academic Title and Digital Hoarding Behaviors

		ACADEMIC TITLE					
Digital Hoardi	ng Behaviors	Professor (%)	Associate Professor (%)	Assistant Professor (%)	Lecturer (%)		
	Immediately reading the e-mail	9.5	14.3	25	10		
Routine Behavior When Receiving a New Email Message	Reading the the e- mail if the title is important	85.7	57.1	66.7	70		
	Taking no action for a while	4.8	28.6	8.3	20		
Frequency of Needing Stored E-	Rarely	42.9	57.1	58.3	30		
mail Messages	Sometimes	47.6	42.9	16.7	60		
	Often	9.5	0	25	10		
	Everyday	5	14.3	50	30		
Frequency of	Once a week	19	57.1	0	10		
Cleaning E-mail	1 or 2 times a	23.8	28.6	8.3	20		
Inbox	1 or 2 times a year	19	0	41.7	20		
	Never	0	0	0	20		
The Number of E-	All of them	4.8	0	8.3	0		
mail Messages	Most of them	19	71.4	50	40		
That May be Needed in the	Half of them	23.8	14.3	0	30		
Future	Some of them	52.4	14.3	41.7	30		
	Absolutely Agree	0	28.6	8.3	40		
The Stored E-mail	Agree	33.3	14.3	41.7	20		
Messages will not be Used in the	Undecided	14.3	14.3	8.3	10		
Future	IDo not Agree	33.3	28.6	16.7	20		
	Strongly Disagree	19	14.3	25	10		
	Absolutely Agree	4.8	0	0	20		
Having Difficulty	Agree	19	0	25	20		
on Deleting Unuseful E-mail	Undecided	9.5	28.6	8.3	0		
Messages	Do notAgree	33.3	57.1	25	30		
	Strongly Disagree	33.3	14.3	41.7	30		
Reasons for	Need	85.7	100	58.3	60		
Keeping E-mail	As an Evidence	9.5	0	0	20		
Messages	No Reason	4.8	0	41.7	20		

	Very Often	4.8	0	0	0
Frequency of	Often	4.8	0	8.3	0
Accidentally Deleting E-mail	Sometimes	9.5	14.3	0	10
Messages	Rarely	61.9	85.7	75	70
	Never	19	0	16.7	20
	Regret	19	14.3	33.3	10
Feelings After	Sadness	28.6	28.6	25	30
Accidentally Deleted an E-mail	Guil	9.5	14.3	8.3	0
Message?	Anger	0	0	16.7	0
	Nothing	42.9	42.9	16.7	60

Table 10 shows the crosstab for types of administrative tasks and digital hoarding behavior. While all administrative tasks require reading incoming e-mail messages regularly, they rarely or sometimes need their old messages in their inboxes. The majority of the participants clean their inboxes every day. The proportion of those who think that only a few messages in their inboxes are valuable is 50% for rectors and vice-rectors, 41.7% for deans

and vice-deans, and 40% for directors and vice-directors, respectively. The vast majority of the participants think that they do not hide messages that are not useful. Again, an important number of the participants do not have difficulty in deleting the messages. Accidental message deletion among the participants either does not happen at all or rarely occurs. The tendency of hiding messages is higher for the heads of the departments.

 Table 10.
 Administrative Task and Digital Hoarding Behaviors

			ADMINISTRATIVE TASK						
Digital Hoa	Rector & Vice Rector (%)	Dean & Vice Dean (%)	Director (%)	Head of Departmen t & Deputy Head of Departmen t (%)	Head of Sub Departm ent (%)				
Routine	Immediately reading the e- mail	50	8.3	20	11.8	0			
Behavior When Receiving a New Email Message	Reading the the e-mail if the title is important	50	75	66.7	82.4	75			
Message	Taking no action for a while	0	16.7	13.3	5.9	25			
Frequency of Needing	Rarely	0	50	60	29.4	75			
Stored E- mail	Sometimes	50	41.7	26.7	58.8	25			
Messages	Often	50	8.3	13.3	11.8	0			

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	Everyday	100	41.7	40	17.6	50
Frequency	Once a week	0	25	13.3	17.6	25
of Cleaning E-mail	1 or 2 times a	0	16.7	13.3	29.4	25
Inbox	1 or 2 times a	0	16.7	33.3	23.5	0
	Never	0	0	0	11.8	0
The	All of them	0	0	6.7	5.9	0
Number of E-mail	Most of them	50	25	33.3	47.1	50
Messages That May	Half of them	0	33.3	20	5.9	25
be Needed in the	Some of them	50	41.7	40	41.2	25
	Absolutely Agree	0	0	26.7	11.8	25
The Stored E-mail	Agree	50	25	33.3	29.4	25
Messages will not be	Undecided	0	25	6.7	11.8	0
Used in the	IDo not Agree	50	25	20	23.5	50
Future	Strongly Disagree	0	25	13.3	23.5	0
Having	Absolutely Agree	0	0	6.7	11.8	0
Difficulty on Deleting	Agree	50	16.7	26.7	11.8	0
Unuseful E-	Undecided	0	8.3	13.3	5.9	25
mail Messages	Do notAgree	0	33.3	20	47.1	50
	Strongly	50	41.7	33.3	23.5	25
Reasons for	Need	100	66.7	73.3	76.5	100
Keeping E- mail	As an Evidence	0	16.7	6.7	5.9	0
Messages	No Reason	0	16.7	20	17.6	0
Frequency	Very Often	0	8.3	0	0	0
of	Often	0	8.3	0	5.9	0
Accidentall y Deleting	Sometimes	0	8.3	6.7	11.8	0
E-mail Messages	Rarely	100	41.7	80	70.6	100
Messages	Never	0	33.3	13.3	11.8	0
Feelings	Regret	50	0	2.0	29.4	2.5
After	Sadness	0	58.3	26.7	17.6	0
Accidentall y Deleted	Guil	0	8.3	6.7	5.9	25
an E-mail	Anger	0	0	13.3	0	0
Message?	Nothing	50	33.3	33.3	47.1	50

Finally, Table 11 presents the crosstab for age and digital hoarding behavior. Most of the participants from all age groups read the e-mail depending on the title of the message. In addition, it is a remarkable that the 33.3% of the 56-65 age group reads the messages immediately. Participants between the ages of 25-35 often need old messages that they keep in their inboxes. In other age groups, this situation rarely or occasionally occurrs. While 46-55 and 56-65 age groups clean their inboxes weekly and monthly, participants in other age groups clean their inboxes every day. It is noteworthy that 28.6% of the 25-35 age group never

clean the inbox. The 71.4% of the participants in 25-35 age group, on the other hand, thinks that a significant part of the messages in their inbox are important. The vast majority of participants from each age group do not find it difficult to delete messages. Accidental message deletion behavior for all age groups is either absent or rarely occurs. It is also noteworthy that majority of the youngest administratives do not feel anything if they accidentally delete e-mail messages. The tendency of keeping messages is igher in the age groups of 36-45 and 46-55.

Table 11. Age and Digital Hoarding Behaviors

	e II. Age and Digital I				
			AG	EE	
Digital Hoardin	g Behaviors	25-35 (%)	36-45 (%)	46-55 (%)	56-65 (%)
	Immediately reading the e-mail	14.3	14.3	10.5	33.3
Routine Behavior When Receiving a New Email Message	Reading the the e- mail if the title is important	71.4	66.7	84.2	66.7
	Taking no action for a while	14.3	19	5.3	0
Frequency of Needing Stored E-mail	Rarely	28.6	57.1	42.1	33.3
Messages	Sometimes	28.6	38.1	47.4	66.7
	Often	42.9	4.8	10.5	0
	Everyday	28.6	42.9	31.6	33.3
	Once a week	0	19	21.1	33.3
Frequency of Cleaning E-mail Inbox	1 or 2 times a	14.3	14.3	26.3	33.3
	1 or 2 times a year	28.6	23.8	21.1	0
	Never	28.6	0	0	0
	All of them	0	4.8	0	33.3
The Number of E-mail Messages That May be	Most of them	71.4	38.1	26.3	33.3
Needed in the Future	Half of them	0	19	26.3	0
	Some of them	28.6	38.1	47.4	33.3
	Absolutely Agree	14.3	14.3	15.8	0
The Stored E-mail	Agree	28.6	33.3	26.3	33.3
Messages will not be	Undecided	14.3	9.5	15.8	0
Used in the Future	IDo not Agree	28.6	23.8	26.3	33.3
	Strongly Disagree	14.3	19	15.8	33.3

	Absolutely Agree	14.3	0	10.5	0
Having Difficulty on	Agree	14.3	23.8	15.8	0
Deleting Unuseful E-	Undecided	14.3	4.8	15.8	0
mail Messages	Do notAgree	28.6	33.3	31.6	66.7
	Strongly Disagree	28.6	38.1	26.3	33.3
	Need	57.1	76.2	84.2	66.7
Reasons for Keeping E-mail Messages	As an Evidence	0	4.8	10.5	33.3
C	No Reason	42.9	19	5.3	0
	Very Often	0	0	5.3	0
Frequency of	Often	0	4.8	5.3	0
Accidentally Deleting	Sometimes	14.3	4.8	10.5	0
E-mail Messages	Rarely	57.1	76.2	63.2	100
	Never	28.6	14.3	15.8	0
	Regret	28.6	19	21.1	0
Feelings After	Sadness	0	33.3	36.8	0
Accidentally Deleted	Guil	14.3	9.5	5.3	0
an E-mail Message?	Anger	0	9.5	0	0
	Nothing	57.1	28.6	36.8	100

5. CONCLUSION

Nowadays, tremendous growth of the information and communication technologies promotes sharing vast amount of information in digital channels. People and organizations can now easily generate more and more data and store them at a low cost. As a result, people feel need of storing many data such as photos, videos, books, e-mails both on the cloud services and on various devices. In this regard, unlimited storage opportunities offered by the digital environment lie beside the approach of individuals to digital data.

Digital hoarding is an emerging behavioral disorder in the last decade. However, there is a limited number of emrirical evidence about its causes, treatment and impacts over performance and social life.

Hence, this study aims to provide a preliminary investigation of digital hoarding behavior of the academic members of a university with a senior level administrative duty, who need to use their email accounts more than many other white-collar professions.

The findings show that digital hoarding behavior is quite common in academic administrative duties. However, it is important to note that since e-mail usage is a part of the duty, it is not possible classified such behavior as a behavioral disorder. Moreover, since the number and the geographic distribution of participants of the study is limited, further analyses need to be conducted. Nonetheless, the findings of this preliminary study suggest some emerging issues that need to be tracked in the future researches.

REFERENCES

- 1. BAL, O. (2010). "The Effects of Technology on Socio-Economic Structure", Academic View Magazine, (20), 1-23.
- BENNEKOM, M. J., BLOM, R. M., VULINK, N. & DENYS, D. (2015). "A Case of Digital Hoarding", BMJ Case Rep 2015, doi:10.1136/bcr-2015-210814

- 3. BULUT, S. D., ÖZDEL, K. & KISA, C. (2015). "Stacking from Symptom to Disorder", Journal of Current Approaches in Psychiatry, (3), 319-332.
- 4. DEĞIRMENCIOĞLU, G. (2016). "The Future of Journalism and Innovation Journalism in The Age of Digitalization", TRT Academy, 1(2), 590-606.
- 5. Dispozofobia (2015). http://www.hemensaglik.com/makale/dispozofo bi-biriktirmehastaligi
- 6. GÖKDAŞ, Y. (2018). "Lack of Communication and Rubbish House in The Context of Postmodern Art", Journal of Fine Arts Institute, 39, 171-181.
- 7. İŞLEYEN, M. (2019). "The New Disease of The Digital Age: Digital Hoarding", Akdeniz University Faculty of Communication Journal, June (31), 404-420.

- 8. SWEETEN, G., SILLENCE, E. & NEAVE, N. (2018). "Digital Hoarding Behaviours: Underlying Motivations and Potential Negative Consequences", Computers in Human Behavior, Vol.85, pp. 54-60.
- 9. SUNAL, G. (2016). " The Possibilities of Virtual Reality and Digital Cinema", Electronic Journal of İnönü University, Faculty of Communication, 1(2), 294-309.
- 10. TIMISI, N. (2003). New Communication Technologies and Democracy, Dost Bookstore, Ankara.
- 11.TUNCA, M. Z. (2019). http://mustafazihnitunca.com/2019/01/19/dijital-istifleme-bozuklugu/.
- 12. TURHAN, D. G. (2017). "Digital Activism", Süleyman Demirel University Journal of Social Sciences Institute, (26), 26-44.

A COMMENTARY ON 'EDUCATION AND HEALTH TOURISM' OPPORTUNITIES IN UZBEKISTAN IN THE DIGITAL AGE

Sadık BADAK*

* Dr., badak@sbadak.com.tr https://orcid.org/0000-0002-1192-5055.

1. INTRODUCTION

This commentary aims to discuss the main issue that contributed to Uzbekistan's vision of education and health tourism in the digital age. In order to understand the potential of the country, it is necessary to focus on the alternative tourism opportunities that spread tourism throughout the year. The following types of tourism promise potential for development in Uzbekistan:

- 1. Visit, Faith and Cultural Tourism,
- 2. Sports, Eco and Agro Tourism,
- 3. Festival, Entertainment, Gastronomy and Shopping Tourism,
- 4. Congress, Business and Fair Tourism,
- 5. Education, Culture and Art Tourism,
- 6. Health, Thermal and 3. Age (Anti-Aging) Tourism.

These tourism types include numerous sub-themes in Uzbekistan, for example, sports tourism can be developed in about 15 different branches, football, athletics, horse racing, cycling, and so on. On the other hand, gastronomy tourism, is a noteworthy subject that needs to be developed by considering all types of tourism with separately.

2. EDUCATION AND HEALTH TOURISM IN UZBEKISTAN AT A GLANCE

Rapid and widespread developments about communication and transportation technologies in the last three decades; helped individuals to meet their education and health necessities in the country of their preference. Thus, with the increased cooperation between the states and the easier visa regimes after the cold war, some countries had the opportunity to export in education and health services.

Educational tourism is a kind of tourism that occurs when people travel to another country to improve themselves in a certain field, learn new concepts and make a career. When we examine the tourism literature, we see that education tourism is defined as a program that includes the travel of a person or group for a learning experience in a particular region.

Participants in education and health tourism need to stay in the country of destination longer than other tourism types. In general, education in a foreign country can last from a few weeks to 300 weeks. In a foreign country, applying to health institutions and receiving treatment may continue for several weeks and require travel to that country multiple times. Relatives are also involved in traveling, especially to help those traveling to another country for Health. On the other hand, those who go to long-term education in a foreign country visit their relatives and sometimes invest in the country through the purchase of housing.

In every kind of tourism, there is a need for buildings and facilities suitable for the theme, infrastructure and superstructures, as well as school and university facilities with sufficient comfort for educational tourism, and teachers and scientists who train qualified students in science branches. For health tourism, there is also need for a good health facility, successful doctor and a well-functioning management system with treatment. In addition, the student and the patient; the desired education and treatment, and transportation, accommodation and food and drink survival, the country in which it intends to go should have easy access to information.

Educational tourism with its size in recent years includes; applied education, theoretical education, exchange of students and teaching staff (such as *Erasmus* or *Farabi* programmes) profession or self-development education and training activities. People go to other countries to attend college,

university, to obtain bachelor's, master's, doctorate degrees and other postgraduate education schedules, some of them are travelling to study at language schools, and some to attend internship schedules. Employers, professionals or employees participate in training programs prepared to learn new developments in their field. In addition, people who are living under the intense traffic pressure in big cities, working under the intense stress in the plazas in the company centers, improve such tourism by participating in courses organized in various subjects in order to relax in nature during the holidays. Lifelong learning is a major motivating factor for many tourists over the middle age. Nowadays, participants in educational tourism want to be more educated, have more academic ideas, and obtain more local information about the environment and culture. In order for learning to take place on the educational journey. the tourist must encounter information and experiences that are different from the experiences of their daily life. Educational tourism has a wide range from individual self-discovery courses to formal, academic credit courses. International learning, provides the students; an openness, tolerance and respect, a sense of responsibility towards oneself, others and the environment. Based on these definitions, education tourism can be divided into two sub-titles; 1. Formal / organized (at school) Education, 2. Common Education tourism.

Formal (School) Education Tourism consists of; College, University bachelor, master, doctorate and scientific research programmes,

Non-Formal Education Tourism consists of; Professional and individual development trainings (courses), local food making, carpet-rug weaving, ceramics and local souvenirs production, local music and painting education, such as growing vegetables, handcrafted culture and art courses.

Educational tourism, not like some other types of tourism, is not affected by seasonal risks. Since college and university visitors will stay in the city where they attend for a long time, it makes a great contribution to the local community, positively affects the sales of the tradesmen, students contribute to the home economies and general economic welfare by renting a house and board. Educational tourism also creates awareness among people, allowing people to recognize different cultures and characters from different regions. With the cultural interaction, it leads to the reduction of various hostilities which are artificially placed among societies. Educational tourism also makes important contributions to the economy of countries. There is a small example; Approximately 40% of the Turkish North Cyprus economy is fed from by educational tourism with six universities.

According to UNESCO (2019) reports, there are over 4 million people outside of their home country for college and university education. We can say that more than five million people participate in "education tourism" yearly together with unregistered graduate and doctoral researchers and those in countries whose statistics cannot be reached.

Over the past three decades, we have witnessed the increase in the number of tour operators and travel agencies offering educational tourism packages to school groups, college or university students. Simultaneously, the rise in lifelong learning and the increasing healthy retirees with disposable income from age group three are also expanding educational tourism in many countries. Accordingly, it is observed that international tourism exhibitions are increasing in the fields of Education Tourism and Health Tourism. Some figures on educational tourism by leading countries are shown in the below.

The top ten most preferred countries for education are; US, Britain, France, Australia, Germany, Russia, Japan, Canada, China, Italy, and Turkey.

The top ten countries sending the most students abroad are; China, India, South Korea, Germany, Saudi Arabia, France, US, Malaysia, Vietnam, Iran, and Turkey.

As for Uzbekistan: The number of foreign students who came to Uzbekistan in the 2017/2018 academic year increased from 1,320 to 2,685 in the 2018/2019 academic year. The countries that send the most students to Uzbekistan are; Turkmenistan, Russian Federation, Kazakhstan, Kyrgyzstan, Belarus, Moldova, Tajikistan, Ukraine, Azerbaijan, and Armenia. Whereas, there are 3,820 Uzbekistan citizens who go to other countries for undergraduate and graduate education.

Uzbekistan Tourism Development State Committee Report (2019) asserts that although there are five travel agencies that provide student transfer services from Uzbekistan, there are no agencies working to bring students from abroad to Uzbekistan. There is a missing intermediary in the service.

When it comes to health tourism; this is the event that people who traveling to different countries in order to receive health services. According to the World Tourism Organization (2013) health tourism is the visits to hot springs or other health centers to improve the physical wellbeing of the person. In another definition, health tourism is expressed as the whole of the events and relationships that occur in accommodation, travels and organizations that include holiday, for strengthening or maintaining health (Gencay, 2007).

The health tourism market has the highest growth rate among the world tourism industry (Kilavuz, 2018). The people with the need of aesthetic surgery operations, organ transplantation, dental treatment, physical therapy, rehabilitation are the people who use the services of international health institutions. More than 30 countries in Asia, Africa and Eastern Europe are active in health tourism. When we look at health tourism India, Thailand, Singapore, US, Malaysia, Germany, Mexico, South Africa, Brazil, Costa Rica and Turkey are emerging as the leading countries (Taleghani et al., 2011). Usually health tourist that flow towards to Turkey, Asian and Latin American countries are from the United States, Canada and the Western European countries (Yalçın & Çalık, 2014).

Demand in the medical tourism market is concentrated in three regions: North America, Western Europe and the Middle East, while the favorite countries of European health tourism visitors are India, Malaysia and Thailand. Malaysia dominates the Middle East market because of its Islamic reference. Singapore is the country of choice for the Japanese market. Cuba is directed to the Central American market. Since the 1970s, Jordan is the popular country in the health industry within Middle Eastern and Asian region. In medical tourism in Turkey; eye and dental surgery, IVF applications, aesthetic and plastic operations, cardiovascular diseases are the most preferred treatments in health tourism (Ünal & Demirel, 2011).

In terms of thermal tourism, Germany, Austria and Hungary are among the most important European countries. There are developed therapeutic spa centers in Germany, the Czech Republic and Slovakia. In addition, there are thermal facilities in France, Spain, and Italy and numerous cure centers in Russia.

In 2018/2019, the number of patients coming to Uzbekistan from abroad for health tourism is around 54,000. Patients coming to Uzbekistan mostly requires dental treatment, as well as asthma, Rheumatism, Lung-Heart and general treatments. Although there is no travel agency working to bring patients to Uzbekistan, ten agencies provide services to bring patients abroad (Hopkins et al., 2010).

Health tourism is an economic activity that connects two different sectors such as health and tourism and takes place with the providing services. Due to the vital feature of health services, those who participate in health tourism spend high amounts

There are three types of tourism in the health sector in general:

Medical Tourism: The type of health tourism in which international patients receive services from health institutions for treatment and rehabilitation.

Thermal Tourism and Medical SPA: Health tourism in which spa waters, hotel management and senatorial services are performed along with some complementary medicine applications such as medical massage and peloid.

Retired and Elderly Tourism: It is a type of health tourism in which the maintaining healthy life of retirees, care, rehabilitation and medical treatments of the elderly and disabled are together.

JCI Hospital Accreditation

It is very important that the facilities which will participate in medical tourism obtain the certificate from JCI accreditation institution in order to give confidence to the patient. JCI is a non-profit unit of the International Commission for Accreditation (JCAHO).

JCI accreditation is expressed as the gold standard for global health care and based on the principles of total quality management of the quality systems of health institutions. JCI examines the health facility and aims to develop its organization's ISO 9001 quality assurance network under this model.

3. CULTURE AND ENVIRONMENT TO IMPROVE EDUCATION AND HEALTH TOURISM IN UZBEKISTAN

It is a great advantage to have cultural backgrounds of these services in countries and societies that will work in Educational Tourism and Health Tourism. Uzbekistan and Uzbek people are the heirs of a geography in which ancient science and health services had been very developed in ancient times. The following names in Table 1 were the best in the world in the sciences they studied at that time.

Table 1. Well Known Scientists of The Region

El-HAREZMİ	(780-850)	Algebra, Mathematics, Astronomy, Geography
El-FERGANİ	(797-860)	Stars and Astronomy
El-BUHARİ	(810 -870)	Hadith and Religious Sciences
El-TERMİZİ	(824-892)	Hadith and Religious Sciences
El-FARABİ	(870-950)	Politics, Public and Community Management, Philosophy
EL-MATURIDI	(870-944)	Theology, Sociology and Philosophy
El-BİRUNİ	(973-1040)	Astronomy, Mineralogy, Physics, Chemistry
IBN-İ SİNA	(980-1037)	Logic, Mathematics, Physics, Metaphysics, Politics, Philosophy, Ethnography, Geography, History, Medical Laws, Surgery
EMİR TİMUR	(1336-1405)	Politics, Public Administration, History, Philosophy
ULUĞBEY	(1394-1449)	Astronomy, Mathematics, History, State and War Administration
El-BİRUNİ	(973-1040)	Medical Science, Pharmacology

Such valuable people who have influenced their own age in science have grown up among numerous of scientists in the century in which they lived and served humanity with new methods and new theories. Harezmi's algorithm, Ibn-i Sina's medical laws and Bukhari's hadith transfers still add value to human and social life in medical applications and IT technologies in the world of science and management. In order to learn science from these people, it can be said that a large number of followers came to the Khorezm, Bukhara, Samarkand and Tashkent regions from the neighbouring countries, forming a type of educational tourism.

3.1. Facilities, Infrastructure and Other Components in Education and Health Tourism

Colleges, universities and other educational facilities to which foreign students will be accepted to constitute the important infrastructure of

Educational Tourism. The most important component of educational tourism are faculty and teachers. The most important reason why a foreign student chooses that country is to take courses from highly qualified faculty members. A modern learning program and effective management of the system are other reasons for preference.

In health tourism, modern hospitals, surgical units and surgeons and doctors who are renowned in their branches are among the most important causes of patient attraction. Assistant doctors and nurses who know the language are also important components of health tourism. Cost effective treatment with effective hospital management is another reason for choice. In recent years, the most important reasons for the widespread trend towards Turkey from European, Middle Eastern countries and Russia for heart and kidney surgery, upper respiratory tract and in the plantation issues with cosmetic surgery, are the successful medical practices and reasonable prices.

3.2. Transportation to Uzbekistan from Abroad

Easy access to the country is seen as another important reason for education and health tourism. Uzbekistan has the potential of students and patients coming from the border neighbors by road. In addition, geography that does not exceed four hours by plane should be seen as the main market for education and health tourism for a country. When the long education and post-treatment processes are taken into consideration, students and patients prefer cities that do not exceed 3-4 hours by plane. Special advertisement and introduction as well as transportation activities will be needed in order to receive students and patients from the geography exceeding four hours by plane. For Example; Airlines flying from South East Asian countries such as Philippines, Indonesia, Malaysia, Singapore to Europe, currently use Dubai as a transit airport. While flying between South East Asia and Europe, as a transit airport Tashkent is shorter 2,340 Km and 850 Km than Dubai. This means less than one to three hours of flying. For airlines and passengers an average of two hours short flight is more advantageous in terms of operational costs, alternative gains and health.

Hong Kong-Tsknt-Paris 10.884Km Shorter-1.938Km

Hong Kong-Dub-Paris 12.822Km

Shng-Tsknt-Paris 10.960Km Shorter-2.340Km

Shng-Dub-Paris 13.300Km

KUL-Tsknt-Paris 11.556Km Shorter -851Km

KUL-Dub-Paris 12.407Km

In terms of shortness and transit airport of flights between South East Asia and Europe, Tashkent's alternatives are Istanbul and Almaty cities (Uysal Şahin & Şahin, 2019).

3.3. Accommodation and Other Living Needs

The most important infrastructure in education and health tourism is the convenience of access to accommodation, library, shopping, entertainment and general living areas and other needs such as pharmaceuticals and medical treatment products. The student and the patient prefer to stay in a home environment rather than a hotel or similar place. Furnished small houses and homestays have been widely adopted in western countries, particularly in education tourism.

4. CONCLUSION

The current situation in the world tourism industry and tourism types, rising international needs and demand in these areas, domestic and foreign opportunities and potential of Uzbekistan in Central Asia seem to be suitable for development in education and health tourism. In the light of these evaluations, I would like to draw attention to the importance of the following issues in the development of Education and Health tourism in Uzbekistan:

- Establishing, **Uzbekistan Educational Tourism Council** with the participation of Ministry of Secondary Education, Ministry of Higher Education, State Committee for Tourism Development, Ministry of Foreign Affairs, Religious Affairs Board, Provincial Municipality, Association of Travel Agencies, Ministry of Transportation, Ministry of Interior, Youth-Student Union and related organizations.
- Establishing, **Health Tourism Council of Uzbekistan** with the participation of Ministry of Health, Ministry of Foreign Affairs, State Committee for Tourism Development, Chamber of Physicians, Association of Pharmacists, Ministry of Transport, Workers' Conciliation and Senatorial Enterprises, Association of Travel Agencies and related organizations,
- Establishing, **Tourism Department** in Ministries and related organizations those within the Tourism Industry System of Uzbekistan,

- Working on the education system of the future and health systems of the future by the Uzbekistan Educational Tourism Council and the Health Tourism Council, while preparing 2035 Development and Action Plan for both types of tourism,
- Supporting promotional programs such as films, TV series and theater about medical history and health tourism, history of science and social science and education tourism in Uzbekistan,
- Determining areas that have geothermal resources, which can be declared as "Tourism Center" and/or "Culture and Tourism Conservation and Development Zone", complete their physical plans and allocate them to tourism investors,
- In cooperation with the State Committee for Tourism Development, the Ministry of Health and Workers' Settlement Sanatorium Enterprises, the thermal tourism centers will be given the characteristics of international health tourism.
- Development of the necessary infrastructures (faculties, facilities, libraries) and superstructures (faculty members, preferred course programs, social environments) for the students to come to Uzbekistan for undergraduate, graduate and doctoral education,
- Conducting comfort-enhancing activities in road transportation with neighboring countries,
- Starting flights to Tashkent from the capitals of the countries which are four hours away by air in the first place, studying the possible direct or indirect flights from and to the further countries,
- Supporting the projects to be carried out by themed organizations taking Our Libraries and Museums from "passive position" waiting for the visitor, to the "active position" that attracts visitors from home and abroad.
- Establishment of a homestay system with student accommodation under the coordination of the provincial municipality,
- Supporting Existing tourism enterprises; for the integration of health, fitness and personal development training units such as gastronomy, wellness, thalasso therapy, thematic courses that belong to Uzbekistan-specific subjects,
- Tourism Emergency health units and general health centers in our provinces; strengthening with Qualified physicians and auxiliary health personnel, also a fast-effective functioning health

management system, space and technical equipment for diagnosis, treatment and post-treatment,

- Encourage the production of medical devices used in treatment and post-treatment in Uzbekistan,
- Schools, Universities, Hospitals, Sanatorium and other education and health tourism components should participate in international education and health exhibitions.
- Establishment of Education Tourism and Health Tourism segment in Tashkent Tourism Exhibition.

REFERENCES

- 1. GENCAY, C. (2007). "Tourism Sector in Achieving Sustainable Competitive Advantage", In Health Tourism (172-180). BULU, M. and ERASLAN, İ. H. (Ed.). Istanbul, Kazancı Law Publishing House.
- 2. HOPKINS, L., LABONTE, R., RUNNELS, V. & PACKER, C. (2010), "Medical Tourism Today: What is The State of Existing Knowledge?", Journal of Public Health Policy, 31 (2), pp. 185-198.
- 3. KILAVUZ, E. (2018). "Medical Tourism Competition: The Case Of Turkey", International Journal of Health Management and Tourism 3 (2018), pp. 42-58.
- 4. TALEGHANI, M., CHIRANI, E. & SHAABANI, A. (2011). "Health Tourism, Tourist Satisfaction and Motivation", Interdisciplinary Journal of Contemporary Research in Business, 3 (4), pp. 546-556.
- 5. ÜNAL, A. & DEMİREL, G. (2011). "A Research in Bolu Province to Determine the Expectations of Customers Benefiting from Health Tourism Enterprises", Electronic Journal of Vocational Colleges, December, pp. 106-111.
- 6. UNESCO (2019). Global Education Monitoring Report Summary 2019: Migration, Displacement and Education: Building Bridges, Not Walls, https://unesdoc.unesco.org/ark:/48223/pf00002659 96.
- 7. UYSAL, Ş. & ŞAHİN, M. (2019). "Türkiye'de Sağlık Turizminin Potansiyeli ve Geleceği: SWOT Analizi", Journal of Awareness 3 (2019),pp. 287-300.

- 8. Uzbekistan Tourism Development State Committee Report, 2019
- 9. YALÇIN, B. & ÇALIK, İ. (2014). Sağlık Turizminin Sürdürülebilirlik Kriterleri Açısından İncelenmesi,

https://www.researchgate.net/publication/3124956 85.