



NEW SEARCHES AND STUDIES IN SOCIAL AND HUMANITIES SCIENCES

EDITOR:

ASSOC. PROF. DR. AYŞE ÇATALCALI CEYLAN



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e-mail: seruvenyayinevi@gmail.com

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Chapter 1

ASSIMILATION AND FORCED MIGRATION: THE 1989 MIGRATION OF BULGARIAN TURKS

Filiz Tufan EMİNİ¹

Gamze AYDIN²

¹ Assoc. Prof. Dr., Çanakkale Onsekiz Mart University Biga Economic and Administrative Sciences Faculty, filizemini@hotmail.com
ORCID: 0000-0002-9040-0811

² Graduate Student, Çanakkale Onsekiz Mart University, ORCID: 0000-0002-4065-9892

1. INTRODUCTION

Migration is a phenomenon in which people have to leave their area of residence for political, economic, social and religious reasons, voluntarily or compulsorily (Yalçın, 2004), temporarily or permanently. Therefore, migration is a mobility that should be handled on the basis of social dimension (Yorulmaz, 2012: 7). One of the most tragic periods of immigration in the historical process was the period when Bulgarian Turks were subjected to forced migration in 1989. As a result of the pressure exerted in Bulgaria during the Zhivkov period, Turks were forced to leave all their assets in Bulgaria and return to their homeland, as they faced the risk of losing their identity. Within the scope of these pressures, Turks were forced to change their names by force and choose Bulgarian names, and the banning of Turkish speaking was a matter of time. These issues continued with the bans on Turkish education and the fulfillment of religious obligations, and prohibitions such as the closure of mosques, the collection of the Qur'an and the confiscation of all religious books were imposed. It is stated that those who do not obey these prohibitions are left in fear and anxiety, as well as some criminal sanctions are applied. Some of these sanctions have taken place in such ways that the Turks were sentenced to exile to the most remote parts of Bulgaria, to the extent of repression and murder.

The Bulgarian Turks had to cope with the persecution and oppression that started in 1984 until 1989. The process ended with the forced migration to Turkey beginning in 1989. One of the most important reasons for this migration has been the concern of the rapidly increasing population of Turks among the Bulgarian people. Fearing that the Turks might want their autonomy, the Bulgarians decided to establish a uninational Bulgaria and embarked on a policy of assimilating Turkish citizens. The aim of this study is to examine the migration in 1989 from Bulgaria to Turkey. In this context, the pressure exerted on the Turks by the Bulgarian government, the policies applied, bans and sanctions, the obligation to change names within the scope of the assimilation policies made by the Bulgarians against the Turks, the ban on speaking Turkish and Turkish education, the ban on the fulfillment of religious obligations and the problems of exile, and the reasons, consequences and post-migration of 1989 immigration. the situation will be discussed.

2. PROBLEMS OF TURKS BEFORE 1989 IMMIGRATION

When the historical process is examined, it is seen that there is a serious Turkish settlement in the territory of Bulgaria. Turks living in Bulgaria had to migrate from time to time for different reasons. The

latest wave of these migrations is the forced Turkish migration in 1989 (Hacısalıhoğlu, 2012: 171-198). The reason for this migration is the name changing policy implemented by Bulgaria in 1984 in order to assimilate the Turkish minority. Therefore, the reason for the forced migration of the Turks is the Bulgarian government's tendency to become one-nation (Bulgarian) and try to dissolve the Turks by assimilating them on the basis of these policies.

Zhivkov, who was in charge of assimilation policies, tried to transform Bulgaria into a socialist and homogeneous state. In this process, Turks were tried to be Bulgarianized and assimilated in every field, and this process was called the process of rebirth. The rebirth process lasted until March 1989 (Şirin, 2011: 360). Between 1984-1989, with the policies of the Bulgarian Communist party, Turkish minorities were forced to be Bulgarian. In this process, Turks who lived in Bulgaria were claimed to be actually Bulgarians (Kayapınar, 2012), and even articles were written about the Bulgarian ancestry of Turks. With newspapers and conferences, Turks were tried to be made to believe that their originals were Bulgarian (Atasoy, 2011: 89). The basis of these policies is that the Turkish population being more than the Bulgarian population makes the Bulgarian government anxious. In order to get rid of this anxiety, the Bulgarians decided to implement the assimilation policies they had also applied in the previous periods and started a rapid Bulgarianization process as of 1984. In this context, they applied pressure policies to reduce the Turkish and Muslim population, which they considered as a danger, and forced the Turks to migrate.

There are also psychological and social factors among the factors that cause migration. Political and religious pressures are such factors (Mutluer, 2003: 13 and Yalçın, 2004: 108). The ban on speaking Turkish, the closure of Turkish schools, the closure of mosques and the prohibition of prayers are other important factors following these pressures. With all these oppression and cruelty practices, Muslim customs and traditions were tried to be dissolved (Çetin, 2010). Criminal sanctions were imposed on those who did not comply with these practices, and those who opposed were either murdered or sentenced to prisons or concentration camps (Ağanoğlu, 2001). With all these decisions taken, the foundations of the assimilation policies applied to the Turks were laid (Sabev, 2012: 128) and after the assimilation process, identity problems started to occur (Öztürk and Korkmaz, 2017: 3). Assimilation policies, the issue of renaming, the issue of Turkish speaking and education prohibition, the issue of religious and cultural prohibitions, and the issue of exile are discussed in detail below.

2.1. The Issue of Name Changing

The first reason for the Bulgarian immigration was the name changing policy (Gündüz, 2013: 1-9). Although many attempts were made to change names in Bulgaria until December 1984, the most terrifying was the forced name changing policy applied to Turkish minorities. The Bulgarians, walking on the Turkish masses, started to implement the policy of changing the name in a bloody and violent way (Yorulmaz, 2012: 3).

With the practice of name changing policy, the Turks were asked to take the Bulgarian names and a persecution and pressure started in this direction. During this period, towns and villages where Turks lived were blockaded by Bulgarian police (Zafer, 2018: 4). Although those living in villages and those who did not want to change their names started to flee to the mountains, this was not a solution (Demirhan, 2019: 16). In this sense, an ethnic terror has been practiced on Turks living in Bulgaria. Despite the persecution of diplomatic negotiations between Bulgaria and Turkey, pressures are not diminished. With this policy, it was aimed for all Turks to change their names by force (Demirhan, 2019: 16). In this context, the decision to change the names of all Turks to Bulgarian names was officially implemented on 10 December 1984, Bulgarian authorities collected passports and initiated the name changing process (Atasoy, 2011: 110). Name changing policy was put into action in as little as three months between December and February. This policy was called “Lightning Operation” because it took place in a short time.

In 1985, the Speaker of the Parliament, Todorov, stated that Bulgaria is a single-national and homogeneous state by using the words “The procedure for citizens to take back their Bulgarian names instead of Turkish-Arabic names was carried out safely. During this period, efforts to get the Turks to accept their new names continued, and those who did not accept it were given a period of time. Since the Turks did not want to lose their jobs and face any difficulties with the government, they had to accept Bulgarian names. During the name changing process, the soldiers raided the villages, controlled the entrances and exits, and cut off all communication networks and contacts. Afterwards, all the people gathered were taken to the mukhtar’s office, forced to choose names from a list with Bulgarian names, and a petition was signed that the Turks wanted to change their names voluntarily. Those who resisted and did not want to change their names were exiled to prisons and concentration camps (Ersoy and Hacısalıhoğlu, 2012: 188). In this process, those who resisted to change their names were also prohibited from benefiting from health services and banking services.

During this period, some Turks started to convey the forced name changing policy to the world public opinion via letters. For this reason, January 1985 is the date when the oppression and the events that the Bulgarian Turks faced were reported to the world press (Ersoy and Hacısalıhoğlu, 2012: 188).

2.2. The Issue of Banning Speaking Turkish and Education in Turkish

The prohibition of Turkish language is one of the most important assimilation policies. Mother tongue is the most important element of ethnic identity that expresses the thought reflecting the national feeling and has a unifying feature for the society.

In Bulgaria, as of December 1984, a ban on speaking Turkish in public places, including daily life, was introduced. Workplaces run by Turks were obliged to hang signs stating that speaking a language other than Bulgarian is prohibited in the workplace, and fines were imposed on those who did not obey the ban. The reason for the penalties was shown to disturb the peace of the society. Fines were followed by salary cuts and dismissals, and the size of the punishments was extended to imprisonment and exile. Theaters were closed during this period. Turkish newspapers and magazines with the published books and newspapers in Turkey are prohibited to enter in Bulgaria. Turkish broadcasts on radios are completely blocked. All Turkish books were collected and even listening to Turkish songs was prohibited (Gündüz, 2013: 1-9; Demirhan, 2019: 16).

2.3. The Issue of Religious and Cultural Prohibitions

With the ban on speaking Turkish and Turkish education, the Bulgarian government initiated efforts to prevent the religious duties of the Turkish minority and prohibited the free practice of religious duties. Turks who violated the prohibitions were exposed to exile and the threat of being killed (Atasoy, 2011: 89; Gündüz, 2013: 1-9). Religion has heritage status in terms of prayers, holidays and similar situations. The religion of Islam is in a position to protect the Bulgarian Turks, so Bulgarians saw Islam as a threat. In this framework, policies to cool off religion were followed, and religious education remained quite insufficient (Erdi, 2009: 29).

In addition to these, the Bulgarian government has also applied religious sanctions. In this process, Muslim prayers were banned, the Qur'an and other religious books were collected, mosques were closed (Kayapınar, 2012), and even mosques were seriously damaged. During this period, mosques were neglected, most of them were demolished and closed. The closed mosques were turned into schools and warehouses and thus very few mosques were left for worship purposes (Erdi, 2009: 29).

During this period, the clergy was dismissed and replaced by Bulgarian clergy. In addition, the observance of Islamic obligations is prohibited not only in mosques but also in schools and homes. For example, a ban was imposed on reciting the adhan, the Qur'an in homes were seized, and citizens who went to the mosque were dismissed from their jobs. Thus, Islam was tried to be weakened (Erdi, 2009: 29). Moreover, in 1980, a ban was imposed on Turks to take their bodies to the mosque, followed by a requirement for Muslims to be buried with sarcophagus. In order to comply with this condition, Bulgarians kept watch at the beginning of the funerals until they were buried, and it was strictly controlled by the Bulgarians whether all prohibitions were circumvented.

The Bulgarian government has tried to keep the Turks under constant pressure, leaving them in fear and anxiety. They frightened the Turks with sudden raids, threats such as cutting their way and death, raised the concern of massacres by taking up arms on the Muslim people, and caused serious anxiety among the Turks. In addition, Turkish women were disturbed during this process, and the Muslim people had to remain silent due to the fear of damages to their honor and chastity. In this process, Turks had to cut off their connections with their property with fear of their lives and migrate to Anatolia (Köse, 2006: 246).

2.4. The Issue of Exile

Zhivkov, the head of the Bulgarian government's parliament, said in a speech in 1985 that the Turks should be exiled by not allowing the Turks to request immigration, and it was announced that the Turks would be sent to the most remote areas of Bulgaria within three to four hours. Thus, Turks resisting the applied assimilation policies, started to leave their homelands and be sent to other provinces. Between 1984 and 1986, more than ten thousand people were sent to exile.

The issue of deportation of Turks was first mentioned by Turkish official authorities at the Foreign Ministers meeting in New York in 1985, by the then Minister of Foreign Affairs Vahit Helefoğlu. In his speech, Helefoğlu used the following sentences while talking about the exile of Turks in detail and dominantly: "The information we received is that the number of Muslim Turks in this concentration camp is around five thousand. In addition, twice as many people are being held in other camps". Although it was pointed out at the meeting that this exile situation concerns all Muslims, Bulgarians did not end the exile, and especially Turkish speakers were sentenced to exile (İnginar, 2012: 47).

3. MIGRATION FROM BULGARIA TO TURKEY

Republic of Turkey between the years 1984-1989 has taken action against the oppression of their compatriots living in Bulgaria. In this context, high-level attempts were made in 1985 to end the pressures. In some provinces of Turkey, protests were held against the persecution in Bulgaria. For example, marches were held, protests were organized, statements were published by associations, universities and professional organizations. Despite these developments, the migration problem has not been solved. Turkey protested Bulgaria's attitude and applied to international institutions (Yıldırım, 2018: 66). After that, in 1989, Bulgarian Parliament released the travels of Bulgaria (İnginar, 2012: 149) and has urged Turkey to open its doors to Turkey. Prime Minister of the time Turgut Özal announced that he opened his doors to Turks living in Bulgaria. Upon these declarations, Bulgaria started piling up Turkish citizens on the border on 1 June 1989. After 1989, More than 300,000 Turks living in Bulgaria, has inevitably begun to be sent to the Turkish border. At the beginning of the migration process, Turks were allowed to pass only with their handbags (Tekin, 2019: 13), but later they were allowed to take portable items. However, serious difficulties have occurred in this transition density. The Turks were kept waiting in the concentration camps for days, and the risks of epidemics occurred as a result of the unhealthy conditions in the camps. In this process, the only communication tool that people could communicate with were the boards at the border gates (Atasoy, 2010: 10).

Bulgaria's government has thought that Bulgarian Turks would agree on the conditions but Turkish citizens have returned to their homeland: Turkey. Since the Turks living in Bulgaria fulfill many important functions as workers, the Bulgarian economy has been dragged into a crisis after the immigration process (Çetin, 2008).

Until the year 1990; 345.960 Turkish citizen has entered Turkey (Şimşir, 2012: 447). The camps in which Bulgaria persecuted the Turks are Belene concentration camps. These camps are places where Turks are subjected to torture during the assimilation process. Turks were waited here for reasons such as speaking Turkish, being Muslim and being circumcised. However, despite all this persecution and torture, the Turkish people did not surrender to them and claimed their own identity.

4. THE SITUATION AFTER 1989 MIGRATION

Immigrants in the post-migration, settling with relatives in Turkey and / or have begun to be set by the government (Balmumcu, Akgün and Dişbudak, 2012: 2). In this process, Turkey have difficulty in finding work and in meeting the needs of citizens who entered the country. For

this reason, Turkey closed the Kapıkule border gate in August 1989 and started a visa application (Kocadaş, 2016: 11).

Compatriots who came to Turkey after migration has begun to settle in the cities. In addition, some projects related to the settlements of immigrants have been initiated and these projects have been implemented in villages and cities. However, projects have failed, especially in rural areas. Most of our cognates had to migrate to cities due to reactions and climatic conditions. The provinces with high density are generally Istanbul, İzmir, Ankara, Eskişehir, Bursa (Kocadaş, 2016: 11).

Following the public announcement of the persecution and oppression of Bulgaria against Turks, the assimilation process was reacted with condemnations. Condemnation rallies were held in the country. Trakya University has published an announcement that it condemns “Bulgarianization movements”. Trakya University made the following statements in its announcement: “As a nation, we regret to perceive the inhumane treatment of the Bulgarian government against our kinsmen.” In the announcement, it was also emphasized that Turks should be free to learn the Turkish language and fulfill the duties of the religion of Islam. In addition to all these, genocide and torture of the Bulgarian Turks was also mentioned, and it was emphasized that the policies and activities applied were inhumane. Similarly, Ankara University was not indifferent to assimilation policies. Ankara University, in its announcement, stated that the torture and oppression applied to the Turks have reached a very large scale and announced the pressure and torture applied to the public. The statement draws attention to the following words: “Turks in Bulgaria are in minority status in accordance with international law rules and existing agreements between the two countries. Despite this, Bulgaria insists on these practices. “ At the same time, the assimilation practices of Bulgaria have been condemned by stating that “Bulgaria acts systematically against the Turkish minority and does not give duty to Turkish descendants who employ the Turks in the heaviest jobs”. In this process, condemnation rallies were also held against the assimilation policies implemented by Bulgaria, and the condemnation meetings continued regularly, with the Turkish people being sensitive to the 1989 immigration. Over time, these pressures and violence practices have been condemned in various countries (İnginar, 2012: 47).

During and after the migration, the concepts of home and hometown of the immigrants have changed. The main reason for this is the socio-economic situation and characteristics. After migration, while the older people does not trust the Bulgarians, younger immigrants have been thinking that Turkey has not meet their

expectations and they were willing to go to other countries (Balmumcu, Akgün and Dişbudak, 2012: 2).

In Bulgaria, after the 1989 immigration, President Zhivkov's duty ended and democracy started. This situation created a hope for Turkish citizens, the Turks reclaimed their rights, so Turkish speaking, worship and naming rights were re-recognized. There have also been some partial developments in education. Although Turkish was not a compulsory native language in education, minorities were given the right to learn and speak their own language in 1991 (Çolakoğlu, 2015: 69). Afterwards, Turkish education started in 1992, but the fact that Turkish language could not be spoken or learned sufficiently led to a decrease in the vocabulary in time and the mixing of Turkish language with Bulgarian and forgotten over time. Turkish children had to learn their mother tongue as if it was a foreign language rather than their own (Çolakoğlu, 2015: 69).

After it has been announced that Turkey will open the border crossings, Bulgarian government have begun to give passports and people who took their passports are forced to migrate. During this period, while Zhivkov was sentenced to house arrest, some developments took place in terms of the religious and cultural issues of the Turkish minority. For example, mosques were re-opened, Turks were given their names back (Çağlayan, 2009: 25).

After 1990, Bulgarian Turks started to have visa problems. As a result, they started to cross to Turkey using tourist visas. There were also those who entered illegally across the Turkish border (Baklacioğlu, 2006: 113). When numeric data as the number of Turks who emigrated from Bulgaria to Turkey in 1996 was around one hundred and forty thousand by the year 2003, this number has exceeded to one million (Parla and Daniş, 2007: 64).

With Mladenov replacing Zhivkov, Bulgaria's new goal was to erase the traces of the oppressive policies applied to the Turks. With all these efforts, Bulgaria became a member of the European Union in 2007 (Çeçen, 2016: 29) and furthermore, after Bulgaria joined the European Union, it made statements condemning its assimilation policies (Çağlayan, 2009: 25).

5. CONCLUSION

This study aims to discuss the oppression and persecution applied by the Bulgarians (in 1984) in order to assimilate the Turks and to establish a unified Bulgarian government. The first of these oppression and cruelty is that the Turks are under pressure by the Bulgarian government and are forced to change their names through fear and anxiety methods.

After the Turks were forced to choose Bulgarian names under pressure by abandoning their Turkish names, a ban on speaking Turkish was also imposed, and Turkish language was banned in daily life and education. Thus, it was tried to make Turks forget their mother tongue. The words in the Turkish language and the words in the Bulgarian language have mixed together over time, and as a result, the language factor, one of the most important elements of ethnic and cultural identity, has been tried to be neutralized. These policies are a kind of identity forgetting applications. In addition, the ban on education caused Turkish children not to learn and speak their mother tongue.

In addition to these prohibitions, serious bans have been imposed on the fulfillment of religious obligations. As a result of religious prohibitions, the religion of Islam was tried to be forgotten and efforts were made to banish Muslims from the religion. In this context, mosques were closed, the Qur'an was burned, all religious books were collected, and even burial of corpses in accordance with Islamic conditions was prohibited. Those who rebel against the imposed prohibitions and those who do not want to comply are sentenced to exile, imprisonment, fines and even death. Turks were sent to the remotest places of Bulgaria with severe exile punishments.

During this period of oppression and inhumane persecution, we have had cognates who lost their lives. As a result of these pressures, the government of Bulgaria has requested Turkey to open border crossing to Turkey and the then Prime Minister Turgut Ozal has announced that Turkey opened the door to Turks in Bulgaria. Thereupon, an intense migration transition started at the Kapıkule border gate. But this transition has not been easy. Due to the intensity that occurred during the passage through the gate, Turks were kept in the camps and faced the risk of epidemic disease in the Bulgarian camps. In addition to these problems, Turks were allowed to pass only with their handbags while immigrating, and were prohibited from taking their movable property and selling their immovable properties. Apart from a very small amount of money at the border gates, their money was also confiscated.

After migration, economic problems in occurred in Bulgaria. As the Bulgarian Turks make up a significant portion of the workforce, Bulgaria has experienced economic problems and started to slide into a crisis. After the Bulgarian president Zhivkov was sentenced to house arrest, Bulgaria switched to a democratic rule. With the arrival of democracy, the rights that were taken away from the Turks were started to be given back, even partially. In this context, the ban on Turkish speaking and education was lifted, Turkish lessons were started to be taught as elective courses, albeit a little, and Turks, who were forced to change their names, had the right to gain Turkish names again.

Forced migration also led to certain problems in Turkey. The most important of these problems is the settlement of immigrants to cities and providing job opportunities. After the process and sanctions of Bulgaria's assimilation practices against Turks were made public, in Turkey, efforts were made to condemn assimilation. Universities, professional organizations and associations made condemnations and published statements in this area. In addition, condemnation rallies were held in the country.

One of the biggest reasons behind the Bulgarianization efforts and assimilation policies has been the intense population growth of the Turks. The increase in the population of Turks, almost twice as fast as that of the Bulgarians, aroused Bulgaria. The main reason for this concern has been the increasing possibility of Turks demanding autonomy over time. Acting with this fear, it is undeniable that the policies implemented by Bulgaria against Turkish minorities are inhumane and based on persecution. Culture and identity are important matters for nations. For this reason, it is a very grave and painful situation for a person to lose and forget his identity. The inability of people to live their names, their own languages and their own beliefs causes the loss of cultural identity and personality. Despite all the coercion, persecution and pressure, and the difficulties imposed, it is seen that the Turkish people show a serious and great resistance.

REFERENCES

- Ağanoğlu, H. Y. (2001), *Osmanlı'dan Cumhuriyet'e Balkanlar'ın Makûs Talihi: Göç*, Kum Saati Yayınları, İstanbul.
- Atasoy, E. (2011), *Bizden Olan Ötekiler Asimilasyon Kıskaçında Bulgaristan Türkleri*, MKM Yayıncılık.
- Atasoy, E. (2010), *Siyasi Coğrafya Işığında Bulgaristan Türklerinin 1989'daki Zorunlu Göçü*, İstanbul Üniversitesi, Edebiyat Fakültesi Coğrafya Bölümü Coğrafya Dergisi, 21(10), pp.1-17.
- Baklacioğlu, N. Ö. (2006). *Türkiye'nin Balkan Politikasında Rumeli ve Balkan Göçmen Dernekleri*. S. C. Mazlum and E. Doğan, (Ed.), *Sivil Toplum ve Dış Politika: Yeni Sorunlar, Yeni Aktörler içinde*. İstanbul: Bağlam Yayınları, pp. 77-117.
- Balmumcu, Ö., Akgün, G. and Dişbudak, C. (2012), *Göçmenlerin Türkiye'de Yaşamaya Devam Etme Kararlarının Sosyo-Ekonomik Belirleyenleri:1989 Bulgaristan Göçmenleri Örneği*, 4(2), pp.1-10.
- Çağlayan, S. (2009), *Bulgaristan Türklerinin 1989 Göçü Üzerine Bir Değerlendirme*, Sosyoloji Dergisi, 20(2), pp.25-41.
- Çeçen, B. (2016), *Bulgaristan'dan Türkiye'ye Gelen Düzensiz Göçmenlerin Yasallaşma Süreçlerinde Değişen Yasal Düzenlemelerin Rolü*, İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi, (29), pp.265-282.
- Çetin, T. (2010), *Bulgaristan'dan Göç Eden Nüfusun Dağılımını Etkileyen Coğrafi ve Kültürel Faktörler*, Ankara Üniversitesi Türkiye Coğrafyası Araştırma ve Uygulama Merkezi (TÜCAUM) VI. Ulusal Coğrafya Sempozyumu, 3 - 5 Kasım 2010, Türkiye, pp.71-82.
- Çetin, T. (2008), *Bulgaristan'daki Soydaşlarımızın Türkiye'ye Göç Etme Süreçlerini Etkileyen Bazı Değişkenlerin İncelenmesi*, Türk Dünyası İncelemeleri Dergisi, 8(1), pp.55-75.
- Çolakoğlu, B. (2015), *Bulgaristan'da Türkçe Eğitimin Serencamı*, Yeni Türkiye Dergisi, (69), pp.4439-4444.
- Demirhan, H. (2019), *Sözlü Anlatımlarla 1984-1989 Yılları Arasında Bulgaristan'da Türklere Uygulanan Asimilasyon Politikaları*, Rumeli'de Dil ve Edebiyat Araştırmaları Dergisi, (16), pp.274-284.
- Erdi, İ. B. (2009), *Sınırlar Ötesinde Türk Kalmak*, Ankara: Berikan Yayınevi.
- Gündüz, O. (2013), *Bulgaristan'dan Türkiye'ye Türk Göçü (1989 Örneği)*, Kırklareli Üniversitesi Balkan Araştırmaları Uygulama ve Araştırma Merkezi, (4), pp.1-9.
- Hacısalıhoğlu, E. (2012), *1984-1985 İsim Değiştirme Meselesi ve Uygulamaları. 89 Göçü*, Bulgaristan'da 1984-1989 Azınlık Politikaları ve Türkiye'ye Zorunlu Göç, İstanbul: Yıldız Teknik Üniversitesi Balkan ve Karadeniz Araştırmaları Merkezi, pp.171-198.

- Hacısalıhoğlu, M. and Ersoy, N. (2012), 89 Göçü-Bulgaristan'da 1984-89 Azınlık Politikaları ve Türkiye'ye Zorunlu Göç, İstanbul.
- İnginar Kemaloğlu, A. (2012), Bulgaristan'dan Türk Göçü (1985-1989), Atatürk Araştırma Merkezi Yayınları, Ankara.
- Kayapınar, A. (2012), Bulgar Tarihçilerinin Komplo Teorilerinden Örnekler ve Bunların Bulgaristan'daki Türk Azınlığına Etkileri, 89 Göçü Bulgaristan'da 1984-89 Azınlık Politikaları ve Türkiye'ye Zorunlu Göç, İstanbul: Yıldız Teknik Üniversitesi, pp.99-120.
- Kocadaş, B. (2016), Cumhuriyet Döneminde Yapılan İç ve Dış Göçlerin Toplumsal Etkileri, Sosyolojik Düşün Dergisi, s.1(1), pp.11-18.
- Köse, O. (2006), Bulgaristan Emareti ve Türkler, Türkoloji Dergisi, (2), ss.246.
- Mutluer, M. (2003), Uluslararası Göçler ve Türkiye. Kuramsal ve Ampirik Bir Alan Araştırması, Denizli/Tavas, Çantay Kitabevi, İstanbul.
- Öztürk, A. and Korkmaz, N. (2017), Bulgaristan Türklerinin Göç Süreci ve Göçmenlerin Türkiye'deki İskân ve İş Gücüne Dayalı Entegrasyonu, Bölgesel Araştırmalar Dergisi, 1(3), pp.268-289.
- Parla, A. and Danış, D. (2007-2008), Yeni Göçmenlerin Örgütlenme Biçimleri: Bulgaristan Türkleri, Irak Türkleri ve Moldovalılar Üzerine Karşılaştırmalı Analiz, TÜBİTAK Projesi.
- Sabev, O. (2012). 89 Göçü, Bulgaristan'da 1984-1989 Azınlık Politikaları ve Türkiye'ye Zorunlu Göç, Osmanlı Sonrasında Bulgaristan'da Yeniden Doğu Süreçleri. N. Hacısalıhoğlu, & M. Hacısalıhoğlu (Ed.), İstanbul: Yıldız Teknik Üniversitesi, pp. 121-137.
- Şimşir, B. (2012), Bulgaristan Türkleri, İstanbul: Bilgi Yayınevi.
- Şirin, N. (2011), 1989 Zorunlu Göçü ve Göçmenlerin Sosyal Entegrasyonu: Tekirdağ'daki Bulgaristan Göçmenleri Üzerine Bir Çalışma, Uluslararası Balkan Kongresi, Kocaeli Üniversitesi, 28-29 Nisan.
- Tekin, S. (2019), 1989-1993 Yılları Arası Bulgaristan'dan Türkiye'ye Zorunlu Göç İle Gelen Kişilerin Kültürleşmede Ruhsal Durum İle İlişkisi, Yakın Doğu Üniversitesi Sosyal Bilimler Enstitüsü Klinik Psikoloji Anabilim Dalı Yüksek Lisans Tezi.
- Yalçın, C. (2004), Göç Sosyolojisi, Anı Yayıncılık, Ankara.
- Yıldırım, B. (2018). Bulgaristan'da Türk Varlığı ve Nüfusu. İstanbul: İlgi Kültür Sanat Yayıncılık.
- Yorulmaz, S. (2012), 1984-1989 Yılları Arasında Bulgaristan Türklerine Yönelik Uygulanan Asimilasyon Politikaları ve Göç Deneyimleri, Maltepe Üniversitesi Sosyal Bilimler Enstitüsü Sosyoloji Anabilim Dalı Yüksek Lisans Tezi.
- Zafer, Z. (2018), Bulgaristan'da Zorunlu Asimilasyona Karşı Mücadele ve Kadın, International Journal of Social Sciences, 4(1), pp.1-11.



Chapter 2

DIRECTING REAL TIME MARKETING ACTIVITIES THROUGH SOCIAL NETWORKING SITES: THE IZMIR EARTHQUAKE EXAMPLE

Emrah Sİtki YILMAZ¹

¹ Asst. Prof. Dr., Gaziantep University, Gaziantep, Turkey, esyilmaz@gantep.edu.tr,
ORCID ID: 0000-0003-2741-4222

1. Introduction

Rapid developments in Internet and multimedia technologies make social networking sites an important part of cultural, social and economic life in terms of changing the way information is created, shared and transmitted (Duraismy, et. al., 2020; Apuke and Omar, 2021). This change strengthens the communication aspect of information, especially with social networking sites, while also revealing new consumer needs through emotional and visual experiences (Chen, 2020). In today's conditions, where the competitive environment is increasing and dynamic market conditions are effective, with the widespread use of the internet throughout the world, social networking sites based on communication focus, (Gaber, et. al., 2019; Sokolova and Kefi, 2020), are being used as the most effective way of searching and transmitting instant or process information during events such as politics, sports, diseases and natural disasters (González-Padilla and Tortolero-Blanco, 2020; Li, et. al., 2020). Social networking sites, as seen in the global Covid-19 pandemic process, in addition to being frequently used by individuals to access information, provide communication, follow all instant developments and seek rights in social issues, are also widely used by governments and authorities for many reasons such as making announcements, conveying developments, reporting the measures taken as well as sharing daily data numbers (Abd-Alrazaq, et. al., 2020; Depoux, et. al., 2020; Farooq, et. al., 2020). Social networking sites actively used by individuals as well as companies, are also seen as an integrag part of modern marketing strategies to promote their products and brand, to make sales, to provide benefits to stakeholders and other competitors for leadership in the sector (Kapoor, et. al., 2018; Ahmad, et. al., 2020; Jacobson, et. al., 2020). In addition to companies seeing social networking sites as a means of communicating with users or potential customers, they also adopt them as an opportunity in terms of establishing, maintaining, strengthening professional business relations and laying the foundations of long-term relations that constitute an element of mutual satisfaction (Cheung, et. al., 2020; Zollo, et. al., 2020; Krings, et. al., 2021). Social networking sites that companies strategically integrate into their marketing activities in order to draw the attention of consumers, arouse their interest, create desire and motivate, are widely used today in terms of shaping consumer perceptions by strengthening communication, increasing product and service performance and providing stronger branding (Hajli and Laroche, 2019; Yang and Che, 2020; Arrigo, et. al., 2021). The aim of the study from this point is the qualitative analysis of real-time marketing activities according to the evaluation criteria in the literature of tweets posted on "Twitter" by companies which were prominent in society during the earthquake disaster and ongoing process following the 6.6 magnitude earthquake which occurred on Friday, 30

October in İzmir as they were aimed at current events. Examining the earthquake disaster from different angles and determining for what purpose the situations encountered during the process were used by companies through social networking sites is another aim of the study.

2. Real Time Marketing

Real-time marketing, which is effective in building a highly engaged audience for companies; in literature studies, is defined as event-driven marketing that instantly connects with customers based on events that occur (Akbarpour, et. al., 2020). The real-time marketing concept, which is also expressed as the creation of digital content compatible with social networking sites based on current events, is described as one of the modern marketing strategies aimed at establishing meaningful connections with consumers and getting positive return from consumers (Mazerant, et. al., 2021). The convergence of the virtual and real world with the expansion of new mobile technologies and smart devices causes individuals to transfer all kinds of events and developments in the real world to the virtual world (Sung, 2021). Social networking sites, which, in addition to individuals, are frequently used by companies to support brand and sales strategies by integrating events and developments into digital content, provide great opportunities in market conditions where the competitive environment is quite high (Hinsch, et. al., 2020).

The inclusion of technology in modern marketing strategies creates a more effective and interesting acceptance situation by consumers, while providing a sustainable competitive advantage for companies beyond great financial profitability (Rauschnabel, et. al., 2019). Social networking sites, which are used by companies in particular to overcome their financial problems, growth barriers and problems in reaching more consumers with as little cost as possible, particularly with real-time marketing activities, allow you to carry out more effective promotion activities for products and brands and reach a larger number of customers with much lower advertising costs than traditional marketing strategies (Civelek, et. al., 2020). In addition, the use of social networking sites by companies as a part of their marketing activities gives them an innovative identity, while real-time marketing activities mediate their recognition and increase market share not only nationally, but also on a global scale (Omar, et. al., 2019).

Considering the limited number of literature studies examining the relationship between real-time marketing and social networking sites; In 2018, Yılmaz examined the social media posts made by car brands utilizing Twitter, Facebook and Instagram in real-time marketing studies for the film “Back To The Future Day” using qualitative methods based

on the sample screening model. In the study conducted in 2019, Aydın, Bişkin and Gürsoy carried out a qualitatively study of the tweets sent by companies on Twitter through social media interactions in order to contribute to the conceptual integrity of real-time marketing with its academic and sectoral dimensions and they concluded that features such as speed, creativity, the ability to produce the right content at the right time, differentiation, subject fitness, diversion, humor and meaningfulness should be included in real-time marketing strategies. In a study conducted by Bozkurt in 2020, content analysis was applied to Twitter Ads developed by brands that chose the power outage in 2015 as a topic on the agenda. According to the results of the study, which examined 70 real-time ads, the content characteristics of Twitter ads that brands generally prefer to use visual and text content together; it can be observed that they designed strategically correct advertisements that are compatible with the topic on the agenda. A study conducted by Baran and Öymen in 2020 examined the tweets sent by certain brands on Twitter for the television series “Game Of Thrones” and focused on real-time marketing strategies and compared the interaction rates of these tweets. As a result, they observed that brands have reached the most accurate target audiences related to their products or services thanks to the tweets posted.

3. Method and Analysis

3.1. Purpose and Importance of Study

On Twitter, where individuals can instantly share their feelings and thoughts, companies are also becoming more actively involved with each passing day. Twitter, which also occupies a very important place in communication, is also used by companies based on events that occur and is the most preferred social networking site within the framework of real-time marketing activities. In this context, the aim of the study is to examine the event-oriented tweets on Twitter, which are often used by companies in marketing strategies, from a qualitative point of view according to the criteria for evaluating real-time marketing activities contained in literature. The importance of the study is to determine the advantages of using social networking sites in modern marketing strategies for companies, and to determine of the value that would be generated by the positive use of real time marketing activities by companies towards events taking place in society.

3.2. Method and Analysis of the Study

Tweets posted by companies on “Twitter” during the 6.6 magnitude earthquake disaster that occurred in Izmir and its subsequent period, Were analyzed qualitatively in terms of evaluation criteria for real-time

marketing activities such as “the right time”, “the right message”, “continuity”, “appropriate message frequency” and “interaction” as determined by Levinson and Horowitz (2011) and Lieb (2013). As an example of this analysis, the video tweet shown in Figure 1, posted by the Republic of Turkey Minister of Health Dr. Fahrettin Koca regarding 3 year old Ayda Gezgin, who was rescued injured after 91 hours trapped under the rubble, ‘Ayda has no pain. She wants meatballs and ayran’, featured the dialog that Ayda Gezgin shared with healthcare workers in the ambulance.



Figure 1. *The Ayda Gezgin Tweet posted by Dr. Fahrettin Koca (@drfahrettinkoca) – 03.11.2020*

Following this tweet posted by the Minister of Health Dr. Fahrettin Koca, it was observed that some companies took action and shared their initiatives with the whole public via tweets posted from their Twitter accounts. In the tweet posted from the Köfteci Ramiz (@kofteciramiz) Twitter account tagged as a reply to Dr. Fahrettin Koca’s tweet, ‘We are on it.’, they can be seen to be replying to the tweet by the Minister of Health.



Figure 2. First Tweet posted by Köfteci Ramiz (@kofteciramiz) Twiter Account - 03.11.2020

A further tweet was posted to the public by the Köfteci Ramiz (@kofteciramiz) Twitter account stating, “The meatballs that we prepared for Baby Ayda and medical personnel are on the way.’,😊 with the hashtags of #aydabebek and #aydagezgin.



14:02 · 03 Kas 20 saatinde · Twitter Web App

Figure 3. Second Tweet posted by Köfteci Ramiz (@kofteciramiz) Twiter Account - 03.11.2020

When these event-oriented tweets sent from the Köfteci Ramiz (@kofteciramiz) Twitter account are analyzed in terms of real-time marketing activities evaluation criteria; when the “right time” criterion is considered, the parallelism shown in terms of time with the video tweet posted by the Minister of Health Dr. Fahrettin Koca, and the delivery of the products by the company to the hospital in the same time interval, shows that they were successful in the ‘right time’ criteria when sharing the tweet with the public. When the posted tweets are viewed in terms of the “correct message” criterion, Ayda Gezin stating to the healthcare professionals that she wants “meatballs and ayran “ in the ambulance, and the company portraying the fact that they are a company that produce these products in an appropriate manner, can be interpreted as a positive real time marketing activity in terms of this criteria. When considering the “continuity” and “suitable message frequency” criteria for the tweets posted by the company, having a continuity from the moment of occurrence to the conclusion of the event and also the sufficiency of the tweets posted in the stage of sharing the information with the public during the process, it can be interpreted as a positive real time marketing activity in terms of the ‘continuity’ and ‘suitable message frequency’ criteria. Due to the subsequent deletion of tweets thrown by the company, no evaluation can be made in terms of the “interaction” criterion, as it is not possible to find out how many comments were received, how many times the posts were “retweeted” and how many times the posts were ‘likes’.

It can be seen that another company took action after the video tweet posted by Minister of Health Dr. Fahrettin Koca, and shared their initiatives with the entire public via tweets posted from their Twitter accounts. Köfteci Yufus (@kofteciyusufr), in a tweet posted from their Twitter account, “Our employees have set off to deliver our meatballs and ayran to Baby Ayda who asked for Köfte and Ayran following her miraculous escape. All our hearts are with you, the most beautiful gift to our country, Ayda! Whenever you want Köfte and Ayran, we will be glad to bring it to you’.



Figure 4. Tweet posted from Köfteci Yusuf (@kofteciyusufr) Twiter Account - 03.11.2020

When these event-oriented tweets sent from the Yusuf (@kofteciyusufr) Twitter account are analyzed in terms of real-time marketing activities evaluation criteria; the parallelism shown in terms of time with the video tweet posted by the Minister of Health Dr. Fahrettin Koca, shows that they were successful in the ‘right time’ criteria when sharing the tweet with the public. When the posted tweets are viewed in terms of the “correct message” criterion, Ayda Gezgin stating to the healthcare professionals that she wants “meatballs and ayran “ in the ambulance, and the company portraying the fact that they are a company that produce these products in an appropriate manner, can be interpreted as a positive real time marketing activity in terms of this criteria. When considering the “continuity” and “suitable message frequency” criteria for the tweets posted by the company, in terms of sharing the event with the public only with one tweet and not having an informative tweet about the process afterwards it can not be interpreted as a positive real time marketing activity in terms of the ‘continuity’ and ‘suitable message frequency’ criteria. Due to the subsequent deletion of tweets thrown by the company, no evaluation can be made in terms of the “interaction” criterion, as it is not possible to find out how many comments were received, how many times the posts were “retweeted” and how many times the posts were ‘likes’.

Figure 5 shows the informative tweet of their own employee Uğur Gezgin’s daughter, Ayda Gezgin, who recovered injured after 91 hours under the rubble following the earthquake disaster, shared on the Twitter account of Yurtiçi Kargo (@YurticiKargo).



Figure 5. First Tweet posted by Yurtiçi Kargo (@YurticiKargo) Twiter Account - 03.11.2020

Following the first tweet posted from Yurtiçi Kargo (@YurticiKargo) Twitter account, the same company said, ‘AYDA IS OUR DAUGHTER! All the education expenses of our Ayda, who survived 91 hours under the rubble, will be covered by our company.’ was posted in the second tweet in Figure 6.



Figure 6. Second Tweet posted by Yurtiçi Kargo (@YurticiKargo) Twiter Account - 03.11.2020

When these event-oriented tweets sent from the Yurtiçi Kargo (@YurticiKargo) Twitter account are analyzed in terms of real-time marketing activities evaluation criteria; when the “right time” criterion is considered, the parallelism shown in terms of the timing of the situation and the decisions being shared at intervals with the pubşic, shows that they were successful in the ‘right time’ criteria. In addition, the fact that the last tweet posted by the company reached the numbers of 1.751 “retweets”, 1.242 “quote tweets” and 18.9 “likes” can be interpreted as very valuable in terms of the “interaction” criterion, which is one of the criteria for evaluating real-time marketing activities.

4. Conclusion

Today, due to its dynamic structure and high interaction power, the importance of social networking sites, which are often used by companies in modern marketing strategies, is increasing every day. Social networking sites, which have a large share in changing the way people access information with their technological infrastructure, also play a critical role in changing marketing strategies from the point of view of

companies. Unlike traditional communication tools, social networking sites, with their structure based on mutual interaction, are one of the most important elements that determine the agenda at important events in the country or around the world. In addition to communication, interaction and communication features, social networking sites, which are preferred to be used by companies for developing events, are an indispensable element of real-time marketing activities. Real-time marketing, also defined as event-oriented marketing, based on the principle of instant connection with customers based on the events that occur; are explained as companies creating digital content compatible with social networking sites based on important current events, and described as one of the modern marketing strategies aimed at establishing meaningful connections with consumers and getting positive return from consumers. In addition to providing short-term profitability to companies, real-time marketing activities offer many opportunities, such as both acceptance by consumers and giving them a competitive advantage by conducting advertising and promotional activities that can be carried out on large budgets with interesting shares.

In addition to individuals being able to share their thoughts and feelings in an instant, Twitter, where information, data, developments and statements are made by official institutions and individuals, is seen as the most important element in the shift of the axis of communication towards social networking sites. Twitter, which is also the focus of real-time marketing activities, also appears as a social networking site that is the subject of previous studies. When considering the limited literature related to real-time marketing activities, real-time marketing activities appear to be evaluated according to the tweets that companies send via Twitter. When these studies are examined in detail; in the study carried out by Yılmaz (2008) and Baran and Öymen (2020) were aimed on the movie “Back to The Future Day” and the series “Game of Thrones”, while the study carried out by Aydın, Bişkin and Gürsoy 2019 examines the academic and sectoral dimensions of real-time marketing in general, and in the study carried out by Bozkurt in 2020, the power outage in 2015 was selected as the agenda, and the tweets posted by brands on this subject were evaluated. The results of these studies show the importance of companies being able to produce the right content at the right time for events, the element of interaction and reaching the most accurate target audience.

In this study, where the socially prominent tweets posted by companies on “Twitter” during the 6.6 magnitude earthquake disaster that took place in Izmir on Friday, October 30 and the following process were evaluated in terms of real-time marketing activities,, a review was carried out using the criteria determined by Levinson and Horowitz (2011) and Lieb

(2013). The results of this study, in which the criteria to evaluate real-time marketing activities such as “the right time”, “the right message”, “continuity”, “appropriate message frequency” and “interaction” were used; results show similarity to other studies in literature in demonstrating the importance of companies to produce the right content at the right time and to convert these content digitally appropriately. This study is positioned differently to other studies in literature in terms of determining how important the criteria of “continuity” and “appropriate message frequency” in real time marketing activities developed by companies aimed at spontaneous events, and the result of these adjustments having a critical importance in terms of becoming a the focus of consumers or other users when implemented in a very careful manner. In addition, in terms of evaluating companies in terms of the “interaction” criterion and examining whether they are successful in real-time marketing activities, this criterion is of great importance.

REFERENCES

- Abd-Alrazaq, A., Alhuwail, D., Househ, M., Hamdi, M., ve Shah, Z. (2020). Top Concerns of Tweeters During the COVID-19 Pandemic: Infoveillance Study. *Journal of Medical Internet Research*, 22(4), 19016, <https://doi.org/10.2196/19016>.
- Ahmad, I. S., Bakar, A. A., ve Yaakub, M. R. (2020). Movie Revenue Prediction Based on Purchase Intention Mining Using YouTube Trailer Reviews. *Information Processing & Management*, 57(5), 102278, <https://doi.org/10.1016/j.ipm.2020.102278>.
- Akbarpour, N., Haranaki, M. K., Mehrani, H., Gharibnavaz, N., ve Sharif, M. A. (2020). A Design of Strategic Real-Time Marketing Model in Smart Cities Based on the Internet of Things in the Fourth Industrial Revolution. *International Journal of Nonlinear Analysis and Applications*, 11(1), 339-349, <https://doi.org/10.22075/IJNAA.2020.4607>.
- Apuke, O. D., ve Omar, B. (2021). Fake news and COVID-19: modelling the predictors of fake news sharing among social media users. *Telematics and Informatics*, 56(1), 101475, <https://doi.org/10.1016/j.tele.2020.101475>.
- Arrigo, E., Liberati, C., ve Mariani, P. (2021). Social Media Data and Users' Preferences: A Statistical Analysis to Support Marketing Communication. *Big Data Research*, 24(1), 100189, <https://doi.org/10.1016/j.bdr.2021.100189>.
- Aydın, D., Bışkin, F., ve Gürsoy, B. (2019). Gerçek Zamanlı Pazarlamanın İçerik Özellik ve Stratejilerinin Uzman Görüşü ve Örnek Uygulamalar Üzerinden Bir Değerlendirmesi. *Akdeniz Üniversitesi İletişim Fakültesi Dergisi*, 32(1), 192-216, <https://doi.org/10.31123/akil.617254>.
- Baran, H., ve Öymen, G. (2020). Gerçek zamanlı pazarlamanın markalar üzerindeki rolü: "Game of Thrones" örneği. *Uluslararası Halkla İlişkiler ve Reklam Çalışmaları Dergisi*, 3(1), 80-107, <https://dergipark.org.tr/tr/pub/hire/issue/53751/677485>.
- Bozkurt, Y. (2020). Markaların Sosyal Medyada Gündem Kullanımı: Gerçek Zamanlı Reklamlar. *IBAD Sosyal Bilimler Dergisi*, 6(1), 344-365, <https://doi.org/10.21733/ibad.668020>.
- Chen, S.-N. (2020). Real-time interactive micro movie placement marketing system based on discrete-event simulation. *Multimedia Tools and Applications*, 1(1), 1-16, <https://doi.org/10.1007/s11042-020-09104-0>.
- Cheung, M. L., Pires, G. D., Rosenberger, P. J., Leung, W. K., ve Ting, H. (2020). Investigating the role of social media marketing on value co-creation and engagement: An empirical study in China and Hong Kong. *Australasian Marketing Journal (AMJ)*, <https://doi.org/10.1016/j.ausmj.2020.03.006>.
- Civelek, M., Gajdka, K., Světlík, J., ve Vavrečka, V. (2020). Differences in the usage of online marketing and social media tools: evidence from Czech,

- Slovakian and Hungarian SMEs. *Equilibrium*, 15(3), 537-563, <https://doi.org/10.24136/eq.2020.024>.
- Depoux, A., Martin, S., Karafillakis, E., Preet, R., Wilder-Smith, A., ve Larson, H. (2020). The pandemic of social media panic travels faster than the COVID-19 outbreak. *Journal of Travel Medicine*, 27(3), 1-2, <https://doi.org/10.1093/jtm/taaa031>.
- Duraisamy, B., Rathinaswamy, J., ve Sengottaiyan, K. (2020). Social Media Reigned by Information or Misinformation About COVID-19: A Phenomenological Study. *Social Sciences & Humanities Open*, 1(1), 1-18. <http://dx.doi.org/10.2139/ssrn.3596058>.
- Farooq, A., Laato, S., ve Islam, N. (2020). Impact of Online Information on Self-Isolation Intention During the COVID-19 Pandemic: Cross-Sectional Study. *Journal of Medical Internet Research*, 22(5), 19128, <https://doi.org/10.2196/19128>.
- Gaber, H. R., Elsamadicy, A. M., ve Wright, L. T. (2019). Why do consumers use Facebook brand pages? A case study of a leading fast-food brand fan page in Egypt. *Journal of Global Scholars of Marketing Science*, 29(3), 293-310, <https://doi.org/10.1080/21639159.2019.1622434>.
- González-Padilla, D. A., ve Tortolero-Blanco, L. (2020). Social media influence in the COVID-19 Pandemic. *International Braz J Urol*, 1(1), 1-7, <http://orcid.org/0000-0002-5853-8845>.
- Hajli, N., ve Laroche, M. (2019). Applications of business intelligence and analytics in social media marketing. *International Journal of Information Management*, 48(1), 226-227.
- Hinsch, C., Felix, R., ve Rauschnabel, P. A. (2020). Nostalgia beats the wow-effect: Inspiration, awe and meaningful associations in augmented reality marketing. *Journal of Retailing and Consumer Services*, 53(1), 101987, <https://doi.org/10.1016/j.ijinfomgt.2018.12.014>.
- Jacobson, J., Gruz, A., ve Hernández-García, Á. (2020). Social media marketing: Who is watching the watchers? *Journal of Retailing and Consumer Services*, 53(1), 101774, <https://doi.org/10.1016/j.jretconser.2019.03.001>.
- Kapoor, K. K., Tamilmanni, K., Rana, N. P., Patil, P., Dwivedi, Y. K., ve Nerur, S. (2018). Advances in Social Media Research: Past, Present and Future. *Information Systems Frontiers*, 20(1), 531-558, <https://doi.org/10.1007/s10796-017-9810-y>.
- Krings, W., Palmer, R., ve Inversini, A. (2021). Industrial marketing management digital media optimization for B2B marketing. *Industrial Marketing Management*, 93(1), 174-186, <https://doi.org/10.1016/j.indmarman.2021.01.002>.
- Levinson, J. C., ve Horowitz, S. (2011). *Yeni Pazarlama Kuralları*. Translator: Günseli Aksoy: Optimist Publications.

- Li, C., Chen, L. J., Chen, X., Zhang, M., Pang, C. P., ve Chen, H. (2020). Retrospective analysis of the possibility of predicting the COVID-19 outbreak from Internet searches and social media data, China, 2020. *Euro Surveillance*, 25(10), 2000199, <https://doi.org/10.2807/1560-7917.ES.2020.25.10.2000199>.
- Lieb, R. (2013). *A Market Definition Report. Real-Time Marketing: The Agility*.
- Mazerant, K., Willemsen, L. M., Neijens, P. C., ve Noort, G. V. (2021). Spot-On Creativity: Creativity Biases and Their Differential Effects on Consumer Responses in (Non-)Real-Time Marketing. *Journal of Interactive Marketing*, 53(1), 15-31, <https://doi.org/10.1016/j.intmar.2020.06.004>.
- Omar, F. I., Othman, N. A., ve Hassan, N. A. (2019). Digital Inclusion Of Ict And Its Implication Among Entrepreneurs Of Small And Medium Enterprises. *International Journal of Engineering and Advanced Technology*, 8(5), 747-752, <https://doi.org/10.35940/ijeat.E1106.0585C19>.
- Rauschnabel, P. A., Felix, R., ve Hinsch, C. (2019). Augmented reality marketing: How mobile AR-apps can improve brands through inspiration. *Journal of Retailing and Consumer Services*, 49(1), 43-53, <https://doi.org/10.1016/j.jretconser.2019.03.004>.
- Sokolova, K., ve Kefi, H. (2020). Instagram and YouTube bloggers promote it, why should I buy? How credibility and parasocial interaction influence purchase intentions. *Journal of Retailing and Consumer Services*, 53(1), 101742, <https://doi.org/10.1016/j.jretconser.2019.01.011>.
- Sung, E. C. (2021). The effects of augmented reality mobile app advertising: Viral marketing via shared social experience. *Journal of Business Research*, 122(1), 75-87, <https://doi.org/10.1016/j.jbusres.2020.08.034>.
- Yang, R., ve Che, T. (2020). Do social ties matter for purchase frequency? The role of buyers' attitude towards social media marketing. *Computers in Human Behavior*, 110(1), 106376, <https://doi.org/10.1016/j.chb.2020.106376>.
- Yılmaz, A. (2018). Yeni Bir Pazarlama İletişimi Yaklaşımı Gerçek-Zamanlı Pazarlama: Otomobil Markalarının Geleceğe Dönüş Günü Sosyal Medya Pratikleri. *Erciyes İletişim Dergisi*, 5(4), 423-446, <https://doi.org/10.17680/erciyesiletisim.394942>.
- Zollo, L., Filieri, R., Rialti, R., ve Yoon, S. (2020). Unpacking the relationship between social media marketing and brand equity: The mediating role of consumers' benefits and experience. *Journal of Business Research*, 117(1), 256-267, <https://doi.org/10.1016/j.jbusres.2020.05.001>.



Chapter 3

MOBILE MEDIA AS A DIGITAL COMMUNICATION TOOL

Mihalis (Michael) KUYUCU¹

¹ Assoc.Prof., Alanya HEP University, michaelkuyucu@gmail.com

Introduction

Communication is an essential part of science that has always existed as a focal point of information exchange among parties at different physical locations. The invention of telephones brought a new chapter of communication since they replaced traditional media like telegrams and media. Similarly, the term mobile has wholly changed communication by creating opportunities for creative applications that are limited to an individual's imagination. Mobile telephony, tablets, and other handheld devices swept the world in a short time.

Studies show that the first cellular network in the world was developed in 1977, but the mobile phone has dominated the history of the fastest diffusing communication technologies with over 6 billion subscribers since 2011 (Ahmad et al., 2016). Today, experts have regarded mobile communication as society's backbone. All mobile system technologies have improved the lifestyle of humans. Most importantly, portable media has privileged a lot of people in the community (Badawood, 2016). Mobile media is improving lives and catalysing sustainable development. Since its introduction, the internet has changed the global society at an alarming rate, with mobile as a primary tool supporting its rapid acceleration.

The internet improves life by making information and other significant services available by a click of a button. Mobile internet also helps users to communicate efficiently, receive news and information, improve their education, and access health information and financial (Farman, 2015). This paper is grounded in the idea that mobile media is built on conceptual and taxonomical bases. Within this context, the paper employs previous fragmented approaches to studying mobile media, analyses them. It develops a set of definitions as well as applications of mobile media to consolidate this concept.

Literature Review

More than 6 billion people in the world use mobile phones, making it the most common and rapidly adopted communication in history. This development has impacted internet usage Flora et al. (2014). Farman (2015), in his study, projected that within the next decade, more people worldwide would access broadband internet through mobile devices than they do via desktop and laptop.

In addition to Farman's (2015) view, Steinkuehler & Squire (2019) pinpointed that today's mobile users have escalated, and this number is likely to double in the next few years. In this regard, Steinkuehler & Squire (2019) noted that more than half of mobile users rely on their mobile technology as sources of information, implying that in the next

decade, mobile media will be used by many as their primary sources of obtaining information.

According to Goggin (2010), smartphones, such as Droid, iPhone, and Blackberry, are on their way of becoming a mass mobile phone market in developed countries. Badawood, (2016), in his study, found that mobile users have rapidly increasing options in mobile devices and available mobile services, which is one of the contributing factors to the growth of mobile media. However, Humphreys et al. (2013) assumed that the growth of mobile media depends on the compatibility of technology with the understanding of the user and appropriation of mobile devices.

History of Mobile Media

Communication between humans has existed since the beginning of time. The increase has influenced the advancement, accessibility, and user-friendliness of information transferred from one party to another in technology. According to Jones et al. (2013), information has transformed into media, and media has transformed into mobile media. Today's widespread availability of advanced mobile media would be impossible without the various achievements of inventors and business professionals (Jun & Lee, 2017). History depicts that the first mobile media occurred when the ancient Egyptians used papyrus as an alternative to stone tablet inscription (Farman, 2015). This idea of transporting written media is later shown by the invention of Johannes Gutenberg of the printing press in 1440 (Ling & Donner, 2018). The printing press was a significant advancement for media distribution because it allowed for mass printing and supply of newspapers.

A few centuries later, the Chappe brothers developed the first working mechanical telegraph (Farman, 2015). The telegraph changed the world of mobile communication since it speeded up the transfer of information between two people who were at further distances. Towards the end of the nineteenth century, the telephone, invented by Alexander Graham Bell, replaced the telegraph, thus, bringing another revolution in mobile media. Bell first demonstrated the telephone in 1877 (Goggin, 2010). Later, he founded the American Telephone and Telegraph Company (AT &T).

At the beginning of the twentieth century, Bell legitimised his invention, though, after some turmoil and competition with the dominant telegraph company during that time (Farman, 2015). Initially, the use of the telephone was not widely adopted across the globe. Approximately 10 million telephones were available in the entire world in 1910, and the U.S. accounted for about 70% of the telephones (Ling & Donner,

2018). According to Flora (2014), a handheld radio telephone service was envisioned in the early stages of radio engineering.

In 1917, Eric Tigerstedt, a Finnish inventor, filed a patent for the pocket-size folding telephone with a very thin carbon microphone (Farman, 2015). Early predecessors of cellular phones included analog radio communications from trains and ships. In 1921, the Detroit Michigan Police Department first used mobile radio in a vehicle (Goggin, 2010). Although a few people used telephones when it was first discovered, its usage later increased rapidly. By 1922, more than 20 million telephones were available worldwide (Ling & Donner, 2018). The number grew to approximately 50 million in 1939 to around 75 million in 1950 (Farman, 2015).

Bell died in 1922 before witnessing the real impact of his invention in the world, but his company, Bell Labs, continued to develop various significant technologies (Farman, 2015). After World War II, the company's work on computers, computer languages, and software provided a framework for a network of mobile telephones (Goggin, 2010). This period marked the beginning of the race to create truly portable telephone devices with developments occurring in many countries. Partners of the firm programmed software that could switch calls, change radio frequencies, turn radios on and off, and connect receivers to the telephone system automatically (Ling & Donner, 2018). These technologies created room for the development of a cell phone. Research shows that the cell phone is another invention that completely transformed how people transported media.

A study by Wei (2013) showed that digital wireless and cellular roots began in the 1940s. During this period, new frequencies between 30 and 40 MHz were available (Wei, 2013). More channels were available in the police systems. Mobile units were also available within private companies, public agencies, and individuals (Wei, 2013). In 1945, the first mobile telephone system was introduced in St. Louis, US (Humphreys et al., 2013). Along the highway between Boston and New York, a public mobile system carried a higher frequency distance in 1947 (Jones et al., 2013). In 1949, the Federal Communications Commission (FCC) authorised separate radio channels to common carriers (Wei, 2013). A new system with automatic channel selection was created in 1964 (Farman, 2015). This new system allowed customers to dial a call for themselves, and it eliminated the need to push-to-talk operation. A study by Ling & Donner (2018) indicates that the advances of mobile media and mobile telephony have been traced in successive generations starting with the early Zeroth generation (0G) services like Bell System's Mobile Telephone Service and its successor, the Improved Mobile Telephone Service. These 0G

systems supported a few simultaneous calls and were expensive (Memon & Otho, 2017). However, they were not cellular.

In 1973, John F. Mitchell and Martin Cooper of Motorola demonstrated the first handheld mobile phone using a handset weighing c. 4.4 lbs 92kg (Jones et al. , 2013). This year marked the origin of the modern cell phone when Motorola invented the first cellular portable telephone known as DynaTAC 8000X (Wei, 2013). Cooper is believed to be the inventor of this mobile phone for use in a non-vehicle setting. Wei (2013) asserted that there was a long race between Motorola and Bell Labs to produce the first mobile phone. Cooper and Mitchell together pushed Motorola to develop wireless communication products that would be small enough to be used in an open environment (Wei, 2013). On April 3, 1973, Cooper made the first cellular phone call on a handheld mobile phone using a heavy portable handset. His success in creating a cellular phone call showed the inception of mobile media, as inventors were certain that information could be passed from one person to another in a free environment using a mobile phone (Farman, 2015).

In 1978, AT&T proposed the advanced mobile phone system based on the cellular idea conceived earlier (Goggin, 2010). In the same year, the first commercial telephone systems were tried in Bahrain and other regions in the U.S. such as Newark, New Jersey, and Chicago, where the first cellular service was provided. In 1979, Nippon Telegraph and Telephone launched the first commercial automated mobile network (Goggin, 2010). In 1980, Cellular systems were constructed in the Washington D.C. area, where cell phones received a significant demand (Farman, 2015). This was followed by the simultaneous launch of the Nordic Mobile Telephone (NMT) system in Denmark, Sweden, Norway, and Finland in 1981 (Wei, 2013). This first-generation (1G) system could support simultaneous calls, although it still used analog technology.

At around the 1990s, cell phone technology continued to advance (Wei, 2013). Cell phones began to have features like multimedia and cultural exchange of information through text, touch, sound, and voice (Memon & Otho, 2017). In 1991, the second generation (2G) digital cellular technology was launched in Finland by Radiolinja on the Global System for Mobile Communications (GSM) standard (Wei, 2013). This launch sparked competition in the technology industry as the new operators challenged the 1G network operators.

In early 2000, access to the internet and Global Positioning System (GPS) technology became available for users of cell phones (Ling & Donner, 2018). In 2001, NTT Docomo, a predominant mobile phone operator company in Japan, launched the third-generation (3G) on

the Wideband Code Division Multiple Access (WCDMA) standard (Wei, 2013). This launch was succeeded by the 3.5G, 3G+ or turbo 3G enhancements based on the high-speed packet access (HSPA) family, thus, enabling Universal Mobile Telecommunications Service (UMTC) networks to have higher data transfer speed and capacity (Peters & Ben Allouch, 2005).

By 2009, it became evident that the 3G networks would be overwhelmed by the developments of bandwidth-intensive applications like streaming media (Przybylski & Weinstein, 2013). Subsequently, the industry started looking to data-optimize 4G technologies with the promise of improving speed (Memon & Otho, 2017). The first two commercially available technology billed as 4G included the WiMAX standard offered in North America by Sprint, and Long-term Evolution (LTE) standard, first provided by TeliaSonera in Scandinavia (Wei, 2013). Research indicates that the advancement of cell phones, together with the network technology, has continued through history, which has made it possible for the existence of smartphones used today (Quesada-González & Merkoçi, 2017). These advancements show the evolution of mobile media.

The Concept of Mobile Media

Jones et al. (2013) defined mobile media as a media content consisting of audio, image, and video that is captured with or shared through a mobile interface or device. According to Wei (2013), portable media is a range of handheld devices, from mobile phones, tablets, and e-readers to game consoles, primarily used as personal, interactive, internet-enabled, and user-controlled portable platforms that allow interconnected users to exchange and share information. Based on Jones et al. (2013) and Wei's (2013), definitions, mobile media-supported communication is communication through a mobile platform that allows for information exchange between interconnected users. The mobile platform also enables users to access the internet due to media convergence.

Paul Levinson, in his book, "Cell phone", termed mobile media as "the media-in-motion business" that has occurred ever since someone thought to write on a tablet that could be lifted and hauled instead of writing on a cave wall, a monument or a cliff face that was usually stuck in place (Levinson, 2004). For a time, mobile devices like mobile phones and personal digital assistants (PDA's) were the primary sources of portable media from which the users could communicate with each other (Rau & Gao, 2008). Presently, the smartphone, which combines many characteristics of a cell phone with the PDA, has made the PDA archaic (Steinkuehler & Squire, 2019). The advancement of new mobile media as a real factor in society was influenced by the sale of smartphones, which

outpaced the sales of personal computers in 2011 (Watkins et al., 2012). Whereas independent technologies and functions of a mobile phone may be new and innovative, the need and desire to access and use media devices have existed for centuries.

(Rukzio et al., 2007) outlined that Levinson's (2004) remarks concerning the inventiveness and intelligence of telephonic communication applied to the need of users to communicate irrespective of their location. This concept led to the growth of mobile devices used today for communication. Levinson (2004) further noted in his book that Kodak Camera and transistor radio also bear portable information. Another device is the smartphone that is widely used today. (Scolari, Aguado, & Feij, 2012) stated that that smartphone, along with other portable devices, is key to mobile media as they enable the users to share media content using the internet and other applications. These devices have applications such as Bluetooth that allow interconnected users to share videos, music, images, and other files (Steinkuehler & Squire, 2019). The devices also enable users to stream download or stream the media over the internet.

In the United States, more than half of the population can access the internet through mobile media devices like smartphones and tablets (Wei, 2013). Studies show that there are more than 6 billion users of the mobile web in the world (Steinkuehler & Squire, 2019). According to this study, the experience of interconnection is what makes mobile communication fascinating. What Steinkuehler & Squire (2019) imagined sociologically in nearly a half-century ago is that mobile media renders individuals uniquely available, accessible, and subject to each other. The previous research indicates that mobile phone provides a unique social reward: - it grants instant membership to those who are poorly connected socially in society (Westlund, 2013).

A critical feature of mobile media as compared to classical mass communication is the back-staging of social organisations as producers and distributors of information to users of mobile phones (Wei, 2013). As such, mobile communication represents a new paradigm of human interaction with mobile media as user-generated communicative space (Watkins et al., 2012). It differs from the common carrier model of the plain old telephone (POT), which does not consider the content or mass media model controlled by a few reputable companies (Steinkuehler & Squire, 2019). Mobile media puts users in the middle of participative and interactive communication for the presence and co-presence experience.

The Characteristics of Mobile Media

Mobile media has come a long way from the days people primarily used cell phones to make calls. Today, the growth of technology has led to the advancement of mobile devices such as smartphones, which can support different communications (Steinkuehler & Squire, 2019). Through smartphones, users can send text messages, exchange emails, access the internet, take videos and pictures, and update their statuses in social media platforms such as Facebook and Twitter (Wei, 2013). The specific characteristics of mobile media are illustrated as follows.

Portability

A mobile device is defined by its ability to be moved frequently from one point to the other. Any mobile device functions and operates consistently while in motion, irrespective of proximity to a source of power or physical internet connection (Scolari et al., 2012). The devices also contain rechargeable batteries that allow several hours of operation without access to a power source (Westlund, 2013). The availability of rechargeable batteries in mobile devices aid in portability; thus, users can carry them anywhere they go. The long-battery life that comes with these devices supports video streaming, video taking, and internet browsing (Quesada-González & Merkoçi, 2017). That is the reason smartphones have a large battery capacity.

Small Size

Mobile devices have phone-like dimensions implying that they are small in size. A typical mobile device can fit in hand or pocket of the user. Some devices may fold or slide form a compact, portable mode, to a slightly larger size, projecting built-in keyboards or larger screens (Ahmad et al., 2016). Mobile devices also utilise torch screens and small keypads to receive input and maintain their small size as well as independence from external interface devices. According to Badawood (2016), the standard form of a mobile device enables the user to operate with one hand while operating its functions with the thumb.

Wireless Communication

Mobile devices have wireless connections that enable users to communicate with others through networks. Base mobile devices can access the internet via Bluetooth or Wi-Fi networks, and many models are equipped to access wireless data networks (Steinkuehler & Squire, 2019). Email and texting are typical ways of communicating with the mobile device. However, some devices capable of telephony and others, such as barcode readers and Radio Frequency Identifications (RFID), communicate directly with a central device (Wei, 2013).

Video Chatting

Mobile media has applications that enable the users to video chat in high definition with family and friends (Wright, 2005). The iPhone, for instance, is characterised with a face time-chatting feature. Smartphones also have applications such as Whatsapp that allows the users to video chat. Examples of smartphones that offer video and group chatting include the Windows Phone B.X. and Droid DNA (Westlund, 2013).

Beginning and Current Situation of Mobile Media

The first wireline telephone system was launched in 1877 (Farman, 2015). By 1934, mobile communications were based on Amplitude Modulation (AM) schemes contained in specific public organisations (Floran et al., 2014). During the Second World War, the demand for newer and better mobile radio communications increased (Wei, 2013). This demand, coupled with the development of the Frequency Modulation (F.M.) technique by Edwin Armstrong, influenced the changes in the mobile radio communication systems (Campbell & Kwak, 2011). In 1946, the mobile telephone was launched (Scolari et al., 2012). For more than 35 years, this system experienced low market penetration costs and various technological setbacks (Farman, 2015). However, with the developments of cellular concepts at the Bell Laboratories in the 1960s, mobile communication started to be a promising sector of expanse with an increase in customer-base (Wei, 2013).

Initially, mobile media was restricted to specific official users, and there were no plans to make the cellular concept a commercial project (Wei, 2013). Research by Steinkuehler & Squire (2019) found that the development of advanced technologies in the 1970 and the connection of the users to the Public Switched Telephone Network (PSTN) encouraged an astronomical growth in the personal communication systems and cellular growth. According to Goggin (2010), the first cellular telephone system in the U.S. was the Advanced Mobile Phone System (AMPS) deployed in 1983. Since then, wireless services have been experiencing more than 50% growth rate per year (Farman, 2015). The number of mobile phone users increased from around 2500 in 1984 to approximately 3 billion in 2007, and the demand is still on the rise (Campbell & Kwak, 2011).

In today's digital era, coupled with the speed-driven journalism, the mobility of information has been of great value. A study by Steinkuehler & Squire (2019) recently found how mobile technology has made new possibilities for journalism. Additionally, mobile devices have changed everyday life. In this context, mobile devices are not only used for fast

interaction, but they are also used for shopping (Flora et al., 2014). Due to the advancement of technology and the emergence of the internet, online businesses have emerged. Mobile devices currently have applications that allow users to conduct online shopping and transactions (Goggin, 2010). Basically, almost every activity people perform today is now connected with mobile digital devices.

Nowadays, it is incredible to consider how mobile devices have become significant. For instance, if one is heading out of the supermarket, they might check their phones for the closest location or confirm if their local store has everything they need in stock (Wei, 2013). Similarly, the individual might use a GPS application through their phone in the car or stream music from their device (Humphreys et al., 2013). Before shopping, the individual can compare the costs of products or pay through their device. These activities show how pervasive mobile media have become. Mobile media has also promoted the marketing of products. Companies are now finding it easy to communicate with their customers, market their products, and sell these products through the internet. In other words, mobile media facilitated the flow of information in every sector of the economy. Through it, customers can quickly gain knowledge about the product they would want to purchase (Steinkuehler & Squire, 2019).

A global newspaper industry survey conducted in 2019 reported that approximately 80% of media managers found mobile platforms a significant priority in the future (Steinkuehler & Squire, 2019). According to the Pew Internet and American Life Project, over 91% of American adults now own a cell phone (Pewresearch.org). Globally, over 6 billion people own smartphones are connected to mobile internet (Badawood, 2016). Most of these individuals rely on their mobile phones as the primary source of information. This explains the current trend in mobile media, where over 50% of the world population depends on their mobile devices as the primary source of information (Steinkuehler & Squire, 2019). It can be noted that the current mobile media has replaced some sources of information like Newspapers and Magazines. Today, a large population use their mobile devices to obtain information from the internet.

Due to the emergence of mobile media, Scolari et al. (2012) highlighted that professional journalism had lost its monopoly on the production of news since many consumers believe that news should be available anytime and anywhere, particularly on mobile devices. Therefore, the days of desktop computer and mainstream media as the primary tools to obtain information seem to be numbered because cell phones have dominated the industry (Badawood, 2016). In this perspective, it is deduced that mobile media has become one of the latest news media that is available anywhere.

Moreover, following the advancement of mobile devices, widespread availability, and faster connectivity, these devices are broadly used for accessing the news (Goggin, 2010). Users turn to them for the updated news because the news in these media allows them to bypass the time and space problem of traditional media. Mobile devices have also been profiled as unique communication tools. This is according to Jun & Lee (2017), who determined that how people interact with news on mobile phones differs from news behaviour on other platforms. Currently, a lot of mobile news platforms have been created, including news alerts by SMS and MMS, as well as news available in mobile sites and applications (Memon & Otho, 2017).

Advantages of Mobile to the User

One of the advantages of mobile media is that it allows users to communicate by a principle call frequency reuse (Ahmad et al., 2016). This principle enables the use of the same principle by different cells without creating disturbance from other cells (Ahmad et al., 2016). Frequency can be used repeatedly. Mobile phones operate within cells and can switch calls while the user is in motion. The user of a mobile phone can move a long distance and maintain communication during the whole journey (Badawood, 2016). In this case, mobile media provides an effective and efficient way to communicate. The second benefit of mobile media is that the devices are portable. Digital cell phones can process multiple calculations within a second to process and decompress the voice stream. Mobile phones have a full-duplex. It implies that the user can use one frequency for talking and another rate for listening (Farman, 2015). Both individuals on a cell can speak once. Goggin (2010) outlined that a cell phone can communicate more than 1664 channels. It also uses a dual-band that allows it to function in both 800MHz and 1900 MHz (Flora et al., 2014).

A third advantage is that mobile media gives the user a wide variety of functions. For example, the user can save information, keep appointment track, make a to-do-list, and set reminders. Through mobile data, an individual can send text messages, receive calls, and get information about entertainment, current affairs, and stock quotes, as well as play simple games (Goggin, 2010). Mobile media is also vital during an emergency. In Westlund's (2013) view, a mobile communication device is essential in emergency issues. In case an emergency issue erupts, the mobile phone can be used to contact the party involved. Communication devices like mobile phones embedded in them can be used to catalogue the events of an accident scene to determine responsibility and evaluate damage (Campbell & Kwak, 2011).

Another advantage of mobile media is that it allows the sharing of information. (Watkins et al., 2012) argued that the internet has helped widen communication channels by connecting users across the globe via one computer network. Nonetheless, before the development of mobile devices, there is a need for information before transmitting it to the internet. With mobile devices, business professionals can promptly share information with customers and vendors regardless of their location (Flora et al., 2014). Similarly, friends can share messages, videos, images, and music instantly without waiting to access a computer.

Mobile media also allows for the sharing of leisure content ranging from digital literacy to songs, movies, and Television series (Watkins et al., 2012). Based on these benefits, mobile data has great influence on everyday life. The devices are faster and effective and are used as the best mechanism for communication today. Mobile devices have also played a significant role in uniting the world. Indeed, it is an extra resource that gives users huge benefits.

Lastly, mobile media allows users to bypass news produced by institutionalised organisations to receive updated news (Badawood, 2016). The widespread use of mobile tweeting accessible enables the users to report criminal cases to the authority. Several high profile corruption cases in many countries, for instance, have been reported by mobile tweets by average citizens. Recently, a video of an American Citizen, George Floyd, who was murdered by a police officer, circulated over the internet and raised the attention of the authorities. Citizens who were available at the scene recorded the incident and posted the video on social media, attracting the attention of every mobile user. This case shows how mobile media is powerful, as it enables every citizen to capture and record any malicious activity to the internet for investigation.

Advantages and Disadvantages of Mobile Media to Media Industry

One advantage of mobile media to the media industry is that it assists the journalists to create content and distribute news to the public. Nearly every news media in the world rely on mobile media to create news and post the news to the company's website and other social media platforms like Facebook, YouTube, and Twitter for public access (Steinkuehler & Squire, 2019). It is worth noting that mobile journalism can be considered from a professional point-of-view or the user. In the first case, mobile journalism is a professional practice as it is involved in creating and diffusing news with simple portable devices (Westlund, 2013). The news created and delivered using mobile devices spread faster to a large population.

News items are often posted either in online publications, print editions of newspapers or social networks such as YouTube (Jones et al., 2013). For most journalists, standard portable devices like mobile phones are increasingly digital media toolkits with various combinations of multimedia and text message capability, Video cameras, GPS locator, T.V. receivers, and different application software ranging from games to personal organisers (Memon & Otho, 2017). Quesada-González & Merkoçi (2017) outlined that a mobile phone is increasingly becoming significant to the media industry as a production device.

To fight for their relevance and keep up with the pace of full-time news demand, media institutions have incorporated mobile media applications and websites for circulating professionally produced content (Wei, 2013). Tom Curley, the former president of the associated press, described the shortened news cycle by noting that the spread of a news event went from three hours in 9/11 to three minutes in the social media era (Jun & Lee, 2017). Still, a rising number of news organisations are making an effort to adapt to mobile communication technology.

Due to the portability of handheld communication devices, media organisations regard them as the best choices for professional content recorded in the field (Ling & Donner, 2018). Simply put, the primary advantage of mobile media to the media industry is that it enables news organisations to create content and deliver the generated content to the public domain through the internet. It also enhances the speedy creation and delivery of news to a large population since over 50% of the world population rely on mobile phones, specifically, smartphones as the primary source of information (Steinkuehler & Squire, 2019).

Another advantage is that mobile media enables the media industry to track the trend. Live streaming with mobile applications provides live games, live episodes, and T.V. shows (Humphreys et al., 2013). Through mobile apps, T.V. shows are getting more Target Rating Point (TRP) (Humphreys et al., 2013). By mobility, movie makers are productively creating buzz around the latest releases. This helps the mainstream media, some of which air T.V. shows, to expand their box office collection (Flora et al., 2014). Also, with the proliferation of online radio and music-listening stations, the media industry is earning steady followers and generating more profits.

Despite the numerous advantages, the media industry experiences some disadvantages with mobile media. One of them is the possibility of fake news, which damages the reputation of the affected organisations. Mobile media has created a platform where every internet user has the freedom to share information through various social media websites. In

the same way, freedom of the press is valued as news organisations are allowed to post any content considered worthy of public consumption. The media industry has a policy of editing information and validating it to ensure that it originates from a trusted source before making it public on the organisation's website or social media pages.

However, with the speedy flow of information influenced by mobile media, some news organisations do not have time to verify information passed to the public. This information may be fake if not verified, but since someone in the media industry posts it, the non-skeptical audience may find it easy to believe. This activity paints the image of the news organisation negatively when it is discovered that a false communication was made from a trusted news organisation. In the end, the reputation of the company is damaged.

Another disadvantage of mobile media to the media industry is a security vulnerability. Like any other technological tool, mobile devices used by media personnel to create and distribute news are vulnerable to security risks. These devices can be hacked and used to spread malicious content over the internet using the company's name. Among the malicious activities may be fake news. As a result, the followers may lose trust in the organisation affected, thus, reducing the productivity of the media in question. Another disadvantage is the uncensored content. The media industry has followers of all ages. Sometimes, sharing uncensored news such as violence and adult content may be challenging because the media personnel may not be sure if the shared content will be viewed by appropriate people (Goggin, 2010). Since everyone, including the minors, can access the internet, it becomes difficult for the media industry to share uncensored information deemed significant to a particular population.

Elements of Mobile Media

Broadband Multimedia Contents

The digitisation of the second-generation of mobile communication generated SMS being included in the mobile contents, thus, signalling the beginning of the transformation of this verbal dimension into new communication modes (Flora et al., 2014). After the success of SMS, the mobile industry applied linear logic and focused on extending the SMS model. These initiatives consisted of the MMS, in which it was possible to send pictures, videos, and texts simultaneously (Ahmad et al., 2016). At the beginning of the twenty-first century, the inclusion of multimedia in mobile devices progressed slowly in a complex process that researchers considered as one of the potential dimensions of general media

convergence. Today, mobile media is characterised by several multimedia contents like graphic image files, video clips, audio files, and texts.

3G and 4G Enabled Networks

3G and 4G networks are other elements of mobile media. In 2007, 3G mobile technology was launched to enable customers to use graphics, audio, and video applications (Badawood, 2016). 3G technologies make it possible for users to watch videos and make video calls. This technology maintains higher rates of data, offers global roaming, support packet and circuit-switched data transmission, and provides access to the internet applications from any location around the world (Campbell & Kwak, 2011). The 4G network was recently launched to offer high rates of transmission and accommodate the Quality of Service features (QoS) (Farman, 2015). This feature does not enable the use of mobile applications that include increased streaming of multimedia content, but it also improves the quality of video reference. According to Flora et al., (2014), the 4G mobile introduces wireless technologies to mainstream cell phones. It can work as television due to the wider bandwidth and high QoS it provides to access the internet and watch various T.V. channels.

Mobile News

Mobile news exists mainly in the form of mobile websites and applications. It has gained popularity in the whole world. For instance, the American adult population relying on mobile devices to obtain news has reached an average of 30% according to the Pew Research Centre's project for Excellence and in Journalism (Pewresearch.org). The Pew study found that about 44% of American adults own smartphones, while approximately 51% of smartphone owners use their devices as their primary sources of information (Pewresearch.org). Additionally, around 56% of tablet owners use their devices as the primary news source.

A study by Humphreys et al.,(2013) found that the consumption of mobile news is highly personalised, subject to the preferences of the mobile owners. A recent study indicated that news is as common as receiving news through the smartphone (Steinkuehler & Squire, 2019). Smartphone users are today, not satisfied with simply receiving the news. They often use the phone to follow a news organisation or a particular journalist on social media, follow a news blog or blogger, and twitter updates from a journalist or news organisation (Steinkuehler & Squire, 2019).

Usage of Mobile Media

Mobile data has been applied in several areas, including education, media industry, business organisations, and health organisation. Presently,

mobile devices are the most common ways to communicate because they can be used anytime and anywhere.

Mobile Media in Education

While the recent shift from desktop and laptop computers to mobile devices has advantages based on cost and maintenance, the educational potential of this new platform has been extensively explored (Steinkuehler & Squire, 2019). In education, mobile media not-only allows students to access an unlimited amount of information, but it also interconnects students through the use of social media on their mobile devices (Steinkuehler & Squire, 2019). Peters & Ben Allouch (2005) claimed that the main focus of the new technology is the ability to share information. Mobile media is allowing students to get information from their peers. According to Memon & Otho (2017), introducing mobile media to learning has increased social interaction and the ability to balance schoolwork and other demands. As Steinkuehler & Squire (2019) noted, mobile technologies provide students with the flexibility to access information at a convenient time and place.

Moreover, mobile technologies strengthen the individual relationship with information as people use a customised media device with personalised access to social networks and media library Przybylski & Weinstein (2013). Mobile learning can embody a broad spectrum of multimedia contents, simulations, games, and applications. A specific example is *Emergencia 112*, a feature phone game developed in Spain by group medical doctors in cooperation with health authorities to teach users about first aid techniques (Flora et al., 2014). In simple terms, students choose not just the kind of information to consumers, but also the source. (Jones, et al., 2013) added that mobile media had transformed educational practices through interest-driven learning. This has resulted in more connected educators and learners who are likely to succeed in an increasingly networked world.

Media Industry

The media industry uses mobile media to create not only news but also news alerts. News alerts refer to important information about current affairs delivered through a wireless handheld device. When mobile phones became widely used, many newspapers and media channels started their business online by sending news alerts on the consumer's mobile phones through a mobile application (Goggin, 2010). In the beginning, the information was sent to the customers from free. However, when the demand for information increased, some news organisations such as *Fortune Magazine* began to charge the cost from their mobile credit (Westlund, 2013). With portable media, news alerts have become part

of the daily routine of these media outlets. One of the merits created by mobile news alerts is that people receive first information on any news everywhere using their mobile devices. This means that the audience does not need a news schedule on T.V. or newspapers.

Business Organisations

Business organisations use mobile media for marketing their products and services. With a large population owning smartphones and other handheld devices that have internet connectivity, marketing experts believe that mobile devices are the best tools for promoting products and brand images (Badawood, 2016). Mobile marketing entails using mobile platforms for sending messages, downloading applications, or surfing the web for purposes of interactive advertising. Marketing activities in the mobile industry include advertising, mobile couponing, mobile direct marketing, mobile branding, mobile Corporate Social Responsibility (CSR), and other integrated actions in the digital sphere (Memon & Otho, 2017). Other than marketing, organisations use mobile media to enhance online shopping. In this case, companies develop an application that allows customers to order products and make purchases online.

Social Communication

The mobile application enables users to create groups, share ideas, and exchange information as well as unlimited videos, audio, images, and text messages (Wei, 2013). These applications also allow users to make free video and voice calls. Other social applications enable people to discover and connect with friends, families, and peers via social networks (Watkins et al., 2012). In other words, mobile media has created a channel through which people socialise using mobile phones and other mobile devices.

Healthcare

In healthcare, people use mobile devices to get fast access to their medical records and lab results. Mobile devices also help patients to store their essential medical files and save them through the email (Farman, 2015). Patients can have their health information during emergency cases. They can also use their mobile phones to schedule and receive medication reminders. Therefore, mobile media is useful in healthcare as it ensures proper record keeping and fast-tracking of patient information as most of the patient data are today stored electronically using handheld devices. In this case, mobile media prevents the possibility of data loss in a healthcare facility.

The Future of Mobile Media

Various researchers have envisioned that mobile media presently converges with the increase in the local wireless networks. In this perspective, Badawood (2016) speculated that the convergence would lead to a development that was not seen in the past when a universal mobile telephone system was the agenda. The researchers also believe that the convergence will continue to merge mobile phones and the internet. Ling & Donner (2018) postulated that there is a low possibility of the persistence of the strict distinction between mobile and stationary devices or their patterns of classification in the future. According to Ling & Donner (2018), this development will pose an increasing challenge for social education that plays a pivotal role in bridging various expanding technological potential and human-life worlds that set the final limits to what experts will consider appropriate, adequate, and desirable features of ubiquitous communication.

In the sector of education, researchers like Rau & Gao (2008) believed that books will drop dead in the future because the web is becoming easier to hold. They clarified that media tablets will turn books into multimedia, web-linked, and social-networking experiences. These researchers warned that people should be worried about books because the rate at which technology is evolving and e-learning is incorporated in schools is extremely high. Most researchers explained that mobile media is transforming the world, and soon, paperwork will end, and all services ranging from healthcare to education, business, and communication will be conducted electronically.

Conclusion

This paper has explored areas of research based on the following research questions. (1) What is the history of mobile media? (2) What is the concept of mobile media? (3) What are the key characteristics of mobile media? (4) How mobile media started, and what is the current situation in 2020? (5) What are the advantages of mobile to the user? (6) What are the advantages and disadvantages of mobile media in the media industry? (7) What are the key elements of mobile media? (8) What is the usage of mobile media in the world, maybe, historical statistics from the 2000s till 2020? (9) What do the professionals think and say about the future of mobile media? Findings show that mobile media evolved since the 15th century when the ancient Egyptians used papyrus as an alternative to stone tablet inscription. Various processes occurred until the twentieth century when technology began to take shape. The telephone system and cellular network, which shaped communication and influenced the innovation of mobile phones, were invented during

this period. Today, mobile media is dominated by handheld devices such as smartphones, mobile phones, tablets, and iPhones. These devices have internet connectivity and multimedia tools that allow users to share information and communicate efficiently. Mobile media has, therefore, formed a new face of engagement and extended the access points of users to news and information.

The media industry, individual users, business sectors, healthcare organisations, and education sectors have benefited from mobile media because it has increased access to information. Despite the benefits of mobile media in various industries, some professionals have projected that the education sector is one of the areas that may be affected by mobile media in the future. It is because most schools around the world are adopting e-learning. In this case, media tablets will turn books into multimedia, web-linked, and social-networking experiences, thus killing libraries and paperwork, which are equally significant in learning.

References

- Ahmad, S., Haamid, A. L., Qazi, Z. A., Zhou, Z., Benson, T., & Qazi, I. A. (2016). A view from the other side: Understanding mobile phone characteristics in the developing world. In *Proceedings of the 2016 Internet Measurement Conference*, 319-325.
- Badawood, S. (2016). A pilot study of Mobile Media Engagement: The Effect of Context on Consumer Response to Advertising. 2-20.
- Campbell, S. W., & Kwak, N. (2011). Mobile communication and civil society: Linking patterns and places of use to engagement with others in public. *Human Communication Research*, 37 (2), 207-222.
- Farman, J. (2015). Historicizing Mobile Media. Retrieved June 11, 2020, from <https://mobmedsp15.files.wordpress.com/2013/01/farman-jason-historicizing-mobile-media.pdf>
- Flora, H. K., Wang, X., & Chande, S. V. (2014). An investigation of the characteristics of mobile applications: A survey study.
- Goggin, G. (2010). *Global mobile media*. Abingdon: Routledge.
- Humphreys, L., Von Pape, T., & Karnowski, V. (2013). Evolving mobile media: Uses and conceptualisations of the mobile internet. *Journal of computer-mediated communication*, 18 (4), 491-507.
- Jones, S., Karnowski, V., Ling, R., & Von Pape, T. (2013). Welcome to mobile media & communication.
- Jun, J. W., & Lee, S. (2017). Mobile media use and its impact on consumer attitudes toward mobile advertising. *International journal of mobile marketing*, 2 (1).
- Levinson, P. (2004). *Cellphone: The Story of the World's Most Mobile Medium and How It Has Transformed Everything!* New York: St. Martin's Press.
- Ling, R., & Donner, J. (2018). Mobile Communication. Retrieved June 11, 2020, from https://mobmedsp15.files.wordpress.com/2013/01/ling-and-donner-mobile-communication_chapter-2.pdf
- Memon, B., & Otho, F. (2017). Mobile Media In Pakistan: Examining The Characteristics Of News Alerts Consumers. *Grassroots*, 51 (1).
- Peters, O., & Ben, Allouch, S. (2005). Always connected: a longitudinal field study of mobile communication. *Telematics and Informatics*, 22 (3), 239-256.
- Pewresearch.org*. (n.d.). Retrieved June 11, 2020, from <https://www.pewresearch.org/internet/>.
- Przybylski, A. K., & Weinstein, N. (2013). Can you connect with me now? How the presence of mobile communication technology influences face-to-face

- conversation quality. *Journal of Social and Personal Relationships*, 30 (3), 237-246.
- Quesada-González, D., & Merkoçi, A. (2017). Mobile phone-based biosensing: An emerging “diagnostic and communication” technology. *Biosensors and Bioelectronics*, 92 (1), 549-562.
- Rau, P. L., & Gao, Q. &. (2008). Using mobile communication technology in high school education: Motivation, pressure, and learning performance. *Computers & Education*, 50 (1), 1-22.
- Rukzio, E., Broll, G., Leichtenstern, K., & Schmidt, A. (2007). *Mobile interaction with the real world: An evaluation and comparison of physical mobile interaction techniques*. In *European Conference on Ambient Intelligence*. Berlin, Heidelberg: Springer.
- Scolari, C. A., Aguado, J. M., & Feij, C. (2012). Mobile media: Towards a definition and taxonomy of contents and applications. *International Journal of Interactive Mobile Technologies*, 6 (2), 29-38.
- Steinkuehler, C., & Squire, K. (2019). Mobile media learning: multiplicities of place. *On the Horizon*.
- Watkins, J., Hjorth, L., & Koskinen, I. (2012). Wising up: Revising mobile media in the age of smartphones. *Continuum*, 26 (5), 665-668.
- Wei, R. (2013). Mobile media: Coming of age with a big splash. *Mobile Media & Communication*, 1 (1), 50-56.
- Westlund, O. (2013). Mobile news: A review and model of journalism in the age of mobile media. *Digital journalism*, 1 (1), 6-26.
- Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of computer-mediated communication*, 10 (3).



Chapter 4

THE EFFECT OF PERCEIVED JOB INSECURITY ON TASK PERFORMANCE AND JOB SATISFACTION: THE MEDIATOR ROLE OF POSITIVE AFFECTIVITY

Saadet Ela PELENK¹

¹ Dr. Öğretim Üyesi, Recep Tayyip Erdoğan Üniversitesi, epelenk503@gmail.com.

1. Introduction

Today, organizational change, restructuring, downsizing and digital commerce factors have increased the importance of job insecurity. On the other hand, the economic crises of countries such as Turkey, USA, Norway, South Korea and Argentina have created a serious unemployment situation in the society. Countries have taken measures such as new employment creation, training and protection, and have tried to return to pre-crisis market stability. Job insecurity is a concern for the future and continuity of the job. Those who experience this anxiety are higher than quantitative unemployment. The perception of job insecurity is affected by environmental factors, working conditions, risk of losing a job, quitting colleagues or reduced endurance for job loss. Here, the increase in negative feelings about job loss can cause psychological weakness (Greenhalgh & Rosenblatt, 1984).

Perceived job insecurity is associated with at-risk employment qualities such as working condition, career opportunity, and salary increase (Hellgren, Sverke & Isaksson, 1999). The fact that job insecurity arises from objective or subjective reasons has been the subject of many studies. At this point, those who believe that job insecurity is subjective are of the opinion that as long as the person is strong, this loss will be minimized. Therefore, perceived job insecurity can be cognitive or psychological. The perception of unemployment influenced by the way of working, separation of colleagues and experiences can reduce task performance and job satisfaction. An employee who feels anxious for fear of being unemployed may decrease work efficiency by succumbing to feelings of alienation and loneliness. On the other hand, the person may experience serious physiological and psychological health problems. Risk and uncertainty in business life is a reality. Eliminating this perception with a positive resistance in response to the presence of unemployment can provide positive work outcomes for both the employee and the enterprise. Thus, the perception of crisis for employees can be turned into an opportunity with positive feelings and attitudes.

Positive affectivity is the employee's ability to cope with adverse events and increases job compliance. Positive attitudes and responses provide positive communication (Beltman et al. 2011) and increase job performance (Granday, 2000) and facilitate problem solving. Therefore, positive emotional state provides the ability to resist (Diamond & Aspinwall, 2003). A positive thinking individual has a more flexible and creative cognition as a struggling (Fredrickson, 2001).

Employee's positive affectivity can effect job satisfaction. Because positive emotion stimulates employees' perceptions about the

meaningfulness of the job (Wright & Cropanzano, 2004). On the other hand, positive affectivity provides a positive approach to business issues (Chiu, 2000), increasing the employee's ability to explore and learn (Chen et al., 2013). An employee with a perception of job insecurity can overcome this perception through positive affectivity. As a result, the crisis can be turned into a business opportunity and work efficiency can be increased. In this respect, motivation and positive affectivity are seen as the key to success of a business (Yasrebi et al., 2014).

Job satisfaction is the consistency between what an employee expects from the job and what is happening (Feinstein, 2006). However, it is necessary to fulfill the task as well as to do the job with pleasure. Task performance is the obligations related to the realization of the work (Jawahar & Carr, 2006). This performance, which requires technical knowledge and skills (Borman & Motowidlo, 1993), is the degree to which the employee fulfills the responsibilities in the job descriptions. However, psychological and physical health problems may occur in employees with the perception of job insecurity. Therefore, the tasks may not be performed with old performance. However, by developing a positive work behavior, the employee can make a change in job performance. In addition, employees' positive feelings about their job and characteristics can positively affect their job satisfaction (Robbins & Judge, 2012). In the literature, job insecurity was found to be negatively related to performance (Sverke, Hellgren, & Naswall, 2002; Piccoli, Reisel & De Witte, 2021) and job satisfaction (Probst & Brubaker, 2001; Naidoo & Lord, 2008; Reisel et al., 2010; Vander Elst et al., 2012; Fischmann, Witte, Sulea & Iliescu, 2018). However, the perception of job insecurity can increase employee performance (Mahmood & Rauf, 2018). On the contrary, working harder can be seen as a job guarantee. The research is important as job insecurity is a social problem and its psychological-physiological consequences affect all segments of the society. Today, not just one person, but the whole family remains unemployed and the dismissed person is left to difficult social and economic conditions.

This research proposes positive psychology and its applications as a solution to unemployment. In this context, it is important that managers make constructive criticism rather than destructive, try to gain people, give feedback, give innovative duties and responsibilities, and be optimistic (Rego, 2012, p.246; Bilmez, 2020). Thus, the perception of job insecurity may decrease and performance may increase again. The aim of the research is to examine the mediating role of positive affectivity in the effect of perceived job insecurity on job satisfaction and task performance. There is no research on the subject in the literature. This research was

carried out by using a survey method with call center employees who are exposed to the risk of unemployment.

Perception of unemployment is actually a communication problem and communication interruptions among managers, supervisors and employees, lack of balance between duties and responsibilities will bring along many communication problems. In today's age of communication, the effect of this perception on work outcomes is expected to change with positive affectivity. Communication is the expression of feelings and thoughts from the source to the buyer.

Call centers are organizations that try to survive with fast and effective communication even in times of crisis. Employees work approximately 8-9 hours a day by making collection-sales-operational calls, complaint replies, activation and campaign calls. In this business process, the authorities should communicate effectively by acting with a customer-oriented understanding. Positive affectivity in this communication increases the problem-solving ability of the employee (Chang & D'zurilla, 1996), and customers can increase the positive affectivity of the employee (Reydet & Carsana, 2017). At this point, reducing the negative effect of unemployment with positive affectivity and attitudes and transforming it into positive work outcomes may contribute to the organizational behavior and management literature of this study.

2.Hypothesis Development

Job insecurity is a negative situation that harms the work psychology and the sense of trust in the business. However, efforts continue to be made in the current job and those who choose to continue their job have to perform more. However, the perception of job insecurity, which causes stress, anxiety, fear so can decrease motivation (De Witte, 1999) and may negatively affect job performance in the long term (Sverke, Hellgren, & Naswall, 2002). However, a person with high affectivity finds a reason for dedication. These people are resistant to negative situation and stress (Wang et al, 2017, p.701). Unemployment (Greenhalgh & Rosenblatt, 1984) can be reduced even if it does not definitely disappear in the business.

Task performance is the achievement of the goals in job descriptions and depends on experience and knowledge. In this context, the development of positive attitudes (learning, exploring, sharing with colleagues) can positively affect the task performance. In this context, job insecurity may have a negative effect on task performance, but as positive emotionality increases, the direction and intensity of this effect may change. On the other hand, job insecurity can turn into difficult symptoms in people.

Because job insecurity negatively affects the welfare of the employee by creating disappointment about the work-related needs (Vander Elst et al., 2012, p. 252). However, positive mood can negatively affect the perception of job insecurity (Roskies, Louis Guerin, & Fournier, 1993).

The relationship between emotion and job satisfaction has been studied frequently. And emotions are adapted to job satisfaction theories. These theories are the psychological needs of individuals for job satisfaction (Connolly & Viswesvaran, 2000). Perceived job insecurity by employees can lead employees to negative thoughts and job attitudes. This situation will harm both employee and business performance. However, according to Mahmood and Rauf (2018), job insecurity causes an increase in employment. Because the increase in employee performance can be perceived as a guarantee against dismissal.

Employees' ability to develop positive emotions can increase their job performance (Luthans, Avolio, & Norman, 2008) and give employees life satisfaction (Cohn et al., 2009; Meyers & Woerkom, 2017). Positive affectivity increases resilience (Tugade et al. 2004). Perceived job insecurity can affect positive affectivity in different ways, depending on the strength of resilience. Generally, people who have positive feelings and thoughts can take too much risk regarding their duties (Isen & Geva, 1987; Aspinwall, 1998), and by applying crisis management well, they can turn negative processes into opportunities. In this context, job satisfaction can be considered as an organizational part of job insecurity (Greenhalgh & Rosenblatt, 1984). There are studies that found a decrease in job satisfaction when employees' perception of job insecurity increases (Probst & Brubaker, 2001; Naidoo & Lord, 2008; Reisel et al., 2010). However, this situation may change with positive affectivity (Bouckenooghe, Raja, & Butt, 2013). In particular, positive affectivity strongly regulates people's goal-orientation regarding their task (Aspinwall, 1998), affects career assessment, psychological well-being (Volmer & Wolff, 2018: 5) and creativity (Rego et al., 2012).

Perceived job insecurity is an employee's concern about the perception of future job loss or job continuity (Burgard & Seayla, 2017). With this negative thought, the job starts to be seen as meaningful and not important. Managers should provide economic and social opportunities to help employees feel safe. If these working conditions are not met, the danger is felt. However, the employee can make changes in task performance with positive attitude and thinking. For example, the employee's emotion is more effective in a task related to design. Employees' positive feelings, which express their free, investigative, peaceful, inspirational, interested, excited, strong, enthusiastic, agile, determined, careful and active roles, can only be achieved with appropriate business conditions. In this context,

the manager must provide the necessary business environment. As the positive affectivity of the employees increase, they do their jobs with greater enthusiasm and become more active in interpersonal relations. In such situations, employees easily overcome organizational barriers (Chen et al., 2013; Kaya et al., 2015). The mediating role of positive affectivity has been examined in various studies as having a positive effect (Dennis et.al, 2010; Rego et al., 2012; Meyers & Woerkom, 2017; Reydet and Carsana, 2017; Wang et al., 2017; Volmer & Wolff, 2018). Based on the information in the literature, the model and hypotheses of the research are as follows:

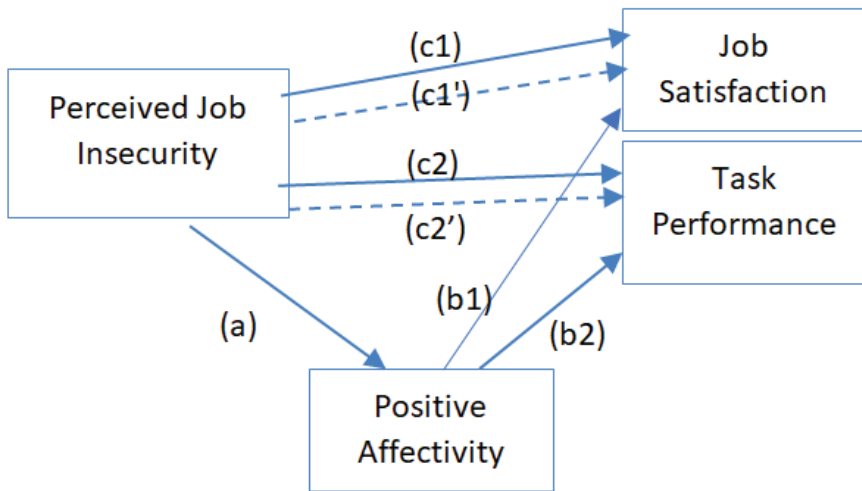


Figure 1. *Research Model*

The hypotheses for the model with mediator variables are determined as follows:

H1 (path a): Perceived job insecurity has a significant effect on positive affectivity.

H2 (path b1): Positive affectivity has a significant effect on job satisfaction.

H3 (path b2): Positive affectivity has a significant effect on task performance.

H4 (path c1): Perceived job insecurity has a significant effect on job satisfaction.

H5 (path c2): Perceived job insecurity has a significant effect on task performance.

H6 (path c1'): Positive affectivity has a mediating effect on the relationship between perceived job insecurity and job satisfaction.

H7 (path c2'): Positive affectivity has a mediating effect on the relationship between perceived job insecurity and task performance.

3. Method

3.1. Research Population and Sample

The research universe consists of 174 (N) call center employees who have the Capital Markets Board license (CMB) in financial institutions (banks) in Turkey. The convenience sampling method was used in the study. Participants with a CMB license were reached through the institution and an online questionnaire was sent after obtaining permission. Due to the workload, only 150 people could be reached from the participants and 140 participants returned. After removing 10 of the 140 questionnaires that were filled incompletely and incorrectly, the remaining 130 questionnaires were included in the research. It was determined that the number of samples to be reached in the calculation with a research population of 174 people, 95% confidence interval and 5% margin of error, is at least 120 (Hair, Black, Babin, & Anderson, 2014). Research data were collected between April-May 2019.

In the factor analysis included in the research, it is stated that the number of 300 is appropriate for the sufficient sample size, and at this point, it is stated that 100 samples are weak and 200 samples are medium. Kline (1994) stated that a sample of 200 people would generally be sufficient as an absolute criterion to extract reliable factors in factor analysis, and this figure could be reduced to 100 in cases where the factor structure is clear and small in number. The sample size is also estimated based on relative criteria such as the number of items or factors. Kline (1994) suggests that the sample size should be 10 times the number of items. Bryman and Cramer (2001) are of the opinion that the number obtained by multiplying the number of items by five or ten will be sufficient for the sample size. In this study, considering that there are 10 items in the scale with the highest number of items and that 10 times will be 100, the sample can be considered sufficient (Çokluk, Şekercioğlu, & Büyükköztürk, 2010).

When the demographic characteristics of the sample are examined, 30% of the participants are men (39 people) and 70% are women (91 people). 30% of the participants are associate degree graduates (39 people), 50% of them are undergraduate (65 people) and 20% (26 people) are graduate graduates. 60% of the participants (78 people) are married. 40% of the participants (52 people) are in the 18-28 age range, 50% of the participants (65 people) are in the 29-39 age range, and 10% of the participants (13 people) are 40 years and above.

3.2.Data Collection Method and Scales

The convenience sampling method was used to collect the research data. Research data were collected through a questionnaire. The questionnaire consists of two parts that include demographic and scale questions. In the demographic part, the participants were asked questions about gender, education, marital status and age.

In the second part of the questionnaire, a four-item and one-dimensional scale developed by Hellgren, Sverke and Isaksson (1999: 187) was used to measure perceived job insecurity. The Cronbach Alpha coefficient of the perceived (qualitative) job insecurity scale in the original study was found to be 0.75. In order to measure the task performance of the participants, nine items in five-point likert type developed by Goodman and Svyantek (1999) are included in one dimension. High scores indicate a high level of task performance. In order to measure the job satisfaction of the participants, a five-item scale prepared by Chen et al. (2009) was used. To measure the positive affectivity of the participants, a scale consisting of ten items and one dimension developed by Watson et al. (1998) was used. The five-point Likert scale was used to measure the research data (1= I don't agree at all, 5= I totally agree).

3.3 Data Analysis

SPSS statistics program was used in the analysis of research data. Within the scope of validity and reliability studies of the scale, confirmatory factor analysis (CFA), SCR, AVE, item total correlation and Cronbach Alpha were determined with the structural equation method with the Amos program. Confirmatory factor analysis (CFA) is an analysis that tests whether a previously defined and restricted structure is validated as a model. SCR (Scale Composite Reliability) is the internal consistency coefficient containing the added variances of the observed independent variables, it is expected to be calculated separately for subscales and to be larger than 0.60. AVE (Average Variance Extracted) has been proposed as the MSV convergent validity criterion. SCR greater than 0.70, AVE higher than 0.50 and SCR> AVE are both acceptable and strong indicators of convergent validity (Fornell & Larker, 1981).

4. Findings

4.1. Validity and Reliability Findings of the Scales

The fit indices of the scales used in the study obtained as a result of the confirmatory factor analysis (CFA) were examined. In the perceived job insecurity scale, it was determined that only the RMSEA index was not in the appropriate range, and the other fit indices were at very good

levels. It was determined that the factor loadings of the items in the scale and the correlations between the items were also at appropriate intervals and the fit index was at acceptable levels when the sample size was taken into account.

In the scales of task performance, job satisfaction, and positive affect, the fit indexes are generally not at appropriate levels, the item factor loads are appropriate, but the high correlation ($r \geq 0.90$) between the items indicates the presence of overlapping items and affects the fit indices. For this reason, items with high correlation in the scales were gradually excluded from the analysis, and the results in Table 1 were obtained.

Table 1. *Model Fit Indices Obtained in Confirmatory Factor Analysis*

		Perceived		Job Satisfaction		Positive Affectivity	
		Job Insecurity	Task Performance				
Model		First CFA	Last CFA*	First CFA	Last CFA	First CFA	Last CFA*
Fit Indices	4 items	9 items	7 items	5 items	4 items	10 items	6 items
X ² /df	2,796	3,041	1,334	7,433	3,566	3,485	1,149
RMSEA	0,118	0,126	0,051	0,223	0,141	0,139	0,034
SRMR	0,015	0,023	0,014	0,025	0,014	0,034	0,021
GFI	0,978	0,888	0,964	0,894	0,974	0,832	0,976
NNFI	0,975	0,951	0,993	0,912	0,969	0,922	0,996
CFI	0,992	0,963	0,996	0,956	0,990	0,940	0,998
Factor Load	0,83 / 0,94	0,83 / 0,96	0,83 / 0,92	0,88 / 0,93	0,86 / 0,92	0,75 / 0,94	0,76 / 0,93
Correlations	0,70 / 0,83	0,69 / 0,93	0,69 / 0,83	0,76 / 0,90	0,76 / 0,85	0,61 / 0,90	0,61 / 0,84
SCR	0,932	0,972	0,962	0,958	0,944	0,965	0,928
AVE	0,776	0,797	0,785	0,821	0,810	0,735	0,684

**With covariance link*

The problematic items in the scales were removed gradually and the covariance connection was made on each of the two scales, and the model fit indices reached the perfect level, there was no high correlation between the items, and the scales met the necessary conditions according to the composite reliability and validity results ($CR > 0.70$; $AVE > 0.50$; $CR > AVE$) has been detected. According to the findings, it was determined that the perceived job insecurity scale has 4 items, task performance 7 items, job satisfaction 4 items, positive affect 6 items, and a single dimension. Table 2 includes the factor loads obtained from the confirmatory factor analysis of the scales and the t values regarding the significance of the factor loads.

Table 2. *Coefficients Obtained from Confirmatory Factor Analysis*

Perceived Job Insecurity				Task Performance				Job Satisfaction				Positive Affectivity			
No	Std. β	t	r	No	Std. β	t	r	No	Std. β	t	r	No	Std. β	t	r
M1	0,94		0,89	M1	0,92		0,90	M2	0,92		0,83	M4	0,80		0,78
M2	0,89	16,48**	0,85	M2	0,92	18,17**	0,89	M3	0,91	14,54**	0,88	M5	0,76	9,67**	0,77
M3	0,83	14,13**	0,79	M3	0,88	15,90**	0,86	M4	0,91	14,64**	0,87	M6	0,77	9,71**	0,78
M4	0,86	15,27**	0,83	M5	0,83	13,78**	0,81	M5	0,86	14,89**	0,88	M7	0,79	10,17**	0,76
				M6	0,84	14,43**	0,84					M8	0,90	12,13**	0,83
				M7	0,90	17,41**	0,89					M9	0,93	12,67**	0,86
				M8	0,91	17,75**	0,89								
$\alpha=0,93$				$\alpha=0,96$				$\alpha=0,94$				$\alpha=0,93$			
**p<0,01				r: Inter item correlations				α : Cronbach Alpha							

According to the reliability analysis findings in Table 2, the Cronbach Alpha coefficients of the scales were between 0.93 and 0.96, and the item total correlations in the scales were higher than 0.30 (between 0.76 and 0.90). According to the validity and reliability analysis findings, the perceived job insecurity scale was found to be valid and reliable scales with 4 items, task performance 7 items, job satisfaction 4 items, positive affectivity 6 items, and one-dimensional structures.

4.2 Descriptive Findings

Table 3, includes the descriptive statistics of the variables.

Table 3. *Descriptive Statistics of the Variables*

Scale	n	Mean	df	Skewness
Perceived Job Insecurity	130	3,12	1,32	-0,25
Task Performance	130	2,90	1,28	0,08
Job Satisfaction	130	3,03	1,33	0,02
Positive Emotion	130	3,10	1,14	-0,18

According to Table 3, participants' job insecurity (3.12 ± 1.32), task performance (2.90 ± 1.28), job satisfaction (3.02 ± 1.33) and positive affect / emotionality (3.10 ± 1.14) scores were determined to be in the range of "undecided / neither agree-neither disagree".

4.3 Findings Regarding the Research Model

The results of the Pearson correlation analysis regarding the relationship between the variables of the study are given in Table 4.

Table 4. Correlation Analysis Results

Scale	1	2	3	4
1. Perceived Job Insecurity	1	-0,67**	-0,58**	-0,57**
2. Task Performance		1	0,80**	0,86**
3. Job Satisfaction			1	0,82**
4. Positive Affectivity				1

* $p < 0,05$ ** $p < 0,01$

Perceived job insecurity and task performance ($r = -0.67$; $p < 0.05$), job satisfaction ($r = -0.58$; $p < 0.05$), and positive affectivity ($r = -0.57$; $p < 0.05$), a negative and significant relationship was determined. A positive and significant relationship was found between task performance and job satisfaction ($r = 0.80$; $p < 0.05$) and positive affectivity ($r = 0.86$; $p < 0.05$). A positive and significant relationship ($r = 0.82$; $p < 0.05$) was found between job satisfaction and positive affectivity.

In the model of the study to be tested, the independent variable was determined as perceived job insecurity, the dependent variable task performance and job satisfaction, and the mediating variable in the relationship between independent and dependent variables was positive affectivity (Figure 1).

Baron and Kenny (1986) explained the four steps of establishing mediation as follows. The first three steps need to be tested as independent models. In step 1, the independent variable must have a relation to the dependent variable (Path c). This step reveals that there is an effect that can be mediated. According to the results of the correlation analysis, a significant relationship was found between the independent variable perceived job insecurity scores and the dependent variables job satisfaction and task performance ($p < 0.05$). In step 2, the argument must have a relation to the mediator variable (Path a). This step essentially involves treating the mediator variable as a dependent variable. According to the results of the correlation analysis, a significant relationship was found between the independent variable job insecurity scores and the mediator variable positive affectivity scores ($p < 0.05$). In step 3, the mediator variable must have a relation to the dependent variable (Path b). It is assumed that the mediator variable is considered as an independent variable and

Mediator Variable Model	Independent Variable	Path	Dependent Variable	H	Mediator	IE	SBT	R ² _{EB}
	Perceived job insecurity	→	Job satisfaction	H6 (c')	Positive affectivity	-0,51	-5,98**	0,086
	Perceived job insecurity	→	Task performance	H7 (c')	Positive affectivity	-0,49	-6,05**	0,082
	X ² /df=1,26RMSEA=0,04 CFI=0,98			SRMR=0,03	GFI=0,87	NNFI=0,98		

*: $p < 0,05$ **: $p < 0,01$ IE: Indirect effect
SBT: Sobel test statistic R²_{EB}: Variance change from mediator

In Table 5, the variance explained by the perceived job insecurity on job satisfaction is at the level of 36% ($R^2 = 0.365$), the variance explained on task performance is 49% ($R^2 = 0.489$), when the positive affect tool variable is included in the model, the variance in job satisfaction is 78%. ($R^2 = 0.784$) and variance in task performance reached 88% ($R^2 = 0.878$). It was found that the indirect effect of positive affect on the relationship between job insecurity and job satisfaction was -0.51, and the indirect effect of positive affect on the relationship between job insecurity and task performance was -0.49. Accordingly, it was determined that the variance change in job satisfaction due to the mediating effect of positive affect was at the level of 9% ($R^2_{EB} = 0.086$) and this change was statistically significant ($SBT = -5.98$; $p < 0.05$). Similarly, it was determined that the variance change in task performance due to the mediating effect of positive affect was at the level of 8% ($R^2_{EB} = 0.082$) and this change was statistically significant ($SBT = -6.05$; $p < 0.05$). As a result of the research, all the hypotheses of the research were accepted:

H1 (path a) Accepted: Perceived job insecurity has a significant effect on positive affectivity.

H2 (path b1) Accepted: Positive affectivity has a significant effect on job satisfaction.

H3 (path b2) Accepted: Positive affectivity has a significant effect on task performance.

H4 (path c1) Accepted: Perceived job insecurity has a significant effect on job satisfaction.

H5 (path c2) Accepted: Perceived job insecurity has a significant impact on task performance.

H6 (path c1') Accepted: Positive affectivity has a mediating effect on the relationship between perceived job insecurity and job satisfaction. The negative effect of perceived job insecurity on job satisfaction decreases significantly with the mediating effect of positive affect.

H7 (path c2') Accepted: Positive affectivity has a mediating effect on the relationship between perceived job insecurity and task performance. The negative effect of perceived job insecurity on task performance with the mediating effect of positive affectivity significantly decreases.

According to the results of the research, employees perceive job insecurity in the sector they work in. Employees' resistance to unemployment negatively affects their job performance and job satisfaction. However, as long as employees increase their positive affect, work behavior and attitudes (training, seminars, teamwork, creativity, etc.) in the workplace, a positive change can occur in their task performance and job satisfaction.

5. Conclusion

Unemployment is an economic and social problem. Loss of income, decrease in living standards, need for security, alienation from society, self-confidence and loss of value are the results of unemployment. As a result of globalization, the increasing competition between enterprises and the need for qualified workforce, business processes on digital platforms, smart factories, industry 5.0 revolutions gradually bring along unmanned business processes, and the Covid-19 epidemic that surrounds the whole world creates a perception of unemployment in employees of all sectors.

Despite the perception of job insecurity, positive affectivity developed within the work environment and processes can provide positive work outputs. While positive affectivity can be achieved through constructive situations such as manager-friend support, social collaborations, and education, effective communication is an important fact. Communication defines objects and people, performs different social roles, teaches the life style of the society that consists of this distribution of roles and instills the necessary evaluation forms for its reproduction. Therefore, communication ensures the continuity and productivity of the social system (Oskay, 2007, p.2). The positive work attitude of the employee depends on healthy communication outside the enterprise (customer and external environment) and within the enterprise (manager and colleagues). For this, the employee must be a good listener without prejudice, and must correctly code what he wants to convey in clear and simple sentences.

When the findings of research were evaluated, as *the first finding of the research*, a significant effect of perceived job insecurity on task

performance was determined. Thus, the higher the job insecurity perceived by the employees, the lower their task performance. Because, when employees' anxiety about unemployment increases, outputs such as inability to fulfill the duty completely and a feeling of worthlessness may occur with the intention of leaving the job. Worrying that the job will not be permanent or being fired reduces hope, and the negative effects of termination raise anxiety. This result has been supported by various researchers (Cheng & Chan, 2008; De Witte et al., 2010; Fischmann et al., 2018, p.610; Mahmood & Rauf, 2018). In a study conducted with Belgian bankers, job insecurity increases job stress and negatively affects work outcomes (De Witte et al., 2010). This situation can be explained by the fact that the perception of job insecurity reduces employees' optimism and well-being (De Witte, 1999). On the other hand, the effect of job insecurity on in-role behavior may vary according to professionalism. At this point, as professionalism increases, the effect of job insecurity increases (Fischmann et al., 2018).

The second finding of the research is the positive and significant effect of positive affectivity on job satisfaction. In this context, as positive affectivity increases, job satisfaction increases. This finding has been supported by the research of Bouckennooghe, Raja, and Butt (2013). However, Connolly and Viswesvaran (2000) did not find positive affectivity as a strong moderator of job satisfaction. As *the third finding of the research*, positive affectivity has a positive and significant effect on task performance. Therefore, as positive affectivity increases, task performance increases. This result is supported by the work of Avey, Luthans, Smith, and Palmer (2010). In this context, employees can achieve their goals with positive emotional states. Work performance increases as they are enthusiastic and devoted with a positive effect (Spector & Jex, 1998). Bouckennooghe, Raja, and Butt (2013) also found a strong relationship between positive affectivity and job performance. However, this relationship becomes meaningless as the job satisfaction of the employees decreases. Job insecurity, which is perceived as *the fourth and fifth finding of the research*, has significant effects on job satisfaction and task performance. According to the research findings, as job insecurity increases, job satisfaction and task performance decrease. This result is supported by a study by Huang et al. (2013) with Chinese employees and supervisors. On the other hand, the perception of job insecurity can negatively affect job attitudes. Emotions that are evaluated negatively, such as boredom and anxiety, consume the necessary resources for effective performance. Keit and Frese's research (2005) supports this conclusion. However, the impact of job insecurity on performance can be altered by leader support (Schreurs et al., 2012).

According to *the sixth finding of the research*, positive affectivity has a mediating effect on the relationship between perceived job insecurity and job satisfaction. Thus, the negative effect of perceived job insecurity on job satisfaction with the mediating effect of positive affectivity significantly decreases. According to *the seventh finding of the research*, positive affectivity has a mediating effect on the relationship between perceived job insecurity and task performance. According to this result, the negative effect of perceived job insecurity on task performance with the mediating effect of positive affectivity significantly decreases. Because employees can increase their motivation with positive affectivity since they have to fulfill their duties in the absence of job security. For example, although white-collar employees feel job insecurity, they want to continue their jobs even if there is no financial reason compared to blue-collar employees because they make long-term investments in their careers (Kurt, 2006). Leaders, especially in times of crisis, such as job insecurity, have to resolve negative events that often create strong emotional responses in employees (Dasborough, 2006). At this point, the charisma of the leader can cause employees to feel positive affectivity and thoughts (Naidoo & Lord, 2008). Employees' feeling of positive emotional state can be provided by workplace friend support, creativity, teamwork, and cooperation. As a result of the research, when the positive affectivity tool variable was included in the model, it was found that the variance in job satisfaction was 78% and the variance in job satisfaction with the mediating effect of positive affectivity was 9%. This result is consistent with the result of Connolly and Viswesvaran (2000) that emotions affectivity the variance in job satisfaction at the level of 10-25%.

Unemployment is a social problem. In this study, a solution was sought for the problem of loss of productivity (low job performance and job satisfaction) of employees under the risk of job insecurity and anxiety. Therefore, *this research makes important contributions to the scientific and management literature* with the result that the negative effects of job insecurity will decrease with the increase of positive affectivity as a result of work behaviors and techniques that will keep motivation high and bring back their self-confidence to employees. Perception of job insecurity may result in decreased task performance and job satisfaction. In this context, managers-supervisors should work to increase positive affectivity and productivity in the workplace. Thus, work stress of the employees can be alleviated. For example, managers can carry out new training and project activities to reduce the perception of job insecurity and to improve the professional competencies of employees. They can offer customized training opportunities to all employees in line with the results of their business processes and career planning studies with orientation during

recruitment and subsequent retraining. According to Volmer and Wollf (2018, p.5), communicating and transferring resources increases a person's mood. On the other hand, managers, within the framework of the *Social Exchange Theory*, they can organize their employees as individuals who are active in social life and responsible for the development of the society they live in, and enable them to carry out activities in the environment, sports, education, culture and arts, social assistance and many different areas and support social development. The manager can increase the positive emotions and business behaviors of the employees by applying strategies such as resource, information and emotional support (Huang et al., 2013). If job insecurity acts as an obstacle instead of change, employee productivity will also decrease. Is it a strategy to prevent job insecurity or a changing strategy? (Piccoli et al., 2021, p. 159).

Neurologically positive thinking power is the first condition for efficient use of the brain. Because the brain is just following the instructions given. In this context, the duty of managers will be to increase the factors that motivate employees by reducing negative working conditions. Managers can build a business environment around recruiting. In this context, business-enhancing technical trainings, employee-enhancing tasks, performance-proportional reward system, manager-employee social activities can increase the positive mood of employees. This research has time and cost limitations. In future studies, it is recommended to increase the sample size, to include the variables of self-efficacy, locus of control and creativity in the research.

REFERENCES

- Aspinwall, L. G. (1998). Rethinking the Role of Positive Affect in Self-Regulation. *Motivation and Emotion*, 22(1), 1-32.
- Avey, J.B., Luthans, F., Smith, R. M. and Palmer, N.F. (2010). Impact of Positive Psychological Capital on Employee Well-Being Over Time. *Journal of Occupational Health Psychology*, 15(1), 17-28.
- Baron, R. M. and Kenny, D. A. (1986). The Moderator–Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic and Statistical Considerations. *Journal of Personality and Social Psychology*, 51(6).
- Beltman, S., Mansfield, C. and Price, A. (2011). Thriving Not Just Surviving: A Review of Research on Teacher Resilience. *Educational Research Review*, 6(3), 185–207.
- Bilmez, F. (2020). The Effects of Sub-Dimensions of Positive Psychological Capital on Task Performance, Job Satisfaction and Emotional Commitment. (Master Thesis). Çanakkale Eighteen Mart University, Graduate Education Institute, Çanakkale.
- Borman, W. C. and Motowidlo, S. J. (1993). Expanding the Criterion Domain to include Elements of Contextual Performance. In N. Schmitt, & W. C. Borman (Eds.), *Personnel Selection in Organizations* (pp. 71–98). San Francisco, CA: Jossey-Bass.
- Bouckennooghe, D., Raja, U. and Butt, A. N. (2013). Combined Effects of Positive and Negative Affectivity and Job Satisfaction on Job Performance and Turnover Intentions. *The Journal of Psychology*, 147(2), 105-123.
- Bryman, A. and Cramer, D. (2011). *Quantitative Data Analysis with IBM SPSS 17, 18 and 19*. Routledge.
- Burgard, S. and Seelye, S. (2017). Histories of Perceived Job Insecurity and Psychological Distress among Older U.S. Adults. *Society and Mental Health*, 7 (1), 21-35.
- Chang, E. C. and D’Zurilla, T. J. (1996). Relations between Problem Orientation and Optimism, Pessimism, and Trait Affectivity: A Construct Validation Study. *Behaviour Research and Therapy*, 34(2), 185-194.
- Chen, F.C., Ku, E.C. S., Shyr Y.H., Chen F.H. and Chou, S.S. (2009). Job Demand, Emotional Awareness and Job Satisfaction in Internships: The Moderating Effect of Social Support. *Social Behavior and Personality*, 37(10), 1429-1440.
- Chen, X., Ma, J., Jin, J. and Fosh, P. (2013). Information Privacy, Gender Differences, and Intrinsic Motivation in the Workplace. *International Journal of Information Management*, 33(6), 917-926.

- Cheng, G. H.-L. and Chan, D. K. S. (2008). Who Suffers More from Job Insecurity? A Metaanalytic Review. *Applied Psychology: An International Review*, 57(2).
- Chiu, R. (2000). Does Perception of Pay Equity, Pay Satisfaction, and Job Satisfaction Mediate the Effect of Positive Affectivity on Work Motivation? *Social Behavior and Personality: An International Journal*, 28(2), 177–184.
- Cohn, M. A., Fredrickson, B. L., Brown, S. L., Mikels, J. A. and Conway, A. M. (2009). Happiness Unpacked: Positive Emotions Increase Life Satisfaction by Building Resilience. *Emotion*, 9(3).
- Connolly, J. J. and Viswesvaran, C. (2000). The Role of Affectivity in Job Satisfaction: A Meta-Analysis. *Personality and Individual Differences*, 29(2), 265-281.
- Çokluk, Ö., Şekercioğlu, G. and Büyüköztürk, Ş. (2010). Multivariate Statistics for Social Sciences. Ankara: Pegem Academy.
- Dasborough, M. T. (2006). Cognitive Asymmetry in Employee Emotional Reactions to Leadership Behaviors. *The Leadership Quarterly*, 17, 163–178.
- Dennis, C., Newman, A., Michon, R., Brakus, J.J. and Wright, L.T., 2010. The Mediating Effects of Perception and Emotion: Digital Signage in Mall Atmospherics. *Journal of Retailing and Consumer Services*, 17 (3), 205–215.
- De Witte, H. (1999). Job Insecurity and Psychological Well-Being: Review of The Literature and Exploration of Some Unresolved Issues. *European Journal of Work and Organizational Psychology*, 8 (2), 155-177.
- De Witte, H., De Cuyper, N., Handaja, Y., Sverke, M., Näswall, K. and Hellgren, J. (2010). Associations between Quantitative and Qualitative Job Insecurity and Well-Being: A Test in Belgian Banks. *International Studies of Management and Organization*, 40(1), 40-56.
- Diamond, L. M. and Aspinwall, L. G. (2003). Emotion Regulation Across the Life Span: An Integrative Perspective Emphasizing Self-Regulation, Positive Affect, and Dyadic Processes. *Motivation and Emotion*, 27(2), 125-156.
- Feinstein, A. H., Vondrasek, D. and Restaurants, C. H. (2006). A Study of Relationships Between Job Satisfaction and Organizational Commitment Among Restaurant Employees. *Work*, 702(1), 895-1795.
- Fischmann, G., De Witte, H., Sulea, C. and Iliescu, D. (2018). Qualitative Job Insecurity and In-Role Performance: A Bidirectional Longitudinal Relationship? *European Journal of Work and Organizational Psychology*, 27(5), 603-615.
- Fornell, C. and Larcker, D.F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39-50.

- Fredrickson, B. L. (2001). The Role of Positive Emotions in Positive Psychology: The Broaden-Andbuild Theory of Positive Emotions. *American Psychologist*, 56 (3), 218- 226.
- Goodman, S.A. and Svyantek, D.J. (1999). Person–Organization Fit and Contextual Performance: Do Shared Values Matter. *Journal of Vocational Behavior*, 55(2), 254-275.
- Grandey, A. (2000). Emotion Regulation in The Workplace: A New Way to Conceptualize Emotional Labor. *Journal of Occupational Health Psychology*, 5(1), 95-110.
- Greenhalgh, L. and Rosenblatt, Z. (1984). Job Insecurity: Toward Conceptual Clarity. *Academy of Management Review*, 9(3), 438-448.
- Hair, J. F., Black, W. C., Babin, B. J. and Anderson. R. E. (2014). *Multivariate Data Analysis: Pearson New International Edition* (7th Ed.). Essex: Pearson Education Limited.
- Hellgren, J., Sverke, M. and Isaksson, K. (1999). A Two-Dimensional Approach to Job Insecurity: Consequences for Employee Attitudes and Well-Being. *European Journal of Work and Organizational Psychology*, 8(2), 179-195.
- Huang, G. H., Zhao, H. H., Niu, X. Y., Ashford, S. J. and Lee, C. (2013). Reducing Job Insecurity and Increasing Performance Ratings: Does Impression Management Matter? *Journal of Applied Psychology*, 98(5).
- Isen, A. M. and Geva, N. (1987). The Influence of Positive Affect on Acceptable Level of Risk: The Person with a Large Canoe has a Large Worry. *Organizational Behavior and Human Decision Processes*, 39(2), 145-154.
- Jawahar, J. I. M. and Carr, D. (2007). Conscientiousness and Contextual Performance. *Journal of Managerial Psychology*, 22(4), 330-349.
- Kaya, Ö., Özok, A. F., Özçalık, F. and Akalp, H. G. (2015). The Effect of Positive and Negative Emotion on Design Unit Employees (The Ready-to-Wear Sector Example). *SDU Journal of Engineering Sciences and Design*, 3(3), 487-491.
- Keith, N. and Frese, M. (2008). Performance Effects of Error Management Training: A Meta-Analysis. *Journal of Applied Psychology*, 93(1), 59–69.
- Kline, P. (2014). *An Easy Guide to Factor Analysis*. New York: Routledge.
- Kurt, Ş. (2006). Psycho-Social Consequences of Unemployment and its Possible Effects on Turkey. *Journal of Social Politics Conferences*, (51), 357-379.
- Luthans, F., Norman, S. M., Avolio, B. J., & Avey, J. B. (2008). The Mediating Role of Psychological Capital in the Supportive Organizational Climate—Employee Performance Relationship. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 29(2), 219-238.

- Mahmood, H. and Rauf, A. (2018). Job Insecurity Affects the Employee Performance with, Mediating Role of Turnover Intention: A Case of Highnoon Pharmaceutical Company Pvt Ltd. *International Journal of Trend in Scientific Research and Development (IJTSRD)*, 2, 1012-1025.
- Meyers, M. C. and Van Woerkom, M. (2017). Effects of a Strengths Intervention on General and Work-Related Well-Being: The Mediating Role of Positive Affect. *Journal of Happiness Studies*, 18(3), 671-689.
- Naidoo, L. J. and Lord, R. G. (2008). Speech Imagery and Perceptions of Charisma: The Mediating Role of Positive Affect. *The Leadership Quarterly*, 19(3), 283-296.
- Oskay, Ünsal (2010). *Kitle Haberleşmesi Teorilerine Giriş*. İstanbul: Der Yayınları.
- Piccoli, B., Reisel, W. D. and De Witte, H. (2021). Understanding the Relationship Between Job Insecurity and Performance: Hindrance or Challenge Effect? *Journal of Career Development*, 48(2), 150-165.
- Probst, T. and Brubaker, T. (2001). The Effects of Job Insecurity on Employee Safety Outcomes: Cross-Sectional and Longitudinal Explorations. *Journal of Occupational Health Psychology*, 6 (2), 139-159.
- Rego, A., Sousa, F., Marques, C. and Cunha, M. P. E. (2012). Optimism Predicting Employees' Creativity: The Mediating Role of Positive Affect and the Positivity Ratio. *European Journal of Work and Organizational Psychology*, 21(2), 244-270.
- Reisel, W. D., Probst, T. M., Chia, S. L., Maloles, C. M. and König, C. J. (2010). The Effects of Job Insecurity on Job Satisfaction, Organizational Citizenship Behavior, Deviant Behavior, and Negative Emotions of Employees. *International Studies of Management and Organization*, 40(1), 74-91.
- Reydet, S. and Carsana, L. (2017). The Effect of Digital Design in Retail Banking on Customers' Commitment and Loyalty: The Mediating Role of Positive Affect. *Journal of Retailing and Consumer Services*, 37, 132-138.
- Robbins, S. P. and Judge, T. A. (2012). *Organizational Behavior*. (Translated by İnci Erdem). İstanbul: Nobel Publishing.
- Roskies, E., Louis-Guerin, C. and Fournier, C. (1993). Coping With Job Insecurity: How Does Personality Make a Difference? *Journal of Organizational Behavior*, 14(7), 617-630.
- Schreurs, B. H., Hetty Van Emmerik, I. J., Guenter, H. and Germeys, F. (2012). A Weekly Diary Study on the Buffering Role of Social Support in The Relationship between Job Insecurity and Employee Performance. *Human Resource Management*, 51(2), 259-279.
- Spector, P. E. and Jex, S. M. (1998). Development of Four Self-Report Measures of Job Stressors and Strain: Interpersonal Conflict at Work Scale,

- Organizational Constraints Scale, Quantitative Workload Inventory, and Physical Symptoms Inventory. *Journal of Occupational Health Psychology*, 3(4), 356–367.
- Sverke, M., Hellgren, J. and Näswall, K. (2002). No Security: A Meta-Analysis and Review of Job Insecurity and its Consequences. *Journal of Occupational Health Psychology*, 7(3), 242.
- Tugade, M. M., Fredrickson, B. L. and Barrett, L. F. (2004). Psychological Resilience and Positive Emotional Granularity. *Journal of Personality*, 72(6), 1161–1190.
- Vander Elst, T., Van den Broeck, A., De Witte, H. and De Cuyper, N. (2012). The Mediating Role of Frustration of Psychological Needs in the Relationship between Job Insecurity and Work-Related Well-Being. *Work & Stress*, 26(3), 252-271.
- Volmer, J. and Wolff, H. G. (2018). A Daily Diary Study on the Consequences of Networking on Employees' Career-Related Outcomes: The Mediating Role of Positive Affect. *Frontiers in Psychology*, 9. doi:10.3389/fpsyg.2018.02179.
- Wang, Z., Li, C. and Li, X. (2017). Resilience, Leadership and Work Engagement: The Mediating Role of Positive Affect. *Social Indicators Research*, 132(2), 699-708.
- Watson, D., Clark, L. A. and Tellegen, A. (1988). Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales. *Journal of Personality and Social Psychology*, Vol. 54(6).
- Wright, T. A. and Cropanzano, R. (2004). The Role of Psychological Well-Being in Job Performance: A Fresh Look at an Age-Old Quest. *Organizational Dynamics*, 33(4), 338–351.
- Yasrebi, A.B., Wetherelt, A., Foster, P.J., Afzal, P., Ahangaran, D.K. and Esfahanipour, R. (2014). *Significant Factors that Influence Motivation of Employees within the Mining Sector, Chapter 144 of Mine planning and equipment selection*, (Proceedings of the 22nd MPES Conference, Dresden, Germany, 14th-19th October 2013). Cham: Springer International Publishing.



Chapter 5

A LITERATURE REVIEW ON THE USAGE AREAS OF THE FUZZY VIKOR METHOD IN FOOD BEVERAGE ENTERPRISES

Yakup DİNÇ¹

Büşra Meltem TÜRKMEN²

1 Assist. Prof Ph.D., Balıkesir University, yakdin@yahoo.com, ORCID: 0000-0002-6533-3987

2 Expert, Balıkesir University, busrameltemturkmen@gmail.com, ORCID: 0000-0001-9953-1749

1.Introduction

One of the most basic issues that people need in their social life outside of home are businesses where they can get food and beverage and accommodation services (Doğdubay and Saatçı, 2014: 3). Food and beverage businesses are commercial organizations whose main purpose is to meet the eating and drinking needs of people outside their own dwellings, produce food and beverage and aim to have a good time by offering the products they produce with quality service (Sökmen, 2003: 20; Şengül and Türkay, 2015: 2).

Nowadays, with the disappearance of the boundaries of globalization, conditions of competition have started to obstruct the continuity of businesses. Competition, which brings serious changes in every sector, is also felt in the service sector. Food and beverage enterprises that meet customer demands and needs instantly and completely are one step ahead of the competition (Ar, Baki and Özdemir, 2014). As a result of globalization the increasing efficiency of competition, food and beverage enterprises have aimed to make the most important decision for the business by using different decision-making methods, starting with the selection of the place of establishment and in the process of procurement, storage, production, personnel selection. It is considered that the establishment which is making the most effective decisions in these areas and is providing the lowest cost and the highest profit, will be able to achieve the long-term goals of the enterprise (Aytekin and Kaygın, 2005).

Multi-criteria decision making (MCDM) methods are considered to be one of the best tools for correct choice (Al-Shammari and Mili, 2019). MCDM methods are frequently used to select the most preferred alternative or the most suitable alternative among many alternatives, especially when evaluation criteria (criteria) are numerous and contradictory (Hsieh et al., 2004; Kaya et al., 2018). Therefore, MCDM methods are considered as a tool to support decision-makers in organizing existing knowledge, rethinking the consequences of alternatives, and discovering their perceptions and needs (Stojčić et al., 2019).

The uncertainty of the conventional MCDM methods appears to be inadequate in addressing the linguistic point of view. For this reason, it is recommended to use MCDM methods with fuzzy clusters to deal with uncertainty in the decision-making process (Kaya et al., 2019). Thus, VIKOR (VIseKriterijumsaOptimizacija I Kompromisno Resenje), one of the multi-criteria decision-making methods, is the most suitable alternative. It focuses on the selection by listing the alternatives under conflicting criteria. Adapting fuzzy logic to VIKOR method defines the fuzzy VIKOR method.

The purpose of this study is to examine the previous studies on the fuzzy VIKOR method, which is one of the multi-criteria decision making methods, and to evaluate the usage areas of the fuzzy VIKOR method, which can be effective in many issues in the decision-making process in food and beverage businesses. Within the scope of the study, literature review of fuzzy set theory, VIKOR and fuzzy VIKOR methods was made. The findings obtained as a result of the literature review were evaluated over the areas of use in food and beverage businesses.

2.Method

The aim of this study is to evaluate the usage areas of fuzzy VIKOR method in food and beverage establishments, which is one of the multi-criteria decision making methods. The model that will meet this purpose in the most appropriate way is the scanning model. For this reason, the “Scanning Model” was preferred in order to objectively determine the current situation, in other words, to find valid and reliable answers to research questions. Scanning model is defined as a research model that aims to determine the characteristics of a group or to describe a past or present situation as it is. Although scanning models have both quantitative and qualitative character, the qualitative approach method was adopted in this study. Qualitative studies are “studies in which qualitative data collection techniques such as observation, interview and document analysis are used, and a qualitative process is followed to reveal perceptions and events in a realistic and holistic manner in the natural environment”. In qualitative research, the aim is not to generalize, but to obtain a holistic picture. In this direction, the subject studied is examined in depth and with all possible details (Büyüköztürk, et al., 2010: 17; Karasar, 2008: 76-77; Yıldırım and Şimşek, 2005: 39).

In this study which was developed in the form of a literature study, a wide literature review was made from domestic and foreign sources and documents that were previously made on the subject. In addition, previous studies based on primary data on the subject were used and these data were used in the analysis of the subject. The literature review reveals the background and content of the research problem (Wiersma, 1995: 406). The literature review fills the gaps and gaps, expands and enriches previous studies (Marshall and Rossman, 1989). Considering all these, it is important to examine the issues such as the application of the fuzzy VIKOR method in food and beverage enterprises, warehouse location selection, supplier selection, establishment location and similar issues, and to examine the written materials in order to gain a different perspective. In the literature review based on this idea, firstly the fuzzy VIKOR method was evaluated in a wide frame and then an evaluation

was made based on the literature findings regarding the usage areas of the fuzzy VIKOR method in food and beverage businesses.

In the literature, there is one study in which the fuzzy VIKOR method is used in food and beverage businesses related to the subject. In the study conducted by Sarioğlu (2016), the applicability of the fuzzy VIKOR method, which has been applied for a long time in industrial enterprises, as a new supplier selection technique in food and beverage businesses was investigated. As a result of the research, it has been concluded that the fuzzy VIKOR method can be applied effectively in food and beverage businesses. The mixed pattern which was applied in the study, the results of an in-depth research on food and beverage companies operating in Turkey, has revealed the applicability of the fuzzy VIKOR method on supplier selection in food and beverage business and the benefits if implemented.

2.1.Fuzzy Cluster Theory

The uncertainty of decision makers in expressing their perceptions and preferences can make it difficult to group the objects with the traditional cluster approach. Zadeh (1965: 338) introduced the fuzzy cluster theory to eliminate this uncertainty. In classical logic, concepts such as yes-no, true-false, black-white, long-short, slow-speed have definite limits. In fuzzy logic, concepts can be classified without strict limitations. For example, expressions such as very hot, very low, high salary and medium height that vary from person to person are used. The degree of membership for a fuzzy cluster element depends on the value of the element, the closer the value of the element is to one the higher is the degree of membership, while value of zero as the degree of membership is understood to be outside of the fuzzy cluster. While in classical logic the membership value of the element is limited to two values such as $\{0,1\}$, in fuzzy set theory this value can be any number in the interval $[0,1]$ (Yavuz & Deveci, 2014).

Nowadays, fuzzy logic, which is applied in many fields, is used to solve problems and judgments involving uncertainty. It may not be possible to express these uncertainties with numerical values. Fuzzy cluster theory was developed to express linguistic variables in the decision-making process in order to analyze the ambiguity and subjectivity in human judgments. In other words, linguistic variables can be used instead of numerical values. Fuzzy multi-criteria decision making models are used to overcome qualitative or incomplete information (Opricovic, 2011: 12983). With Bulanik VIKOR, one of these techniques, linguistic preferences can be easily transformed into fuzzy numbers (Cevikcan, Cebi and Kaya, 2009: 182-183). In addition, since it is often difficult to

reach precise and complete information in the decision-making process, the fuzzy VIKOR method has been developed to enable decision making under uncertainty by applying the fuzzy cluster theory to VIKOR method (Chen and Wang, 2009).

2.2.Fuzzy VIKOR Method

The VIKOR (VIseKriterijumsaOptimizacija I Kompromisno Resenje) method, which is used in multi-criteria decision making, was proposed by Opricovic in 1998 and was used in the solution of multi-criteria decision-making problems by Opricovic and Tzeng in 2004. The general meaning of the shortened expression VIKOR in our language refers to multi-criteria optimization and compromise solution. The method focuses on the selection of the most suitable alternative by listing the alternatives under conflicting criteria (Opricovic and Tzeng, 2004: 447; Opricovic and Tzeng, 2007: 516). The method offers logical and systematic processes in finding the best solution and compromise solution, considering verbal evaluations (Cheng & Wang, 2009: 235). Therefore, the purpose of the method is to find a compromise solution in ranking and selection. The compromised solution obtained with VIKOR becomes acceptable for decision makers as it provides maximum group benefit for the majority and minimum personal regret for those who disagree (Kaya and Kahraman, 2011: 7333). The concept of compromise solution Yun for the first time (1973) was proposed by and is based on the measurement of the degree of closeness to the ideal solution. The compromised multi-criteria solution was developed using the Lp criterion used as the addition function in consensus programming (Lai & Hwang, 1996). VIKOR method uses a multi-criteria ranking index based on a similar principle (Vahdani et al., 2010: 1231).

Fuzzy VIKOR method is the adaptation of fuzzy logic to VIKOR method. It is stated that the most commonly used fuzzy number structure in fuzzy multi-criteria decision making methods is triangular fuzzy numbers. It includes the processes of forming the decision-making group, determining the evaluation criteria and alternatives, evaluating the criteria and alternatives, converting verbal evaluations into fuzzy numbers and determining the compromised solution (Sarioğlu, 2016: 19-20). The Fuzzy VIKOR method offers rational and systematic processes in finding the best solution and compromise solution, taking into account linguistic evaluations, and includes subjective evaluations in the decision process. . The mentioned method; In a blurry environment, it blurs both criteria and weights (Opricovic, 2011).

Fuzzy VIKOR consists of an algorithm that includes 10 different stages using the values of the fuzzy matrix. (Chen & Wang, 2009;

Shemshadia et al., 2011 Yıldız, 2014;). 10 different application stages of Fuzzy VIKOR are as follows; (Ahmad et al., 2015; Nisel, 2014; Afful-Dadzia et al., 2014; Chatterjee et al., 2013; Samantra et al., 2012);

Step 1: First of all, k number of decision makers, n number of alternatives and m number of criteria are determined for the solution of the problem.

Step 2: The equivalents of language variables are defined as fuzzy numbers.

Step 3: Equations with n number of decision makers are combined using a one-to-one assessment.

Step 4: After obtaining a single value for all criteria and alternatives, fuzzy decision matrix and weight matrix of “ I ” and “ j ” criteria are formed.

Step 5: If we evaluate criterion J in terms of utility, the best and worst values of the criterion functions are determined by using the equivalent.

Step 6: Fuzzy values are calculated between equations with the help of minimum and maximum alternative equations.

Step 7: Equation values are calculated through index equivalent.

Step 8: The index values which have been clarified at this stage are calculated by taking the average of the numbers. Then, the alternatives are listed according to the index values obtained. The lowest index value means the best alternative.

Step 9: At this stage, it must be determined whether the best alternative is a compromise solution. A compromise solution may be considered to determine the best solution.

Step 10: The best alternative is chosen and applied.

Recently, the fuzzy VIKOR method has been used frequently among different fields of study. Regarding some of these studies; Site selection, personnel selection, supplier selection, and water resource planning are exemplary. Ince (2007) made the selection of enterprise resource planning software using the fuzzy VIKOR method. Büyüközkan and Ruan (2008) used the fuzzy VIKOR method in the evaluation of enterprise resource planning software in their study. Chen and Wang (2009) applied the fuzzy VIKOR method for company selection in information systems outsourcing projects. Wua et al. (2009) analyzed three banks in fuzzy environment to measure bank performance and used AHP and VIKOR methods. Sanayei et al. (2010) applied the fuzzy VIKOR method to the supplier selection problem in their studies.

Momeni, Fathi and Kashf et al. (2011) used the fuzzy VIKOR method for selecting the most suitable location when establishing a new facility. Tavakkoli-Moghaddam, Mousavi, and Heydar (2011) solved the facility location problem of a home appliance manufacturer using the AHS-VIKOR method. Girubha and Vinodh (2012) used the fuzzy VIKOR method for material selection in the production of auto parts. Deveci and Kuvumlu (2012) also chose a place for a company operating in the food sector with the management of fuzzy VIKOR. Uludağ and Deveci (2013) investigated the applicability of fuzzy VIKOR and fuzzy TOPSIS methods in choosing a location for airport. Apart from these studies, Many applications such as supplier selection (Shemshadi et al., 2011; Akyüz, 2012; Mirahmadi & Teimoury, 2012; Sanayei et al., 2010), contractor company selection (Ramezaniyan et al., 2012), supply chain strategy selection (Görener, 2013a), logistics company selection (Görener, 2013b), personnel selection (Yıldız & Deveci, 2013), project selection (Yıldız, 2014), water resource planning (Opricovic, 2011) were made using the fuzzy VIKOR method.

2.3.Usage Areas of Fuzzy VIKOR Method in Food and Beverage Businesses

Today, food and beverage businesses should choose an effective decision-making method on critical issues related to the business in order to increase their profitability, minimize costs and be permanent in the sector. Taking the most appropriate decisions means increasing productivity and success in businesses. However, it is difficult to make an effective decision among many alternatives and increase the profitability of the business. Fuzzy multi-criteria decision making methods have been developed to solve these problems. These methods reflect the uncertainty in decision makers' preferences and evaluate many criteria at the same time.

It is very important for a food and beverage business to continue its work flow in an effective and efficient system starting from the establishment phase and to maintain its presence among competitors. Therefore, choosing the most beneficial among the alternatives before making any decision in food and beverage businesses can also affect the future of the business. Since food and beverage businesses produce goods and food, they have to consider many different criteria. Food and beverage businesses, which are also a service sector, must provide the best service to their customers.

All departments in food and beverage businesses are almost like a gear, and the operation of this gear without dealing damage is highly relevant to the strategic decisions to be made. The success of one department positively affects other departments, or the failure of one

department affects all units negatively. As a matter of fact, the positive and negative consequences of these effects can also cause harm or benefit to the business. It is possible that any disruption in the supply of materials may negatively affect the production in general or the problems that may arise due to the lack of responsibility of the employee will adversely affect the business. Moreover, it is possible for the selected suppliers to do their job carefully, to meet their material needs on time, or to employ employees with a work discipline and benefit from business efficiency. Considering all these, critical decisions and methods to be used in certain areas in food and beverage businesses are very important.

In the study of Yıldız and Deveci (2013), the personnel selection process based on the fuzzy VIKOR method was examined and in this process, five candidates were evaluated by three decision makers according to five criteria and a ranking was made according to the calculated indexes. The study showed that the fuzzy VIKOR method can be used as an effective method in personnel selection.

In the study carried out by Sarioğlu (2016), the applicability of the fuzzy vikor method, which has been applied for a long time in industrial enterprises, as a new supplier selection technique in food and beverage enterprises was investigated and it was concluded that the fuzzy VIKOR method can be applied effectively with supplier selection in food and beverage enterprises. In addition, it has been determined that the application of the VIKOR method can increase the level of efficiency in choosing the right supplier for food and beverage businesses.

In this part of the study, the application areas of the fuzzy VIKOR method, which is one of the multi-criteria decision making methods, are evaluated and a new opinion is tried to be formed about the possible situations and the effects of the fuzzy VIKOR method in practice are evaluated within the framework of the needs of the food and beverage businesses.

Nowadays, competition, which brings serious changes in every sector, also makes itself felt in the service sector. Businesses that meet customer demands and needs immediately and completely are one step ahead of the competition. At this point, location selection becomes an important issue for service businesses that are in constant contact with the customer. This problem becomes even more important in food and beverage businesses, which have an important place in service businesses.

The place of establishment, which is defined as the area where an enterprise can achieve its goals in the long term, and where it can achieve the lowest cost and the highest profit, is not only commercially important; It also includes dimensions such as income distribution, regional

development differences, environmental factors and incentive measures, externalities that may occur as a result of clustering (Aytekin and Kaygın, 2005: 215). In addition, the changes that will occur in time as well as the current situation are taken into consideration in the selection of the place of establishment (Demirdöğen and Bilgili, 2004: 306) The place of establishment, which is defined as the area where an enterprise can achieve its goals in the long term, and where it can achieve the lowest cost and the highest profit, is not only commercially important; It also includes dimensions such as income distribution, regional development differences, environmental factors and incentive measures, externalities that may occur as a result of clustering (Aytekin and Kaygın, 2005: 215). In addition, the current situations as well as the changes that will occur in time are taken into consideration in the selection of the place of establishment (Demirdöğen and Bilgili, 2004: 306).

One of the most important factors in the provision of quality products in food and beverage businesses is the products provided from suppliers. It is thought that purchasing quality products is a direct factor in the success of the business and in the customers' perspective to the business in the process of connecting with its suppliers and providing products from suppliers (Şengül, 2017: 220).

In our age where food and beverage businesses are obliged to produce quality and low-cost products or services, it is seen that the rapidly developing technological developments and the increase in the globalized competition conditions oblige the companies to these requirements. The most important problem in choosing the most logical supplier is the evaluation of the success of the suppliers (Özder and Eren, 2016: 198). The selection of the supplier, which directly affects the selection of the supplied products, as well as the desired quality of efficiency and quality, is one of the most important factors in the selection of suppliers (Baynal and Yüzügüllü, 2013: 78).

In terms of food and beverage businesses, supplier selection is a multi-criteria decision-making problem that requires consideration of many qualitative and quantitative criteria. By establishing an effective decision-making community, it can be selected which suppliers will be more beneficial to meet the needs of the business, the least cost-effective and better quality of the business among the suppliers with similar goods. Considering the stages of the Fuzzy VIKOR method, the importance levels of the determined criteria are evaluated among the suppliers and compromise solutions can be reached.

Storage location selection problems for food and beverage businesses are problems that can affect businesses in the long run and business

managers have to make strategic decisions. This process is expressed as the process of determining the size and number of warehouse centers in order to meet the demands of demand centers (Feldman, Lehrer, & Ray, 1966; Sharma & Berry, 2007; Brahimi & Khan, 2014).

The fact that the capacity of the warehouse centers is larger than the need requires the enterprise to bear excess costs; if it is too small it means that the business cannot adequately meet the demand from customers. On the other hand, it is extremely important for businesses to have warehouses close to the demand centers in order to meet the consumer demands in the best way, both in terms of cost and the ability of the business to meet the demand. Therefore, the purpose of the warehouse location problem is; In order to minimize the total cost, it is the determination of which demand center requests will be met from which warehouse and the size and location of the warehouses (Drezner, Scott, & Song, 2003; Aghezzaf, 2005; Demirel, Demirel, & Kahraman, 2010). Generally, it is seen as a problem solved by multidimensional decision making methods.

Choosing the appropriate storage location for food and beverage businesses is of strategic importance. The important factors in determining the appropriate warehouse location for the business are labor cost, transportation cost, workplace cost, stock keeping cost, warehouse capacity, average distance to the shops, average distance to the production center, demand, infrastructure conditions, labor force competence and capacity, political environment, legal regulations, economic factors and geographical location factors. Therefore, the selection of the appropriate warehouse location to be selected by considering all these factors will provide great benefit to the business. Considering that a correct and logical result will be obtained by highlighting these variables among the alternatives in the selection to be made using the Fuzzy VIKOR method, it is a strategic decision that will strengthen the position of the business in the competitive environment.

Sustainability of business efficiency, quality service and customer satisfaction are very important in food and beverage businesses. However, achieving this satisfaction is possible by choosing the personnel who will fulfill their responsibilities properly by protecting the mission-vision of the enterprise. For food and beverage businesses, their personnel are among the most important asset items of the business. However, today, rather than the number of these personnel, the characteristics of the personnel and the added values they can add to the business come into prominence. Selection of appropriate personnel will ensure that businesses keep the strength to be competitive.

Personnel selection process is a complex but important process in which different criteria, different relative weights of criteria and these evaluations are expressed in linguistic terms rather than numerical expressions. In addition, the selection of qualified personnel has become an important success factor and a strategic decision for businesses. However, this decision is often complex and made in an uncertain environment. Many quantitative and qualitative criteria that contradict each other must be taken into account at the same time. At this stage, the fuzzy VIKOR method in effective personnel selection in food and beverage businesses creates a compromise solution by using the fuzzy logic theory, maximizing the group benefit for the majority and minimizing individual regret for the rival option.

3. Conclusion and Suggestions

In order to survive in today's competitive environment, food and beverage businesses need to act very strategically in certain areas. Food and beverage businesses, which are the most important part of the service sector, should plan step by step the period from the establishment stage to the time they reach the customer and make effective decisions for the business. The existence of decision-making methods is very important for food and beverage businesses to serve the purpose of their establishment and to make the best decision that can be beneficial to the business on many issues with alternatives.

In the study, fuzzy VIKOR method, which is one of the multi-criteria decision making methods, and a framework for its application areas in food and beverage establishments has been tried to be formed. In this research, it is focused on which areas can be beneficial by using the fuzzy VIKOR method in enterprises. In this study, in which a qualitative method was used, evaluations were made specific to food and beverage enterprises with the findings obtained as a result of the literature review. Within the scope of the research, it was stated that the usage areas of the method in the enterprises can be brought to the forefront in the selection of the establishment location, supplier selection, warehouse location and personnel selection, and it can be effective in the survival of the enterprise with strategic moves. It has been concluded that it is an effective method that will assist in choosing the most beneficial and profitable one among the alternatives for food and beverage enterprises in the decision-making process.

In the literature review, it was found that studies on this subject were examined under specific headings, but not much work was done on food and beverage enterprises. Therefore, the study preserves its originality in this aspect. It is thought that the fuzzy VIKOR method will benefit future

studies with quantitative and qualitative research on the applicability of food and beverage enterprises. In the study, only the fuzzy VIKOR method was mentioned among the multi-criteria decision making methods, and in future studies, many alternative methods that are useful for the sector can be developed by comparing said methods.

References

- Afful-Dadzie, E. Nabareseh, S. and Oplatkova, Z.K. (2014), Fuzzy VIKOR Approach: Evaluating Quality of Internet Health Information. *Proceedings of the 2014 Federated Conference on Computer Science and Information Systems*, 183–190.
- Aghezzaf, E. (2005). Capacity Planning and Warehouse Location in Supply Chains with Uncertain Demands. *The Journal of the Operational Research Society*, 56 (4), 453-462.
- Ahmad, J. Xu, J., Nazam, M. and Javed, M.K. (2015). International Journal of Sciences: *Basic and Applied Research (IJSBAR)*, 19 (1), 1-16.
- Akyüz, G. (2012). Bulanık VIKOR Yöntemi ile Tedarikçi Seçimi. *Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 26 (1), 197 -214.
- Aytekin, A. ve Kaygın, B. (2005). Bilgisayar Destekli İşletme Kuruluş Yeri Seçimi. *Gazi Üniversitesi Orman Fakültesi Dergisi*, 5 (2), 213-226.
- Baynal, K. ve Yüzügüllü, E. (2013). Tedarik Zinciri Yönetiminde Analitik Ağ Süreci ile Tedarikçi Seçimi ve Bir Uygulama. *Istanbul University Journal Of The School Of Business Administration*, 42 (1), 77-79.
- Bezirgan, M. (2019). Analysis of the vision and mission statements in the websites: A research on Five-Star hotels in İstanbul, Ankara and İzmir, Digital marketing strategies for tourism, hospitality and airline industries (Edt. S. J. Duarte, L.O. Lima), 179-196.
- Bezirgan, M. Yetginer, S. (2019). Effect of the festivals on the development of tourism with the support of residents: The case of Zeytinli Rockfest in Edremit, Strategic business models to support demand, supply and destination management in the tourism and hospitality industry (Edt. L.C. Carvalho, L. Calisto, N. Gustavo), IGI Global Publishing, 111-132.
- Brahimi, N. and Khan, S. A. (2014). Warehouse Location With Production, Inventory, And Distribution Decisions: A Case Study in The Lube Oil Industry. *A Quarterly Journal of Operation Research*, 12 (2), 175–197.
- Büyüközkan, G. and Ruan, D. (2008). Evaluation of Software Development Projects Using a Fuzzy Multi-Criteria Decision Approach. *Mathematics and Computers in Simulation*, 77, 464-475.
- Çekal, N., Ertopçu, İ. (2020). Denizli’de Yöresel Tatlılarda Bir Marka: Hacı Şerif, Güncel Turizm Araştırmaları (Edt. M. Sarioğlu). Akademisyen Kitabevi, 189-195.
- Cevikcan, C., Cebi, S. ve Kaya, İ. (2009). Fuzzy VIKOR and Fuzzy Axiomatic Design Versus to Fuzzy TOPSIS: An Application of Candidate Assessment. *Journal of Multiple Valued Logic & Soft Computing*, 15, 181-208.
- Chatterjee, K., Kar, M.B. and Kar, S. (2013). Strategic Decisions Using Intuitionistic Fuzzy Vikor Method for Information System (IS)

- Outsourcing, Computational and Business Intelligence (ISCBI). *Proceedings International Symposium*, 24-26 August, 123-126.
- Chen, L. Y. and Wang, T. C. (2009). Optimizing partners' choice in IS/IT outsourcing projects: The strategic decision of fuzzy VIKOR. *International Journal of Production Economics*, 120 (1), 233-242.
- Demirdöğen, O. ve Bilgili, B. (2004). Organize Sanayi Bölgeleri İçin Yer Seçimi Kararlarını Etkileyen Faktörler: Erzurum Örneği. *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 4 (2), 305-324.
- Demirel, T., Demirel, N. Ç. and Kahraman, C. (2010). Multi-criteria warehouse location selection using Choquet integral. *Expert Systems with Applications*, 37(5), 3943-3952.
- Deveci, M. ve Kuvvetli, Y. (2012). Kuruluş Yeri Seçiminde Bulanık VIKOR Yöntemi ve Bir Uygulama. *Yöneylem Araştırması ve Endüstri Mühendisliği 32. Ulusal Kongresi*, 20-22 Haziran 2012, İstanbul.
- Deveci, B. (2020). Service Quality Measurement of Higher Education Institution in TR21 Thrace Region: A Study on Tourism Students, *Journal of Tourism and Gastronomy Studies*.
- Drezner, Z., Scott, C. and Song, J. S. (2003). The central warehouse location problem revisited. *IMA Journal of Management Mathematics*, 14 (4), 321-336.
- Doğdubay, M. ve Saatçı, G. (2014). *Menü Mühendisliği*. Ankara: Detay Yayıncılık.
- Feldman, E. F. A. T. L., Lehrer, F. A. and Ray, T. L. (1966). Warehouse location under continuous economies of scale. *Management Science*, 12 (9), 670-684.
- Girubha, R. J. and Vinodh, S. (2012). Application of Fuzzy VIKOR and Environmental Impact Analysis for Material Selection of an Automotive Component. *Materials & Design*, 37, 478-486.
- Görener, A. (2013a). Tedarik Zinciri Stratejisi Seçimi: Bulanık VIKOR Yöntemiyle İmalat Sektöründe Bir Uygulama. *Uluslararası Alanya İşletme Fakültesi Dergisi International Journal of Alanya Faculty of Business*, 5 (3), 47-62.
- Görener, A. (2013b). Depo Operatörü Lojistik Firmasının Seçimi İçin Bulanık VIKOR Ve Bulanık Topsis Yöntemlerinin Uygulanması. *İstanbul Üniversitesi İşletme Fakültesi Dergisi*, 42 (2), 198-218.
- İnce, Ö. (2007). Selection of an ERP Software System by Using Fuzzy VIKOR. *Information Sciences 2007-Proceedings of the 10th Joint Conference CD*, Utah, USA.
- Kaya, T. ve Kahraman, C. (2011). Fuzzy Multiple Criteria Forestry Decision Making Based on An Integrated VIKOR and AHP Approach. *Expert Systems with Applications*, 38, 7326-7333.
- Lai, Y. and Hwang C. (1996) *Fuzzy Multiple Objective Decision Making: Methods and Applications*. Lecture Notes in Economics and Mathematical Systems, Springer.

- Mirahmadia, N. and Teimoury, E. (2012). A Fuzzy VIKOR Model for Supplier Selection and Evaluation: Case of EMERSUN Company. *Journal of Basic and Applied Scientific Research*, 2(5), 5272-5287.
- Momeni, M., Fathi, M.R. and Kashef, M. (2012). A Fuzzy VIKOR Approach for Plant Location Selection. *Journal of American Science*, 7 (9), 766-771.
- Nisel, S. (2014). An Extended VIKOR Method for Ranking Online Graduate Business Programs. *International Journal of Information and Education Technology*, 4 (1), 103-107.
- Opricovic, S. (2011). Fuzzy VIKOR with an Application to Water Resources Planning. *Expert Systems with Applications*, 38, 12983-12990.
- Opricovic, S. and Tzeng, G.-H. (2004). Compromise solution by MCDM methods: A comparative analysis of VIKOR and TOPSIS. *European Journal of Operational Research*, 156 (2), 445-455.
- Opricovic, S. and Tzeng, G. H. (2007). Extended VIKOR method in comparison with outranking methods. *European Journal of Operational Research*, 178 (2), 514-529.
- Özder, E. H. ve Eren, T. (2016). Çok Ölçütlü Karar Verme Yöntemi Ve Hedef Programlama Teknikleri İle Tedarikçi Seçimi. *Selçuk Üniversitesi Mühendislik Fakültesi Dergisi*, 4 (3), 196-207.
- Ramezaniyan , R. M., Kazemi , M., Jafari, H. and Majid Elahi, S. (2012). Application of integrated fuzzy VIKOR & AHP methodology to contractor ranking. *Management Science Letters*, 2, 1511-1526.
- Samantra, C., Datta, S. and Mahapatra, S.S. (2012). Application of Fuzzy Based VIKOR Approach for Multi-Attribute Group Decision Making (MAGDM): A Case Study in Supplier Selection. *Decision Making in Manufacturing and Services*, 6 (1), 25-39.
- Sanayei, A., Mousavi, S.F. and Yazdankhah, A. (2010). Group Decision Making Process For Supplier Selection With VIKOR Under Fuzzy Environment. *Expert Systems with Applications*, 37 (1), 24-30.
- Sarioğlu, M., & Arslan, K. (2020). Yiyecek içecek işletmelerinde MOORA yöntemi ile tedarikçi seçiminin uygulanabilirliği. *Elektronik Sosyal Bilimler Dergisi*, 19(73), 254-270. doi:10.17755/esosder.529386.
- Sarioğlu, M. Sezen, T.S. (2020). Mutfak Sanatı (Makarna Hazırlama ve Soslar), Detay Yayıncılık, Ankara.
- Sarioğlu, M, Avcıkurt, C. Sezen T.S. (2020). Gastronomi Eğitiminde Kavram Yanılgıları, *Journal of Tourism and Gastronomy Studies*.
- Sarioğlu, M. (2017). Supplier Selection With Fuzzy Vikor Method In Food And Beverage Enterprises Turkey. *Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 20(37), 357-374.

- Sariođlan, M. (2016). Yiyecek-İçecek İşletmelerinde Satın Alma Müdürlerinin Tedarikçi Seçim Yöntemleri Bilgi Düzeylerinin Belirlenmesine Yönelik Bir Araştırma, *IUJEAS*, 1, 13-30.
- Sariođlan, M. Bostan Sariođlan, A. (2012). The Effect of Underwater Fauna Diversity in The Aegean Sea on Ayvalık Region Culinary Culture and Gastronomy Tourism, Underwater Values and Tourism.
- Sezen, T. S. (2018). Gastronomi Müzeleri. İçinde: A. Akbaba ve N. Çetinkaya (Editörler) ve Yiyecek Tarihi. Detay Yayıncılık, Ankara, 265-277.
- Sharma, R.R.K and Berry, V. (2007). Developing New Formulations And Relaxations of Single Stage Capacitated Warehouse Location Problem (SSCWLP): Empirical Investigation for Assessing Relative Strengths and Computational Effort. *European Journal of Operational Research*, 177, 803–812.
- Shemshadi, A., Shirazi, H., Toreihi, M. and Tarokh, M. J. (2011). A fuzzy VIKOR method for supplier selection based on entropy measure for objective weighting. *Expert Systems with Applications*, 38 (10), 12160-12167.
- Sökmen, A. (2003). *Ağırlama Endüstrisinde Yiyecek ve İçecek Yönetimi*. Ankara: Detay Yayıncılık.
- Şengül, S. (2017). Yiyecek İçecek İşletmelerinin Tedarikçi Değerlendirmeleri: Yöresel Mutfak Ürünlerinin Satın Alma Süreçleri Hakkında Bir Araştırma. *Mehmet Akif Ersoy Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 9 (18), 218-233.
- Şengül, S. ve Türkay, O. (2015). Bölge Restoran Mönülerinin Belirlenmesinde “Yöresel Mutfaklar” Eğitiminin Kullanılması: Mudurnu Örneđi. *Electronic Journal of Vocational Colleges, UMYOS Özel Sayısı*, 1-6.
- Tavakkoli-Moghaddam, R., Mousavi, S. and Heydar, M. (2011). An Integrated AHP-VIKOR Methodology for Plant Location Selection. *International Journal of Engineering*, 24 (2), 127-137.
- Uludağ, A.S. ve Deveci, M. (2013), Kuruluş Yeri Seçim Problemlerinde Çok Kriterli Karar Verme Yöntemlerinin Kullanılması ve Bir Uygulama. *Abant İzzet Baysal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 13 (1), 257-287.
- Vahdani, B., Hadipour, H., Sadaghiani, J.S. and Amiri, M. (2010). Extension of VIKOR method based on interval-valued fuzzy sets. *International Journal of Advanced Manufacturing Technology*, 47 (9-12), 1231- 1239.
- Wua, H.Y., Tzeng, G.H. and Chen, Y.H. (2009). A Fuzzy MCDM Approach for Evaluating Banking Performance Based on Balanced Scorecard. *Expert Systems with Applications*, 36 (6), 10135-10147.
- Yang, J. and Lee, H., (1997). An AHP Decision Model for Facility Location Selection. *Facilities*, 15, 241-254.

- Yavuz, S. ve Deveci, M. (2014). Bulanık TOPSIS ve Bulanık VIKOR Yöntemleriyle Alışveriş Merkezi Kuruluş Yeri Seçimi ve Bir Uygulama. *Ege Akademik Bakış*, 14 (3), 463-479.
- Yu, P. L. (1973). A class of solutions for group decision problems. *Management Science*, 19 (8), 936-946.
- Zadeh, L.A. (1965). Fuzzy Sets. *Information and Control*, 3, 338-353.



Chapter 6

WAREHOUSE MANAGEMENT REGARDING TO FLEXIBLE MANUFACTURING SYSTEMS

Ayşenur ERDİL¹

¹ Asist. Prof.Dr. Ayşenur ERDİL, İstanbul Medeniyet University, Faculty of Political Sciences, Business Administration, <https://orcid.org/0000-0002-6413-7482>

Introduction

The Industrial Revolution was developed to help digital processes emerge. The processes and inventory limitations were presented today by automated production systems. The competitiveness on the international market is advantageous in overcoming these restrictions. In addition to the production setting the main concept is to keep the computer active and to maximize the use of the machine. Two core principles are identified in this approach: supply chain and power management. The management of all supplies and goods in the company is the management of the supply chain. The main aim of supply chain management is to meet customers' requirements by using capital more effectively. The main goal of supply chain management is the most effective utilization of the tools, including logistics and inventory, to meet customers' requirements (warehouse). Capacity planning, on the other hand, is the first approach in production planning. The core interpretation of capacity planning management and implementations is to organize the exchanges between output capacity, storage capacity and time. Manufacturing's objective is to improve economy and society products that are functionally attractive, aesthetically appealing, environmentally friendly, economically feasible, extremely durable, and of excellent standard (Vollmann et al., 1988; Smunt, 1996; Nahmias, 2004; Tolio and Valente, 2006; Richards, 2017).

Warehouse is a business center for the attenuation and processing of goods, or an intermediary location for the storage of raw materials or items before they are required for manufacturing or consumption. Warehouse, as an integral part of warehouses, is a crucial feature of global supply chains and performs a vital role in the success or failure of today's business. If someone looks more carefully at the thorough overview of a corporation's running costs, warehousing amounts to about 20% of transportation costs. Many businesses were driven to adopt the Juste-In-Time (JIT) process, which is an inventory approach to improving business financial return by decreasing operating and associated costs, because of the considerable amount of warehousing capital. However, owing to short lead time tolerance by consumers, criteria for keeping of security inventory and additional restructuring at destination, the lean manufacturing model has been proven difficult to realize the entire removal of the warehouse (Van den Berg, 1999; Chen and Wu, 2005; De Koster et al., 2007; Prajogo and Olhager, 2012).

The emerging function of the warehouse has had a major effect on the development of the Warehouse Management System (WMS). A WMS is a data system Management technology used to increase the performance of warehouse and warehouse planning operations and to verify business requirement to preserve correct inventory. This is an important component

of every supply chain process. Thorough and comprehensive use of WMS will dramatically improve a warehouse's performance and quality, therefore significantly reducing the business's warehousing costs. It is also possible to get a good view of the growth of the warehousing market via the general usage of WMS in the warehouses industry (Kleindorfer and Saad, 2005; Simchi-Levi et al., 2007; Shiau and Lee, 2009; Klappich, 2009b). In the expectation of decreasing supply chain prices, companies are rapidly implementing inventory management practices as today's competitiveness shifts from *among businesses* to *between supply chains*. Efficient control of the supply chain has been a particularly important option to ensure strategic advantage and enhance corporate efficiency. Each operation and part of the supply chain is therefore highly essential. Stocking and warehouse control are two major and cohesive processes that might have an influence on the expense of the supply chain. There is tremendous demand to both raise the limit of processing and reduced store running costs. The use of automated storage and recovery mechanisms is one method of enhancing the throughput performance. To hold running expenses down in a factory, there are several variables to be weighed. Almost all primary warehouse efficiency metrics, including agreement time and expense, reliability, distribution and stock quality, and storage capacity, are influenced by storage location allocation (Cachon, 1991; Ayers, 2002; De Koster et al., 2007; Simchi-Levi et al., 2007; Baker and Canessa, 2009; Bakker et al., 2012).

Automation Territories

Breakthroughs including such Flexible Manufacturing Systems (FMS) and Direct Numerical Control (DNC) inside the manufacturing method reflect the convergence of certain point automation technologies into territories of automation. The current situation of industrial integration is represented by islands of automation. These territories are all overlapping and competing with one another. Computer assisted process planning, automatic management and storage systems, robotics, dynamic product planning for production, computer aided design (CAD), including flexible manufacturing systems may all be essential territories of automation. Manufacturing resource planning (MRP II) programs were added to the original point solutions that were in use to prepare Material Requirements Planning (MRP). This programs used a standard collection of archives or database to handle the entire wide variety of production and inventory management functions in a production facility. Flexible Manufacturing Systems (FMS) and Direct Numerical Control (DNC) are examples of innovations in the manufacturing that reflect the introduction of certain phase automation technologies into automation territories. The current state of industrial integration is represented by areas of automation. These

territories are all overlapping and competing with one another (Vollmann et al., 1988; Smunt, 1996; Nahmias, 2004; Tolio and Valente, 2006) .

Flexible Manufacturing Systems

New innovations are bringing in improvements to building and plant architecture. The industry should therefore change improvements and services for the world to take place on the market. The Flexible Manufacturing Systems (FMS) is a response to improved technologies. A FMS is a series of numerical machines linked by a computerized flux mechanism. This versatile operational centers is helpful when there is a moderate production volume and range of goods. It is very costly to build such a machine. Machines are managed by the central computer in a scalable manufacturing system. Every computer has so many tools and time is minimum to adjust tools that anyone can simultaneously process a multitude of items. Items on pallets are carried on automated guided vehicle systems (AGV). AGV also has central computer management (Smunt, 1996; Nahmias, 2004; Tolio and Valente, 2006). Flexibility is described as a manufacturing function in order to transition to the production of new goods which are typical of highly detailed, small, or standard size manufacturing (Tolio and Valente, 2006; Kapitanov, 2017).

Advantages of FMS (Vollmann et al., 1988; Nahmias, 2004; Tolio and Valente, 2006; Vaziri et al., 2018);

- Improved operation of machines, so system settings and tooling time are reduced; usage increase; FMS decreases the time for transportation set-up and changeover; so lead time,

- Labour rates decreased because of automation and because of automation, it improves efficiency and product Quality,

- Capability to manage various combinations of parts, FMS needs so little time for tooling changes; so machines simultaneously process different types of items,

- Decreased inventories of work-in-process, The system's architecture restricts the number of containers, as well as the amount of work-in-process warehouse.

FMS include disadvantages, too;

- Enhancing difficulty of machining cell processes and power.

- Costs (direct-hardware and area) and (indirect-monitoring software) expenses too much for investments which aren't really justified). FMS seems to have an inconvenience.

The FMS dilemma is becoming more important in FMS architecture due to the sophistication of its capability preparation, although it is popular in all technology irrespective of its key interests. FMS systems include Numerical Control (NC) and Computer Numerical Control (CNC), Automated material handling, DNC control of the material handling system and individual CNC machines, Automated tool changing, Robotic process equipments and Automated machine loading and unloading (Vollmann et al., 1988; Nahmias, 2004; Tolio and Valente, 2006; Vaziri et al., 2018).

In addition, FMS includes the Flexible Manufacturing Cells (FMC) single machine and also the FMS as a whole, which comprises a set of CNC FMC and machines linked by an integrated materials management system and an automated warehouse platform. In the sense of FMS, it is essential to define flexibility. The FMS also includes various structures. These are as below (Vollmann et al., 1988; Nahmias, 2004; Tolio and Valente, 2006; Vaziri et al., 2018);

- Flexibility of goods refers to the potential to adapt very economically and rapidly with next products.

- Versatility in operations means that you can exchange the arrangement of several processes within each design variable.

- Versatility of production refers to the range of component forms generated by FMS.

- Versatility in volume refers to the capacity to profitably run the FMS at various output levels. The versatility of the machine relates to the simplicity of modification needed to manufacture those types of parts. The versatility in the process means that a mix of workers can be created.

- Development flexibility means the ability to efficiently and modularly extend the FMS if required.

- Redundancy of the routing means that breakdowns can be handled and a number of component forms can be continued.

The modular manufacturing method-FMS is an excellent mix of variety and efficiency. The emphasis in this framework is on flexibility instead of system efficiencies. FMS optimized architecture is a key topic and a dynamic challenge. FMS processing approaches vary, but the most general are focused on mathematical programming. FMS is a globally complex production device, and the interdependence of its different elements is little appreciated for such a dynamic system. Because of this difficulty, it is challenging to reliably quantify the FMS's output metrics, which necessitates its development using statistical techniques. A definition

and application of Petri nets for calculating and analyzing FMS output metrics are included in these articles. The bottleneck method, another well-defined mathematical method, was also used for performance comparison of numerical simulations. FMS as an instance has indeed been considered, and its Petri net framework, AweSim concept, and mathematical model have all been developed. To assess device effectiveness, a variety of evaluation criteria have indeed been employed (El-Tamimi et al., 2012; Kapitanov, 2017).

The contemporary specially formatted manufacturing system (MS) monitoring system can have a wide range of functions, including the ability to choose the choice through using CAM flexibility in the event of gathering good supplemental requests, existing development and manufacturing system obtained from experimental modeling and incentives, and individual manufacturing processes evaluation in the event of getting various supplemental requests (Tolio and Valente, 2006; Kapitanov, 2017). Manufacturing systems, especially Flexible Manufacturing Systems (FMS), recognize the importance of achieving international optimized efficiency and responsiveness in complex manufacturing environments. This study proposed a paradigm for control system frameworks that provides a regulatory regime that actively helps guide the sovereignty of judgement between predictive and responsive strategies. Experiments conducted in simulation demonstrate that it is worthwhile to investigate in detail a management structure that adapts the configuration and/or behavior of a manufacturing management system while also increasing the excitability expected in manufacturing facilities (Tolio and Valente, 2006; Wijegunaratne et al. 2014; Jimenez et al. 2015).

Automatic Warehouses

A warehouse is a commercial structure used to store merchandise. Manufacturing companies, distributors, suppliers, wholesalers, transportation companies, customs, has always used warehouses. They are typically big, straightforward structures located in manufacturing plants of cities and towns. They often have cranes and forklifts to move supplies, which are usually mounted on ISO standard pallets. Some factories are fully automated, with no employees on the premises. Containers and inventory are transported using an automatic conveyor belt and automated material handling equipment, which are regulated by computing devices and computers running logistics embedded device. Warehousing plays an important role in supply chain management, but it could do so if it is active in the strategic dimensions of the market. It would include being mindful of the business' planned growth in terms of

potential demand, markets, vendors, consumers, and all related inventory amounts and resource utilization (Emmett, 2005; Richards, 2017).

As a result, the warehouse is critical in supplying the ideal order – on time, in full, damage-free, and with all necessary paperwork. Warehouses have been seen mostly as stockholding positions, helping to balance supply to demand and serving as a bridge between raw resources and product producers and distributors, as well as between manufacturers and distributors, retailers, and/or customers. Inventory accessibility was minimal in the supply chain, and knowledge flow was poor, contributing in businesses keeping more stock than required.

Warehouses have played an important part in the storage of raw materials. Since land and houses were comparatively inexpensive, the expense of storing large amounts of raw materials and finished stock was regarded as the standard and completely permissible. Manufactured products have been very long back then and it was a costly method to change equipment, patterns, colors, designs, and so on. The economy was often seen as supply-driven, with producers manufacturing goods in the assumption which supermarkets would purchase them and customers would consume them (Emmett, 2005; Richards, 2017).

The planning and configuration of warehouse and communications equipment has become so intricate that describing all applicable framework specifications is almost impossible. For any given challenge, the majority of these core principles must be identified. The most basic main values are categorized in the following sections, which are found in a variety of programs. They're divided into two categories: essential information and critical principles. Specific figures, also known as absolute quantities, are directly obtained from averages, counts, algebraic expressions, or distinctions in specific units, or they are reported as master data. At the same time, they reflect the specifications and essential knowledge that a device must have. To analyze and compare the performance of design and sustainable, core characteristics should have important and dense knowledge (Emmett, 2005; Hompel and Schmidt, 2006).

A warehouse is a structure used to store consumer products. Warehouses have been used for a variety of players in the food supply, along with producers, importers, exporters, distributors, and transportation companies. Warehouses are critical components of the transportation industry and their organizational performance decides the transportation industry's efficiency and effectiveness (Hong-Ying, 2009). A warehouse sector is divided into three sections: products accessing management, products resource provisioning, and products distribution management (Hong-Ying, 2009; Van Geest et al., 2021). Warehousing is an essential

component of the supply chain that aids in the effective distribution of products to customers. Manufacturing technology analysis focuses on the timing of manufacturing systems with the aim of minimizing lead time for product creation and supply chain processes. Previous research on lot sizing scheduling conflicts was largely centered inside the manufacturing plant's supply chain. The definition of lot sizing is described and evaluated in the sense of warehouse management. The suggested formula allows the producer to determine the efficient lot size to follow the appropriate dates during transfers by warehouse. In this analysis, the main purpose for searching for an optimum timetable is to understand the issue of warehouse planning, in order to reduce overall delays and number of late orders. The research also highlights the problem of lot size scheduling in the storage system, where the delivery of products has been taken into consideration from suppliers to warehouses or retails (Mishra et al., 2011).

An Automatic Warehouse (AW) is made up of rails, Storage and retrieval machine (S/R) and input/output facilities (s). The racks are combined with aisles for pairs back and back. The S/R equipment are shipping containers which travel between racks and I/O platforms and transfer products. An S/R computer will switch between all the aisles, either on a single nose. The S/R computers are operating in one of two operating modes: single-command (SC) or double-command (DC) loops under supervision of a computerized device. A single transmission, storing or recovery is done during the SC cycle while a recovery process is completed during a DC cycle. a storage operation follows (Bozer andWhite, 1984). It is also possible to use a hybrid operating mode where DC cycles are conducted whenever appropriate, SC cycles are otherwise conducted and S/R machines remain inactive whenever customer queries are not needed (Bozer andWhite, 1984; Emmett, 2005). Warehouse activities and events are classified as follows; (i) Products in or obtaining (ii) Disposed through into warehouse room (iii) Order collection and picking/ packaging (iv) Products outgoing or dispatching

The packaged products warehouse installation is made up of one or two divisions of healthy cells. There are one or two aisles of cells on both sides of these rows. This enables one to position a mobile device in charge of successful relocation there. The mobile device (stacker crane) may provide service to one or more aisles at the same time, and it is common to see several cranes operating in tandem in a single warehouse. To lower costs and achieve high levels of storage versatility, fully automated warehouses have become highly integrated with the production process. The entire warehousing and transportation infrastructure was planned at a university department. The entire warehousing and transportation infrastructure were planned at a Department of the University of Oviedo.

It consists of a stacker crane-driven automatic packing storage system and an autonomous guided vehicle system operated from the same computer system. This study would include a short overview of the automatic warehouse as well as a comprehensive review of the Automated Guided Vehicle System (AGVS) and the intelligence delivery throughout the entire system (Sirgo et al., 1990).

Smart warehousing seeks to improve total quality of service, reliability, and performance whereas reducing costs and defects. Humans use a property infrastructure design methodology and performance tuning experience from the digital architecture design literary works to create the proposed framework. People introduce thus the general business process model including both conventional and intelligent warehouses. The method of business modeling is supplemented by the process of architectural design, which uses architectural perspectives to model reference architectures. Since the construction of the proposed framework, the suggested relevant provisions have indeed been assessed by a case study. The case study has been conducted out in a major food processing industry warehouse and reflects the highest design process and the identify areas for improvement (Van Geest et al., 2021) The figure of automated warehouse is presented on Figure 1.

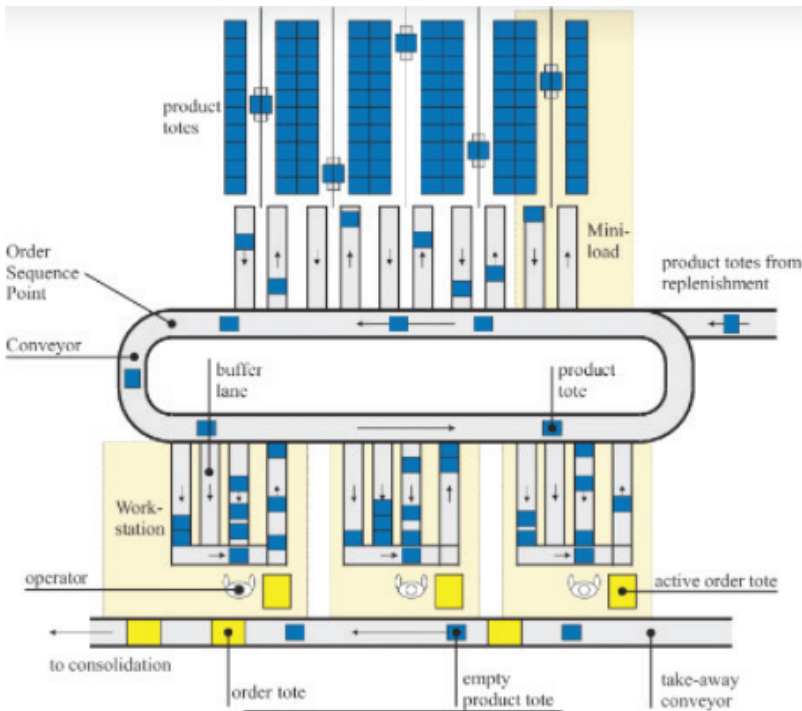


Figure 1. Automated Warehouse (Andriansyah et al., 2010)

Again for simulation requirement, AWs are an outstanding example. The analysis of the automatic storage models does not have a statistical model; they are too complex. For the issue to be formulated, it takes several variables (such as position rack, object type, etc.) and constraints (such as element dimensions, logical restrictions etc). In order to see implications with modifications and unpredictable scenarios, these processes can be analysed more than once for various inputs. Excluding simulation modeling, this would take so much time. Due to this ambiguity, simulation was an extremely useful method to formulate and analyze warehouse issues, particularly when it came to warehouse capacity issues. The transportation of the shipment is called the normative framework mechanism in a warehouse management scheme, with the objective of discharging the shipment or moving it to a waste basket in the container warehouse. The movement of a lever, a pusher, or a rack feeder are examples of sub-processes. The control's job is to unlock these elements and to start the proportional movement operations (Hompel and Schmidt, 2006; Mulcahy and Sydow, 2008).

A cost-effective production requires detailed and accurate preparation to be applied at all levels of production. Economic order quantity (EOQ) or economic production quantity (EPQ) models are often used in different production-inventory settings to reduce costs, prevent order delays, and maintain high efficiency in order to provide a managed and comprehensive planning mechanism. To increase production, multiperiod production-inventory preparation involving multiple items can necessitate outsourcing. In this article, we suggest a production-procurement strategy that combines EOQ and EPQ for a multiperiod, multi-product production-inventory scheme with restricted warehouse space. The architecture aims to establish the ideal values of objective functions, including the volume of output, order volume, inventory, shortages and computer appointments for planning goods. The suggested wording can be extended in the future in many directions. It is advisable to take into account stochastic demand or various discount forms. Furthermore, the shortage is a mixture of missed revenue and reverse order. It is suggested (Vaziri et al., 2018).

Capacity Planning in FMS

In the current environment, as production requirements and demand escalate, consumers must be supplied and remained commercially feasible in a large quantity production plant. To achieve this, it is essential to use the plant completely and combine the products efficiently. Wider product selection and the opportunity to adapt to product mix changes are major factors in increasing market share and maximizing benefit. The field of capacity planning is increasingly emphasized when it comes to operational

management because of the financial advantages of relation to the quality use and because effective capacity strategies are essential. The majority of previous capability planning analysis was restricted to the improvement of capabilities that have a constant contributed to the development. However observational evidence in the background has also shown that certain companies have improved efficiency or learned from the production of much more components. This increases in efficiency are typically linked to individual, technical or operational learning. If businesses employ their capital or human resources in this learning experience, the capability forecasting approach used should take into account the impacts of potential change in production on the development of their capital. Capacity preparation is the method of adapting an organization's capacity to act on evolving or anticipated demands. Capacity planning requires a balance of demand and capacity. Ability is the quantity of demand or manufacturing the infrastructure may assist; demand is the burden placed on the resource by consumers or implementations (Berry et al., 1982; Hillier and Shapiro, 1986; Smunt, 1996).

Capacity preparation is the procedure used to analyze emerging resource demand patterns and expansion plans and improvements until issues arise. Capacity readiness should be a factual audit that enables a company to comply with its existing corporate strategy and its future targets. Capacity preparation commonly starts with the collection, analysis and short-term everyday changes to existing data. Next, times or periods are estimated for short-term requirements, in order to determine patterns for an organisation. Eventually, potential demands are projected on the basis of existing data and expected capital to meet market targets for months to years (Berry et al., 1982; Hillier and Shapiro, 1986; Smunt, 1996).

The main strategy, lag strategy and match strategy are broad divisions of capability management. In expectation of a demand surge, the leadership capacity plan increases capacity. Leading strategy is an offensive strategy to attract buyers to the rivals of the firm. This technique can be disadvantaged because it also leads to surplus inventories that are expensive and often inefficient. (Berry et al., 1982; Vollmann, 1988; Smunt, 1996; Van et al., 2021).

-Lag approach applies to capability development only after maximum capacity is exceeded or exceeded by the demand. This is a more cautious approach, which reduces waste risk but can lead to potential customers' losses.

-The match strategy (also referred to as the monitoring strategy) adds limited quantities of capacity in response to changing consumer demand. It's a more moderate approach.

Warehouse Capacity Planning

In the FMS world with a constant volume warehouse, warehouse capacity preparation is a very interesting term. FMS is able to change the quantity of materials manufactured. The change in the amount of output is connected to the policy of the company. It prefers to expand production volumes as it wishes to gain more sales and market share. But if it feels that the company won't benefit from spending these products. When the second alternative is chosen; warehouse capacity is not a challenge; however the first alternative is chosen, it would be confronted with a problem that is not enough to adapt to demand shifts and this approach can not be embraced without tests (Vollmann, 1988; Nahmias, 2004; El-Tamimi, 2012; Kapitanov, 2017).

It is a very easy case to just consider about increasing quantities of demand. Researchers still speak of FMS and various types of items that improve the problem's and system's interconnectedness. Users could consider a company approach to determine which resources will improve and which will decrease. In this case. Naturally, before determining, consider the potential of the warehouse and income. Companies typically select a small commodity in the store to achieve more benefit in the long-term, in order to maximize output quantities. However it is wrong to embrace this approach without cross-examining through basic equations because the situation is extremely difficult and mathematical is inadequate to address this problem. In order to model a consistent warehouse system including varying output quantities in FMS, simulation is a really valuable, unchangeable method. The precise outcome of this complex method could only be achieved with a simulation (Vollmann, 1988; Nahmias, 2004; El-Tamimi, 2012; Kapitanov, 2017)

Supply Chain Management

Supply chains are mostly referred to as production processes and request chains. All the connections associated with the management of product and service transfer might well be described as a delivery or marketing plan. How effectively actions align through the supply chain to generate sustainable competitive advantage thereby increasing the profitable use of each connection in the supply chain is the true test of performance in the supply chain (Jacobs and Chase, 2015; Fazlollahtabar, 2018). In other words, supply chain management is an automated creating value mechanism for enterprise customers or end users. As a consequence

of reduced warehouse and increased response times to consumer demand for goods and services, a substantial achievement in the supply chain management involved enhanced partnerships between stocking and logistics throughout businesses (Chopra and Meindl, 2015; Lysons, 2016; Monczka et al., 2016).

Supply chain management subsequently progressed to the logistics level, in which other strategic sectors throughout organizations collaborated to integrate production, sourcing, shipping, delivery, and marketing in order to perform more efficiently in the competition. This point was supported through the use of networks, electronic data interfaces, and other technical advancements which rendered knowledge exchange through functional areas more straightforward. The existing situation of supply chain management is referred to by academics as the “Incorporated Supply Chain Management Period.” In the practical fields of corporations and other businesses in the supply chain, collaboration and intelligence are again distributed. Companies also develop supply chains with so many other companies, which are transmission or distribution one-two phases. For instance, a manufacturer would provide a retailer through companies on the basis of just time (Lysons, 2016; Monczka et al., 2016).

The next conceptual step in supply chain management is pointed to as “*Super Supply Chain Management*”. During this process, several management functions throughout corporations join a wider chain that includes all organizational functions of all companies that are engaged in delivering goods and services to purchase through plant to surface. Product creation, promotion, and customer support are also features of these levels. Manufacturing companies help with the production of personalized product models. Both supply chain members would be notified of re-orders and shipment detail. The ultimate aspect of supply chain management: it is no definitely useful sufficiently remain a single sign operation, even though the business is already viable in a dynamic market setting. Long-term sustainability will inevitably be measured by business processes in the changing market current World (Lysons, 2016; Monczka et al., 2016; Fazlollahtabar, 2018). The rapid expansion of the supply chain has also raised the complexity of the positions performed via a warehouse due to globalization. Typically, the conventional delivery warehouse, which is primarily for commodity processing and routing, has developed into a manufacturing warehouse that can be used as cross-docking positions (where goods are transported straightforwardly from internal to outward vehicles without being inserted into inventory), value-added assembly plants (consumer purchasing and marking of goods), reinstatement of output, (along with reverse packaging distribution, broken products or end of life products) and many other operations,

including such support and repair facilities (Ayers, 2002; Chen and Wu, 2005; Baker and Canessa, 2009; Bakker et al., 2012).

Logistics

Supply Chain-Logistics is the intellectual pursuit of efficiently coordinating the movement of commodities, energy, knowledge, and a few other raw materials such as items, services, and humans from the point of origin to the point of sale. Without operational assistance, it is impossible to do either marketing or production. It combines content, shipping, inventory, warehouse management, handling of materials, and packaging. Logistics' operational obligation is always to reorganize manufactured goods, work - in - progress, and completed levels of inventory geographically as desired at the least potential expense. The objective of logistics in an enterprise is to ensure that the correct quantity and efficiency of any computer and operating system is supplied in right time to the right commodity. The problem is not transit itself but the important issues are streamlining and controlling the flow across value-added operations and eliminating investment operations. In current as well as new facilities, logistics in the production environment may be implemented. Production in a processing location is a mechanism that continuously changes. Machines are transferred and new ones introduced, thereby enabling the logistics manufacturing structure to be improved. Logistics offers the measures to obtain consumer reply and operational efficiencies (Mulcahy and Sydow, 2008; Prajogo and Olhager, 2012; Nahmias and Olsen, 2015).

Conclusions

Many changes to the manufacturing sector were brought on by the Industrial Revolution. One of these novel ideas is automation. However, fully integrated produce consistent results are somewhat complex. Methods cannot accommodate this difficulty without communicating with one another. Too many devices started to communicate with one another. Supply Chain Management and Capacity Planning are two of these processes. And everyone's challenge in the warehouse was a combination of supply chain and power preparation.

Warehouse modeling aims to extract the most value from total procedures instead of discrete process phases by deciding the best way to conduct and ship orders under both power preparation and supply constraints. This new approach necessitates thinking beyond the most effective method of selection. Alternatively, the most cost-effective approach to pick and package while still satisfying customer service expectations is determined by the easiest way to package, or optimization.

Due to a defect or a technical deviation from the required standard, the warehouse cannot be run (The stackable conveyor regulation and also the lighting fixtures obstacle could not work).

Logistics providers must have a thorough knowledge of the costs associated with their warehouse service. This is done not only to add to the corporate budget, but also to allow the company to delegate expenses to goods or, in the case of a third-party partnership, to charge for services rendered. In order to have a secure environment, a warehouse should be built and set out in such a way that people can walk through it easily. A well-planned warehouse design and layout would help to minimize injuries, especially those involving containers and tumbles.

In automatic systems, the distinction between automation and closed system monitoring may not always be obvious because indicators always provide input to the influence about the management analysis so that disruptions could be avoided. To fit new and innovative products or to provide more consistency to the issues of the organization, the configuration of a warehouse can require to be modified. The method of maintaining and shipping inventory is becoming much more complicated as supply chain structures change and relationships with suppliers become more supportive. In their attempts to maximize factory activities and eliminate freight costs to the basic essentials, companies have become both service costs and eco - friendly.

References

- Andriansyah, R., Etman, L. F. P. and Rooda, J. E. (2010). Flow time prediction for a single-server order picking workstation using aggregate process times, <http://www.mate.tue.nl/mate/pdfs/11746.pdf>
- Ayers, J. B. (2002). Making supply chain management work (pp. 367–387). Boca Raton, USA: Auerbach.
- Baker, P. and Canessa, M. (2009). Warehouse design: A structured approach. *European Journal of Operational Research*, 193(2), 425–436.
- Bakker, M., Riezebos, J. and Teunter, R. H. (2012). Review of inventory systems with deterioration since 2001. *European Journal of Operational Research*, 221, 275–284.
- Berry, W. L., Schmitt, T. G. and Vollman, T.E. (1982). Capacity planning techniques for manufacturing control systems: Information requirements and operational features, *Journal of Operation Management*, 3(1), 13–25.
- Bozer, Y. A. and White, J. A. (1984). Travel-time models for automated storage/retrieval systems, *IIE Transactions*, 16(4), 329–338.
- Cachon, G.P. (1991). Managing Supply Chain Demand Variability with Scheduled Ordering Policies. *Management Science*, 45(6), 843–56.
- Chen M-C and Wu H-P. (2005). An Association Based Clustering Approach to Order Batching Considering Customer Demand Patterns. *Omega*, 33(4), 333–43.
- Chopra, S. and Meindl, P. (2015). *Supply Chain Management: Strategy, Planning, and Operation*, Pearsons, 529 p.
- De Koster, R., Le-Duc, T. and Roosg-Bergen, K.J. (2007). Design and control of warehouse order picking: A Literature review. *European Journal of Operational Research*, 182(2), 481–501.
- El-Tamimi, A. M., Abidi, M. H., Mian, S. H. and Aalam, J. (2012). Analysis of performance measures of flexible manufacturing system. *Journal of King Saud University - Engineering Sciences*, 24(2), 115–129.
- Emmett, S. (2005), *Excellence in Warehouse Management: How to Minimise Costs and Maximise Value*, John Wiley and Sons, Ltd, 316 p.
- Fazlollahtabar, H. (2018). *Supply Chain Management Models: Forward, Reverse, Uncertain, and Intelligent Foundations with Case Studies*, CRC Press, First Edition, 400 p.
- Hillier, R. S. and Shapiro, J.F. (1986). Optimal capacity expansion planning when there are learning effects, *Management Science*, 32(9), 1153–1163.

- Hompel, M.T. and Schmidt, T. (2006). Warehouse Management: Automation and Organisation of Warehouse and Order Picking Systems (Intralogistik), Springer, 368 p.
- Jacobs, F.R. and Chase, R.B. (2018). Operations and Supply Chain Management, McGraw Hill, 15th Edition, 785 p.
- Kapitanov, A. V. (2017). Manufacturing System Flexibility Control. Procedia Engineering, 206, 1470–1475.
- Klappich, C.D. (2009b). Stratifying Warehouse management Systems: A Multilevel View, Gartner Core Research. <https://www.gartner.com/en/documents/891412/stratifying-wms-a-multilevel-view>.
- Kleindorfer, P.R. and Saad, G.H. (2005). Managing disruption risks in supply chains. Production and Operations Management, 14(1), 53–68.
- Lysons, K. (2016). Procurement and Supply Chain Management, 9 th Edition, Trans-Atlantic Publishing, 696 p.
- Monczka, R.M., Handfield, R.B., Giunipero, L.C. and Patterson, J.L. (2016). Purchasing and Supply Chain Management, South-Western College/West Publishing, 6 th edition, 890 p.
- Mulcahy, D.E. and Sydow, J. (2008). A Supply Chain Logistics Program for Warehouse Management, Auerbach Publications, 552 p.
- Nahmias, S. (2004), Production and Operation Analysis, 5th Edition, Mcgraw-Hill College, 787 p.
- Prajogo, D. and Olhager, J. (2012). Supply chain integration and performance: the effects of long-term relationships, information technology and sharing, and logistics integration. International Journal of Production Economics, 135(1), 514–522.
- Richards, G. (2017). Warehouse Management: A Complete Guide to Improving Efficiency and Minimizing Costs in the Modern Warehouse, Kogan Page Publishing, 701 p.
- Shiau, J. Y. and Lee, M. C. (2009). A warehouse management system with sequential picking for multi container deliveries, Computers and Industrial Engineering, 58(3), 382-392.
- Simchi-Levi, D., Kamnisky, P. and Simchi-Levi, E. (2007). Designing and Managing the Supply Chain: Concepts, Strategies and Case Studies, London, UK: Irwin/McGraw-Hill., Third Edition, 485 p.
- Smunt, T. L. (1996). Rough-Cut Capacity Planning in a Learning Environment, IEEE Transactions on Engineering Management, 43(3), 334 - 341

- Tolio, T. and Valente, A. (2006). An Approach to Design the Flexibility Degree in Flexible Manufacturing Systems, *Proceedings of flexible automation and intelligent manufacturing conference*, Limerik, 1229–1236.
- Van den Berg, J.P. (1999). A literature survey on planning and control of warehousing systems. *IIE Transactions*, 31, 751–62.
- Van Geest, M., Tekinerdogan, B., and Catal, C. (2021). Design of a reference architecture for developing smart warehouses in industry 4.0. *Computers in Industry*, 124, 1033–43.
- Vaziri, S., Zaretaab, A., Esmaceli, M., and Niaki, S. T. A. (2018). An integrated production and procurement design for a multi-period multi-product manufacturing system with machine assignment and warehouse constraint. *Applied Soft Computing*, 70, 238–262.
- Vollmann T., Berry W., Waybark C. and Homewood, I. (1988). *Manufacturing Planning and Control Systems*, Illinois, McGraw-Hill, 4th edition, 896 p.



Chapter 7

ERROR AND FRAUD IN ACCOUNTING IN TERMS OF ACCOUNTING PROFESSIONAL ETHICS

Neşegül PARLAK¹

¹ Öğr. Gör. Dr., nparlak@odu.edu.tr, Ordu Üniversitesi, Fatsa MYO, ORCID ID: 0000-0002-1669-7389

INTRODUCTION

Establishing and managing the accounting systems of enterprises, which have a very important place in the economic development and growth processes of the countries, are the responsibility of the accounting professional. In the consciousness of this responsibility, accounting professionals are obliged to show the necessary care, attention, and meticulousness neutrally and independently towards all users of information, while performing their professional activities.

Providing accurate and reliable financial information and quality service to all parties interested in accounting information depends on the accounting professional's compliance with professional ethics and awareness of the importance of ethical rules. It is important to internalize ethical rules, alongside legal regulations, for efficient and reliable execution of professional activities. Compliance with ethical rules is very important in protecting professional reputation and establishing professional prestige and reliability.

Professional ethics refers to the action of the members of a profession in accordance with the principles and rules of professional ethics during their professional activity. Ethical principles and rules that professional accountants have to abide by in their professional activities have been determined by national and international authorized regulatory organizations.

Accounting professional ethics is based on the principle of showing the necessary care, and meticulousness, in the execution of accounting transactions. The current accounting system in our country is open to error and fraud due to its flexibility for various situations and other unforeseen reasons. The deliberate wrongdoing of the professional activity is defined as fraud, and the unintentional and unconscious wrongdoing of the activity is defined as an error. Whether the wrong action is unethical or not is related to whether there is an intentional element. The unintentional mistakes made by the accounting professionals generally arise from their ignorance and carelessness.

Quality information production by an individual, who is the main factor of the information production process in the accounting system, depends on his/her compliance with professional ethical rules besides technical knowledge and skills. The commitment of the member of the profession to professional ethical principles in carrying out the professional activity will increase the quality of knowledge and consequently the trust and dignity in the profession.

1. ACCOUNTING PROFESSIONAL ETHICS

1.1. The Concept of Ethics

Ethics comes from the word “Ethos”, which means tradition in Greek, and the corresponding meaning in our language is habit and character (Solomon, 1984: 3). Ethics describes the principles and rules that distinguish right-wrong, good-bad, or fair-unfair (Karacan, 2014: 12). Ethics has been accepted as a discipline that investigates what makes human behavior morally valuable or worthless (Gözener, 2008: 4). According to another definition, ethics can be defined as the moral principles that direct the behaviors of the individual and the personal criteria used by the individual to distinguish between right and wrong (Saban and Atalay, 2005: 50). Ethics means the ability to distinguish right from wrong and the responsibility to do what is right.

During their professional activities, individuals frequently encounter dilemmas between right or wrong due to various reasons. In these dilemma situations, the principles and values that direct the individual to the right behavior are called ethics. Ethics, which is based on a sense of responsibility, is a form of expression of responsibility towards society.

Ethical values are basically the expression of responsibility towards society. It is the set of rules to be followed in individual and social relations and the behaviors that take place within the framework of these rules in order to ensure the social order of individuals living in the same society. Ethical values oblige individuals to distinguish between right and wrong and good and bad in their behaviors with the sense of being responsible to society.

The concepts of ethics and morality are two concepts that are closely related but not the same. The concept of ethics is a discipline that also includes the concept of morality. While ethics is generally accepted as a set of principles and rules accepted by society, it is more formal than morality. Morality, within the framework of the concept of ethics, is the individual's making decisions and developing behaviors according to the traditions and customs of their environment. Basically, ethics, internalized as a moral attitude, is a universal discipline, not a traditional one like morality. Because ethics does not vary according to the location, environment, and situations. Ethics aims to maintain uniformity between purpose and behaviors and actions (Bayrak, 2001: 2).

1.2. Professional Ethics

Since businesses are organizations that operate according to environmental conditions, they interact with their environment during

their decision-making processes. In this interaction, professional ethical values reveal their responsibilities towards all parties interested in business information.

Professional ethics is the evaluation of individuals' practices related to their business life, whether they are good-bad, right-wrong, and just-unjust (Kardeş Selimoğlu, 1997: 144). The purpose of professional ethics is to create a set of facilitating rules that will ensure the trust of the whole society regarding the products and services of the businesses. Professional ethics prioritize the consideration of the interests of the whole society in the execution of professional activities and consists of principles that direct the members of the profession to act within the framework of the ethical rules determined by the professional organizations they are affiliated with, rather than their personal tendencies. Professional ethical values are the values that make an occupation a profession, give an identity to the profession, and set the profession in certain norms (Kardeş Selimoğlu, 2006: 437).

Professional ethics is the reconstruction of the existing general moral principles specifically for the relevant profession and the establishment of professional ethical approaches and rules in the profession. These rules are accepted as the discipline to act in accordance with the moral and professional principles accepted by the profession and society during the professional activity. Professional ethics is the execution of personal moral values, professional characteristics, and responsibilities towards society by the member of the profession in accordance with the principles and rules of professional ethics. The higher the rate of commitment to professional ethics in a society, the higher the respect and trust to the members of the profession in the society.

Professional ethics is in the nature of the self-evaluation of the independence, neutrality, reliability, and professional competence characteristics of the member of the profession and the degree of honesty. The ethical state of an individual's behavior originates from his/her family, education, social environment, religious value judgment, and the organizational culture that exists in the business. While individual ethics, business ethics, and social ethics form the basis of professional ethics, all other parties with which it is in contact are considered as external environmental factors (Akdogan, 2003: 11).

The existence of professional ethical principles and rules is one of the conditions for a profession to be considered a professional profession (Kayar, 2005: 99). The existence of professional ethical principles and rules is one of the conditions for an occupation to be considered a professional profession (Kayar, 2005: 99). Institutionalization of professional ethical

understanding sets the prospective behavior and attitude of the members of the profession during their professional activity. Respect and trust for the member of the profession, who acts in accordance with professional ethical principles and rules increases, and besides commitment to ethical values plays an important role in providing self-control in the profession.

1.3. Ethics in Accounting Profession

Accounting is the science and art of recording financial transactions and events to be expressed in money, classifying, reporting by summarizing, and interpreting their results (Sevilengül, 2005: 11). Quality information needed by parties who demand accounting information is the information that is produced in accordance with the basic accounting concepts, principles, standards, and provisions of the relevant legislation and has the characteristics of being accurate, consistent, understandable, comparable, required, truthful, and timely presented. While producing the financial information that information users need and presenting them through reports, accounting professionals at the same time expand the scope of the information they produce and change their qualities with the influence of developments in economic, social, and technological fields (Marşap, 1996: 119). Information provided by accounting, which is an important element of social and economic life, must be of high quality, as it affects the decisions of all parties interested in this information.

In the globalizing world, the fact that the only goal of businesses is to survive and make a profit in tough competition conditions can cause a conflict of moral values and behavior, and this situation may lead the accounting professionals working for these businesses to unethical behaviors. Accounting professionals' tendency to unethical behavior leads to social degeneration and unfair competition. Since the accounting information system has the responsibility to provide reliable and accurate information to the parties interested in business information, the commitment of the accounting professional to ethical principles and values during the execution of the profession is extremely important in terms of trust and respect for the profession.

Ethics in the accounting profession generally consists of features such as independence, neutrality, honesty, reliability, professional care, and meticulousness, advertising prohibition, confidentiality, etc. It is the symbol of the competence, reliability, neutrality, independence, self-supervision, and honesty of the members of the profession (Daştan, 2009: 285). Since the accounting profession is not a profession that requires only technical expertise, it must be carried out within the framework of ethical principles and rules (Bilen and Yılmaz, 2014: 70). In the accounting profession, ethics is the presentation of reliable information

to the society by giving importance to the existing value judgments of the society, besides compliance to the law and legislative procedures (Gül and Ergün, 2004: 57). In the accounting profession, professional ethics rules have been developed in order to standardize professional practices and to protect the reputation of the profession. These rules are an important element in fulfilling social responsibility in accounting.

Since the parties affected by the professional activities of the accounting professional consist of a wide range of different segments of the society and the transactions made also affect the welfare level of the individuals living in the society, it is necessary for the accounting professionals to exhibit a more meticulous attitude and behavior in their approach to professional ethics (Aymankuy and Sarioğlu, 2005: 125). Providing reliable information by the members of the profession in accordance with the laws and the value judgments of society is a necessity of the information presentation function of accounting. The commitment of professional accountants to professional ethical rules will glorify the members of the profession, protect the profession against offending, and defamatory behavior and increase the prestige of the profession in society. Society will know that professional accountants who carry out professional activities gain power by benefiting from a certain legal regulation and will see that the moral criteria of professional ethics rules are more important than anything else in the performance of the profession.

A professional accountant is a person who has responsibilities towards the whole society in carrying out his/her professional activities. The accountants should present their professional knowledge and experience to all parties who need accounting knowledge within the limits and explanations stipulated by laws and professional organizations related to the accounting profession. Professional accountants may occasionally conflict with moral values and have a dilemma while performing their professional activities. In this case, the accountant's commitment to professional ethical principles and rules plays an important role (Yılmaz et al., 2015: 30).

1.4. Prevention of Unethical Behaviors

In the prevention of the accounting professional's behaviors against the principles and rules of professional ethics, it will be an important step for professional organizations and public institutions to raise awareness on the importance of the issue and to impose penal sanctions for unethical behavior. This is important for the accounting profession and the accountant, who has a responsibility to the whole society, to gain the dignity they deserve and to increase the awareness of the society about the taxation by the state.

Accounting scandals experienced in global markets and studies conducted after these scandals have shown that the most important reasons for the scandals are factors that motivate unethical behaviors such as low-level transparency, increased monetary motives in employees, and the corrupt structure of organizational culture (Yalçın, 2011: 50).

To ensure the trust of the public in the accounting profession and the accountants and to increase professional reputation, professional ethical rules should be adopted and their persistence in practice should be assured. At this point, it is important to raise awareness of professional accountants about professional ethical principles and rules and to impose deterrent sanctions against professionals who do not act in accordance with these rules.

Since the parties benefiting from the accounting information produced from the professional activities of the professional accountant consist of a wide audience, the commitment to ethical principles and rules becomes even more important. As a result of accounting information produced via accounting frauds within the scope of unethical behavior, some of the parties benefiting from this information will acquire unfair gain and some will lose their rights. Accounting professional ethics is an important element in terms of fulfilling the requirements of the social responsibility concept of accounting. Earnings and losses resulting from the unethical practices of the accountant will prevent the accountancy from fulfilling its social responsibility and will negatively affect professional trust and dignity. The concept of professional ethics obliged by the profession plays an important role in solving problems that arise in terms of the accountant's compliance with the ethical principles and rules.

Commitment to ethical principles and rules in the accounting profession makes it necessary to present accurate, complete, and reliable information to society by attaching importance to the existing values of society, besides acting by the law while conducting the professional activity. All parties interested in accounting information must believe and trust in all of the information and decisions presented without hesitation. Providing accounting information by considering the interests of the whole society should affect the lives of all individuals in the society positively. The professional accountant bears the responsibility of all ethical decisions by being honest, confidential, open, understandable, and talented and creating a sense of trust in the whole society.

2. ERROR AND FRAUD IN ACCOUNTING

Mistakes made during the accounting activities reduce the quality of the accounting information produced and cause the information users to

be negatively affected by misleading them. Accounting errors and frauds can be acknowledged as the two main reasons that negatively affect the quality of accounting information and cause the parties interested in accounting information to make wrong decisions. The element that distinguishes error from fraud is whether the act that causes the mistake in the financial statements was made intentionally (BDS, 240: 7). While accounting errors arise as a result of negligence, carelessness, and ignorance, accounting frauds are the result of deliberately producing false information to gain an advantage. The emergence of deliberate accounting frauds in the accounting information system is more difficult than an error. This is because the accountant using fraud during the accounting process also tries to hide these activities while damaging the system.

2.1. Error In Accounting

Error refers to the mistakes made in the accounting activity process without an element of intent. Omission, carelessness, negligence, and ignorance can be counted as the causes of error (Gürbüz, 1990: 60). An error occurs when an individual makes a statement that does not comply with his/her real will during the formation of his/her will or the declaration of it, without any external influence, due to undesirable reasons such as carelessness, imprudence, and fault of the vehicle (Ardıç and Ersol, 2007: 68-69). Doubt about the truth and reality of thought and behavior related to an event or situation removes the error (Pamukçu, 2000: 3). Unconsciously incomplete or incorrect fulfillment of the rules that the professional accountants have to obey while performing their professional activities is considered an error in accounting.

Accounting errors are mistakes made in transactions, records, and accounts related to accounting due to forgetfulness, carelessness, or ignorance (Kepekçi, 1994:9). For accounting science; errors are mathematical mistakes made in financial statements and accounting records or overlooked in the application of accounting principles and unintentional misrepresentation of real data (Çatıkkaş and Çalış, 2007: 188). Accounting errors are mistakes that occur during the recording of accounting transactions due to reasons such as carelessness, ignorance, forgetfulness, and inexperience. The introduction of information technologies into the accounting system has reduced the occurrence level of accounting errors and even eliminated some, but still, some errors may be encountered. Errors arise during the recognition, measurement, presentation, and explanation of financial statement items (TMS 8, Prf.41). If an error is detected in the accounting system, correcting it is an important situation. If the detected error is not corrected, it causes the

parties interested in accounting information to be misled and unable to make correct decisions (Kirik, 2007: 40).

2.1.1. Causes of Error in Accounting

Accounting errors are mistakes made in relation to accounting, arising from the ignorance, inexperience, negligence, and carelessness of the professional accountant. The smooth functioning of the accounting information system is closely related to the competence of the accountant in the relevant legislation and rules in the process of providing accurate and reliable accounting information in business structures that got complicated by technological and economic developments. Accountants who do not have sufficient professional knowledge and experience will have a high probability of making mistakes. Besides, it is important for accountants to show maximum attention and care while carrying out their professional activity. Failure to show the necessary care and attention will likely lead to mistakes.

2.1.2. Classification of Accounting Errors

It is possible to classify accounting errors as mathematical errors, registration errors, forgetting and repetition errors, transfer errors, balance sheet errors, and compensatory errors.

Mathematical errors;are the errors arising from four operations mistakes made in the process of accounting (Küçüksavaş, 2006: 351). Mathematical errors generally occur in the calculation of inventory charts, in the calculation of depreciation amounts, during the creation of payrolls, in the calculation of VAT amount, and during the revaluation process (Irmak et al., 2002: 33). It can be said that mathematical errors have been minimized, thanks to technological information systems.

Registry errors;are errors caused by numerical and accounting mistakes during the recording of accounting transactions. These errors occur in the form of an account name, number errors, and confusion of debt and receivable (Bayraklı et al., 2012: 26-28). With the development of information technologies, these errors are minimal.

Forgetting and Repeating Errors; According to the “principle of periodicity”, which is one of the basic concepts of accounting, the work done in the enterprise should be recorded in the book in the relevant period. According to the principle of periodicity, not recording or registering transactions such as purchases-sales and expenses for the relevant period is a forgetting error. Finding a forgetting error is difficult as there is no record to be inspected. However, it can be prevented by following during the recording of transaction documents. Repetition errors, on the other

hand, are the opposite of forgetting errors, as they occur by recording a transaction as two entries in the ledger.

Transfer Errors; are the inaccuracies made while transferring the ledger entries to another page or another ledger such as a general ledger. Transfer errors occur when a mistake is made in the number or the relevant account while transferring the ledger entries to another page or another ledger. Therefore, transfer errors are made in two ways, namely numerical errors and account errors (Küçüksavaş, 2006: 361).

Balance Sheet Errors; Any transaction written or made in violation of the balance sheet principles will cause accounting errors and fraud. We can classify balance sheet errors as valuation errors and merging of accounts (Irmak et al., 2002: 37-39). Valuation Errors occur when accounting employees make incorrect evaluations in the balance sheet assets and liabilities due to insufficient information. Merging Accounts, errors occur while the businesses are required to track their transactions and related records in separate accounts within the framework of the Uniform Chart of Accounts, nevertheless, they monitor under a single account or offset the accounts to each other.

Compensating Errors; are the mistakes made in order to eliminate a previous error. These types of errors are particularly dangerous because the presence of compensatory errors renders seemingly secure transactions less reassuring. On the other hand, people who are dishonest or careless may deliberately resort to compensatory errors to hide the mistakes they do not want to find or fail to find (Aksoy, 2006: 28).

2.2. Fraud in Accounting

Fraud is any deliberate action or operation to deceive someone. While fraud can be done personally through delivering false information and statements, staying silent to the wrong is also considered a cause for fraud (Ardıç and Ersol, 2007: 71). Fraud is defined as “Deliberate acts involving deception by one or more persons from management, those charged with senior management, employees or third parties to gain an unfair or illegal advantage” (BDS 240: 9). Accounting fraud is the account information producers’ destruction of the transactions, records, and documents of the business to gain benefit (Tax Inspectors Association, 2004: 151). Accounting frauds are false and misleading statements made intentionally and deliberately for various purposes (Bayraklı et al., 2012: 49). Fraud in the accounting information system causes information users to make wrong decisions and, consequently, negatively affects the country’s economy. The history of fraud, which came to the fore with

accounting scandals, actually dates back to accounting history. We can list the features of fraud as follows (Bozkurt, 2009: 60).

- ✓ Fraud is an activity that is carried out secretly by the fraudster.
- ✓ In the act of fraud, the essence is for the fraudsters to benefit themselves.
- ✓ There is definitely an element of intention.
- ✓ The victim is somehow deceived.
- ✓ In any case, the victim person or the victim business suffers from the act of fraud.

In terms of accounting, fraud, unlike error, is the deliberate falsification of the transactions, records, and documents of a business for a certain purpose. Accounting frauds are deliberate irregularities in accounting records and transactions that aim to mislead others. For this reason, it is hard to reveal accounting frauds (Güçlü, 2005: 75). While accounting errors occur as a result of ignorance and carelessness, accounting frauds have an element of intent. The intent is that the perpetrator knows that he/she is committing an act contrary to the law and does this act willingly (Özbirecikli, 2006: 5). Accounting fraud can be done with technical teams, especially nowadays, in which technology has developed so much (Saban, 2006: 60). Fraud, fraudulent transactions, and their consequences are an event that closely concerns and affects not only managers and employees, but also everyone involved in the business. Fraud refers to the intentional misleading and deceptive behavior of business managers, employees, or third parties in an illegal manner to gain benefit. Accounting fraud consists of the following elements (Davia et al., 1992: 49);

- ✓ The guilty person who performed the fraud
- ✓ The culprit's purpose in fraud (intent)
- ✓ Someone ignoring the value of an asset
- ✓ The person whose asset is ignored not realizing it at the time of the crime
- ✓ Culprit gaining benefit from this act

When the opportunity, pressure, and justification elements in the fraud triangle regarding the accountants are examined, it is seen that the opportunity for the accounting professionals is the constantly changing legislation and legal gaps. The pressure element is the taxpayers. Taxpayers constantly pressure accountants in order to pay fewer taxes. Regarding the justification element, due to the tax practices and tax rates

applied in the country, some members of the profession see it as a right to act unethically.

The motives for accounting fraud can be listed as follows (MHUD, 2004: 151):

- ✓ Eagerness to reduce profit distribution
- ✓ Willingness to benefit from undeserved incentives
- ✓ Hiding corruption
- ✓ Desire of the business partners to deceive each other
- ✓ The intention of tax evasion
- ✓ Concealing embezzlement
- ✓ The intention of showing stock prices different than they really are

Accounting frauds are divided into two groups; the frauds by business management and the frauds by employees. The causes of accounting fraud made by the business management are; the concealment of the embezzlements, the desire of the business partners to deceive each other, eagerness to reduce profit distribution, concealment of corruptions, the desire to benefit from the undeserved incentives, and the intention of tax evasion (MHUD, 2004: 151). The causes of fraud by the business employees are; the element of pressure, the element of opportunity, and the effort to justify. When the impulses of pressure, opportunity, and justification come together, they form a fraud triangle (Bozkurt, 2009: 167-168).

2.2.1. Types of Accounting Frauds

Types of accounting fraud are; deliberate errors, unrecorded transactions, recording before or after the transaction, balance sheet and computer fraud, fake accounts, document fraud, misuse of assets, corruption, and immoral behavior (Çelik, 2010: 27).

Deliberate errors; Accounting errors are based on ignorance and carelessness. Accounting errors deliberately involving an element of intention to gain benefit is considered fraud. In accounting errors, when mistakes are made intentionally to gain a benefit, they create deliberate errors (MHUD, 2004: 69).

Unrecorded Transactions; Unrecorded transaction, in general, is defined as any economic transaction outside the control of public authorities. The scope of unrecorded transactions includes both economic activities prohibited by law and economic activities that are not deliberately

recorded or documented, even though they are not prohibited by law. Certain activities, despite both economically productive and completely legal, are hidden from public authorities for various reasons. Unrecorded transactions; are when documents that need to be arranged are not arranged, received, and not reflected in the book records (Karakoç, 1997: 99).

Recording Before or After Time; means that accountants record transactions before or after they occur for the purpose of gaining benefit. Recording the transaction as of a date before or after the realization date indicates the existence of a hidden purpose. The consequences of recording before or after the transaction cause all parties dealing with the accounting information to be mistaken. Fake Accounts; is to create misleading accounts with fake names in order to hide income or increase costs.

Document Fraud; A misleading document is a document based on an actual transaction or situation but reflects this transaction/situation contrary to facts in terms of nature/amount. A fake document, on the other hand, is a document that is issued as if a transaction/situation exists, even though it is not real.

Arrangement and Use of Destroyed Document and Ledger; Destruction of ledger and documents; It is the state of erasing, scraping, scratching the various texts and numbers in the books and documents, making the first written unreadable and replacing them with new numbers. Not submitting the ledger and documents to the tax inspection authorities during the examination, although they are determined by notarization records or other copies, is called concealment.

Balance Sheet Masking; Today, as companies and banks go public and their stocks are being traded on stock exchanges, almost all of the frauds are based on accounting frauds on the balance sheets. Masking the balance sheet is the different arrangement of the balance sheet for a certain purpose. The purpose of the balance sheet masking is to provide false, misleading information about the economic and financial situation of the business, profitability, and liquidity or to create a false image. In a sense, not showing some debts or liabilities in the balance sheet, showing some asset items more than they are, capitalizing some expenses that need to be written as an expense, not allocating for assets with decreased values, not reserving for the company's incurred liabilities are types of balance sheet masking.

2.3. Causes of Fraud in Accounting

The most common reason for resorting to accounting fraud is tax evasion. For this purpose, taxpayers resort to various means. The most important of these can be listed as follows (Küçüksavaş, 2006: 372):

Buying fraud; Transactions made to reduce the period income and aim to evade tax are called buying fraud. Buying fraud; can appear as unrecorded or hidden buying, buying with a high price, and deregistering buying discounts (Küçüksavaş, 2006: 373).

Sales fraud; Sales fraud occurs when the cost of goods sold or services provided is recorded in the accounting records as less than the original amount, in other words, the sale is made at a different price, and the difference is collected by the business owners. Sales frauds are mostly seen in sales through fake companies during the black market periods and in exports due to limited control possibilities abroad (Sonsuzoğlu, 1996: 97).

Increasing operating expenses; Showing the costs of the business higher and thereby submitting a lower tax base for tax payment will result in paying less tax and increasing the business assets fraudulently.

Transferring special expenses to the business; appears when special expenses that are not related to the business are shown within the operating expenses. These expenses include; personal expenses, travel, hospitality, aid, donation, gifts, financial expenses, household expenses, lighting, heating, communication, water, doorman expenses, private debt interest, and personal insurance premium (Küçüksavaş, 2006: 373).

Hiding incidental expenses; Incidental expenses are types of expenses that are unrelated to the normal activities of a business.

In addition to the effect of accounting errors and frauds on the economy, they also affect the tax revenues, which are the most important income of the state. During accounting transactions, tax losses can be caused by showing less income and more expenses (Bayraktar, 2007: 12). It is important for the professional accountants to declare the tax, which is an important source of income for the state, correctly. Since professional accountants act as a bridge between the taxpayer and the state, they also have the responsibility of raising tax awareness and directing the taxpayers correctly. The main responsibility for taxpayers to declare the tax correctly falls to the professional accountants and tax auditors.

Although fraud can be revealed by the efforts of the personnel or managers of the company, the existence of an effective internal control system in the business ensures that errors and frauds are reduced (Hatunoğlu et al., 2012: 177).

3. Accounting Error and Fraud in Terms of Professional Ethics in Accounting

Erroneous and fraudulent transactions, produced as a result of failing to comply with ethical rules in accounting information systems, will cause

the financial statements not to reflect the truth and the reality, and the parties interested in accounting information will make wrong decisions and damage the economic structure of the country. Minimizing erroneous and fraudulent records and transactions in the accounting process will ensure that accurate, clear, understandable, and reliable information is provided to the parties dealing with the financial statements. For this purpose, legal regulations are made that oblige ethical behavior within the framework of ethical rules published by professional organizations in the national and international arena. Legal regulations will provide assurance that the members of the profession provide accurate, neutral, and reliable information with the awareness of social responsibility towards the whole society while performing their professional activities. Ethical principles and rules determined by legal regulations and professional organizations have a determining role in the characterization of professional activity as unethical. Failure to comply with the determined principles and rules is considered unethical behavior.

Ignorance and carelessness are important reasons for a member of the profession to make errors. Another reason can be shown as continuous changes in legislation. An accountant who is stuck between the changes made in the legislation and the follow-up of these changes and the workload may make accounting errors. Likewise, the failure of the taxpayers to submit their accounting information on time may be another cause of the error. Today, necessary training and conferences should be given about the constantly changing legal regulations to ensure that the members of the profession better understand and apply the laws and regulations that have come into force.

It can be said that the most important reason for the accountants resorting to fraud is the desire to show the business status differently than it is to the parties interested in accounting information. For example, providing more loans from lenders tends to show financial statements better, while the desire to pay less tax to the Government tends to make their financial statements look worse. Due to the gaps arising from the legislation, the accountant is caught in the middle of the taxpayer and the state, the concepts of right and wrong, ethical and unethical. Therefore, the accountant resorts to fraudulent transactions by being in a difficult situation in the face of pressure-level demands of the taxpayer. The financial dependence of the accountants on the taxpayers and the risk of losing their job if they do not act in favor of the taxpayer make the situation even more difficult. Justice should be ensured in the distribution of taxpayers among accountants. In this way, both the competition between the accountants will be over and it will be easier for the accountants, who are free from

the fear of losing the taxpayer, to object to the unethical requests of the taxpayers.

Accountants, using their professional knowledge and experience to take advantage of legislative deficiencies, resort to making erroneous transactions and mislead information users. In particular, it can cause a decrease in tax income, which is one of the important income sources of the state. Judgment of laws and legislative provisions against fraudulent transactions in accounting as a crime and the existence of penal sanctions when they occur causes the accountant to deliberately perform erroneous transactions.

The issue of error and fraud is the most important subject related to professional ethics in accounting. Errors refer to actions taken unconsciously and unintentionally. Likewise, accounting errors include account or calculation errors that occur unintentionally. The essence of errors of many different types and forms is that they are unintentional, and can be corrected when noticed. Accounting fraud, on the other hand, deviates from error and is completely unethical, since it is done intentionally and has a purpose of benefit. In other words, where there is accounting ethics, one may encounter errors, but not frauds. Company managers and/or owners may resort to various frauds to reduce the tax they will pay. Frauds are generally made due to self-interest or the pressure of profit. It is essential that a successful accountant performs the knowledge held responsible by the profession accurately and completely. Therefore, there is no accountant who does not make errors, but there are accountants who do not resort to fraud.

Negative developments in recent years have brought ethical and trust debates to the agenda in the accounting profession as in every field of society. In an accounting information system, the accuracy and reliability of the information presented will help the parties interested in accounting information to make the right decisions, ensure that the necessary importance is given to the profession, and will increase the reputation of the profession. A professional accountant is a person who has responsibilities to all parties dealing with accounting information. The accountant should present his/her professional knowledge and experience to the relevant parties within the limits and explanations stipulated by the relevant laws and professional organizations. Professional accountants may occasionally conflict with moral values while performing their professional activities. In these conflict situations, the accountant's commitment to professional ethical values plays an important role.

There are many methods in accounting to create a culture of ethics in the profession and to ensure its sustainability. Accounting concepts

and principles, accounting standards, and other relevant legal regulations should be seen as the top priority elements to be followed during the professional activity. The content of professional education should include ethical principles and rules. In addition to measuring knowledge when joining the profession, the professional ethics aspect should also be evaluated at the end of internships, namely, opinions about the ethical side of the intern should be obtained from the units where the internship is made. Taking the opinions of accounting professionals, non-governmental organizations related to accounting, and accounting instructors in the laws and regulations to be issued are measures that may be effective in reducing fraud and error. As a result of such practices, the accounting professional ethics and the interests of the society will be protected.

REFERENCES

- Akdoğan, H. (2003). Muhasebe Meslek Etiğinin Kamunun Aydınlatılmasındaki Önemine Meslek Mensuplarının Yaklaşımları, Anadolu Üniversitesi Basımevi, Eskişehir.
- Aksoy, T. (2006). Ulusal ve Uluslararası Etik İlkelerine Yönelik Karşılaştırmalı Bir İnceleme: Muhasebe Meslek Etiği, Yetkin Yayınları, Ankara.
- Ardıç, O. Ve Ersol, E. (2007). Borçlar Hukuku, Ankara, Agon Bilgi Akademisi.
- Aymankuy, Y. ve Sarioğlan, M. (2005). Muhasebe Meslek Mensuplarının Meslek Etiğine Yaklaşımları Ve Balıkesir İl Merkezinde Bir Uygulama, Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 8 (14), 23-45.
- Bayraklı, H. H. Erkan, M. ve Elitaş, C. (2012). Muhasebe Ve Vergi Denetiminde Muhasebe Hata ve Hileleri, Ekin Basım Yayın.
- Bayraktar, A. (2007). Türkiye’de Muhasebe Hileleri Tarihi, (Yayınlanmamış Yüksek Lisans Tezi). Trakya Üniversitesi, Edirne
- Bilen, A. ve Yılmaz, Y. (2014). Muhasebe Mesleğinde Etik ve Etiklerle İlgili Çalışmalar, Dicle Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 2 (6), Yaz, 57-72.
- Bozkurt, N. (2009). İşletmelerin Kara Deliği Hile, 1. Baskı, İstanbul, Alfa Yayınları. İstanbul.
- Çatıkkaş Ö. ve Çalış, Y. (2007). İşletmelerde Muhasebe Hilelerinin Önlenebilmesi İçin Hile Belirtileri, MÖDAV, İstanbul.
- Daştan, A. (2009). Etik Eğitiminin Muhasebedeki Yeri Ve Önemi: Türkiye Değerlemesi, Marmara Üniversitesi İİBF Dergisi, 26(1), 281-311.
- Davia, R. Howard, C. Patrick Coggins, John C. Wideman ve Joseph T. Kastantin. (1992). Management Accountant’s Guide To Fraud Discovery And Control, John Wiley & Sons Inc.
- Gözener, E. (2008). Etik ve İşletme Etiği Üzerine, Bilim ve Sanat Dergisi, S.19, ISSN:1037-1785.
- Güçlü, F. (2005). Muhasebe Denetimi, 1.Baskı, Detay Yayıncılık, Ankara.
- Gül, K. ve Ergün, H. (2004). Muhasebe Mesleğinde Etik, Muhasebe Ve Denetime Bakış Dergisi, 11, 53-77.
- Gürbüz, H. (1990). Muhasebe Denetimi, Bilim Teknik Yayınevi, İstanbul
- Hesap Uzmanları Derneği (HUD). (2004), Denetim İlke ve Esasları, 3.Baskı, İstanbul.
- Irmak R. Kurnaz, G. Çağlayan, B. ve Bal, B. (2002). Muhasebenin Genel Esasları Muhasebe Hata ve Hileleri İle Bunların Tespit Yöntemleri ve Hesapların Denetimi, Vergi Denetmenler Derneği Yayınları, Ankara

- Karacan, S. (2014). Etik Kavramı ve Muhasebe Meslek Etiği. İstanbul, Umuttepe Yayınları.
- Karakoç, Y. (1997). Türk Vergi Yargılaması Hukukunda Delil, Denge YMM AŞ Yayınları, İzmir.
- Kardeş Selimoğlu, S. (1997). Muhasebe Meslek Ahlakı (Etiği) Yaklaşımı, III. Türkiye Muhasebe Denetim Sempozyumu Bildiri Kitabı, İSMMMO Yayınları, Yayın No: 20, (Alanya. 30 Nisan – 4 Mayıs 1997).
- Kardeş Selimoğlu, S. (2006). Türk Muhasebe Uygulamalarında Etik, Mali Çözüm Özel Sayı, 437-456.
- Kirik, Z. (2007). Muhasebe Hata Hileleri İle Muhasebe Mesleğinde Etik: Afyon Karahisar’da Muhasebeciler Üzerine Bir Araştırma. Yayınlanmamış Yüksek Lisans Tezi, Anadolu Üniversitesi Sosyal Bilimler Enstitüsü, Eskişehir.
- Küçüksavaş, N. (2006). Genel Muhasebe İlke ve Uygulamaları, 9. Baskı, Beta Yayınları, İstanbul.
- Marşap, B. (1996). Muhasebe Mesleği Fonksiyonları ve Meslek Mensuplarının Nitelikleri, Yaklaşım Dergisi, 37, 119-123.
- Maliye Hesap Uzmanları Derneği (MHUD), (2004). Denetim İlke ve Esasları, Acar Matbaası, İstanbul.
- Özbirecikli, M. (2006). Bağımsız Denetçinin Müşteri Firmanın Yolsuzluk Eylemi Karşısındaki Tutumu: Şirket Yolsuzluk Vakaları Ve Yasal Düzenlemeler Çerçevesinde Bir İnceleme, Muhasebe Denetime Bakış Dergisi, Yıl:5 Sayı:18.
- Pamukçu, A. (2000). Muhasebedeki Hat ve Hilelerin Raporlama İlkeleri Yönünden Değerlendirilmesi, Yüksek Lisans Tezi, Marmara Üniversitesi Sosyal Bilimler Enstitüsü, İşletme Anabilim Dalı, Muhasebe ve Finansman Bilim Dalı, İstanbul.
- Saban, M. ve Atalay, B. (2005), Yönetim Muhasebecileri Açısından Etik ve Etik Davranışın Önemi, Muhasebe Ve Denetime Bakış Dergisi, 5(16), 49-60.
- Saban, N. (2006). Bir Analiz: Türk Hukuku’nda Hile Kavramının Unsurları, Muhasebe ve Finansman Dergisi. Sayı 31.
- Sakarya, Ş. ve Kara, S. (2010). Türkiye’de Muhasebe Meslek Etiğine Yönelik Düzenlemeler ve Meslek Mensupları Tarafından Algılanması Üzerine Bir Alan Araştırması, KMÜ Sosyal ve Ekonomik Araştırmalar Dergisi, 12(18), 57-72.
- Solomon, R. (1984). Morality And Good Life. New York, Ny: Mcgraw-Hill
- Sonsuzoğlu, E. (1996). Vergi Kaçakçılığı, Vergi Sorunları Dergisi, Ankara.
- Turmob (2014). Muhasebe Meslek Mensupları İçin Etik Kurallar El Kitabı, <https://www.turmob.org.tr/Ekutuphane/Detailpdf/58717b3a-355d->

48d3-8712-B7e9744b0ba4/Muhasebe-Meslek-Mensuplari-İcin-Etik-Kurallar-El-Kitabi--Turkce-----2014. (28.03.2021).

Türkiye Muhasebe Standartları, TMS 8, Muhasebe Politikaları, Muhasebe Tahminlerinde Değişiklikler ve Hatalar https://kgk.gov.tr/Portalv2Uploads/files/DynamicContentFiles/T%C3%BCrkiye%20Muhasebe%20Standartlar%C4%B1/TMSTFRS2017Seti/3-TMS/TMS_8_2017.pdf, (01.04.2021).

Yalçın, S. (2011). Muhasebe Meslek Mensupları ve İşletmelerin Etik Konusunda Tutumları: Türkiye Araştırması, Muhasebe Ve Finansman Dergisi, 52, 47-66.

Yılmaz, E. Yıldırım, S. Bahar, H. (2015). Serbest Muhasebeci Mali Müşavirlerin Mesleki Etik Algısı: Samsun Örneği . Muhasebe ve Finansman Dergisi , (65) , 27-42.