

FUTURE OF PAPER RECEIPTS IN UNITED ARAB EMIRATES

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ABSTRACT

With this applied research the author is attempting to bring forward a highly sensitive aspect of paper receipts used daily. The hazards associated with the use of paper receipts are observed in context with the retailers, consumers, and the society. The research title is focused on the future of paper receipts in the retail industry of UAE.

With this research the researcher has attempted to understand the environmental and health effects caused using paper receipts in SMEs in the retail industry of the UAE, identify the mindset of the retailers towards digital transformation in terms of barriers and opportunities, analyze what does a customer value, what factors can help improve customers experience and to recommend a unified, holistic approach to cater to the digitization phase considering the environment, health, consumers, and businesses

Currently, retailers are spending a lot of their cost on the paper receipt rolls and this elevates the overall printing cost. The key problems associated with the current paper receipt approach is the lack of awareness amongst the retailers. The challenges faced by the retailers to digitally transform. The problem being addressed here is not just limited to retailers but also covers the health of employees and environment.

This report provides a support to the literature to further enable this field of study. Key recommendations have been given to address the issue in hand. Providing support to the retailers, taking initiatives by the government, addressing consumer needs in the way they are expectations are to name a few.

1. Introduction

The world is set up so that when we buy something, we must have a receipt to prove that we made the transaction. Besides serving as evidence of purchase, the receipt may be used for various other purposes, such as for the buyer's daily cash transfer, the seller's sales tracking, or post-sale product servicing. Globalization, urbanization, and new, modern billing and accounting methods are all happening rapidly in today's world. There has been a recent shift in the way receipts were generated; away from traditional handwritten receipts, the new way of getting transaction evidence is the printed receipt. One of the most frequently used paper in printed receipts is Thermal paper rolls; these rolls are found in cash registers, adding machines, ATMs, and other similar devices. Despite offering an advancement, Thermal Paper still poses a great threat to both our environment and health.

This chapter of the research aims to provide the intended readers with an overview of the research. The study's goal is to forecast the future of paper receipts in the UAE retail industry. The chapter begins with the research's background and focuses on the research questions, goals, and objectives. Finally, the chapter summarizes the next chapters to acquaint the reader with the research structure.

1.1 History of UAE Economy

Before the discovery of oil in the mid-20th century, the economy of the United Arab Emirates was primarily on fishing, seafaring, and the pearl industry (Sherouk Zakaria, 2018). After the beginning of oil production and export from the 1960s, UAE's economy started transforming (Butt, 2012, pp.231–248). The Abu Dhabi National Oil Company's subsidiary had the largest oil concessions – Abu Dhabi Marine Operating Company, partially owned by French, British and Japanese interests (Henni, 2013). However, despite being the most diversified economy in the GCC, the UAE remained heavily reliant on the oil industry for its income (Nagraj, 2015). For that reason, over the past few decades, the country has started to look for additional sources of revenue. Over the last twenty years, the UAE's economic diversification program has led to the rise of several non-oil industries, which now make up a substantial percentage of the country's GDP (Mishrif and Al Balushi, 2018). These include manufacturing (12.6%), commerce and hotels (11.4%), real estate (9.1%), construction (8.6%), transportation (7.3%) and finance and insurance (6.4%).

The UAE continues to develop high-end tourism services and experiences for its visitors, with some of the most luxury hotels, malls, and restaurants to choose from. In addition, the UAE is starting to see the emergence of local manufacturing as a new source of economic development.

Arab's World's second-largest economy UAE witnessed a contraction of 5.8% in GDP in 2020 but is likely to grow by 2.5% in 2021 (Barbuscia, 2021).

1.2 UAE Government Initiatives

The UAE government has always been focused on the wellbeing of its people, both UAE nationals and expatriates. As the country plans for Expo 2020, there is an expectation of increased economic growth because of tourism, employment opportunities, and infrastructural growth (Hashmi and Rose, 2021). To achieve the expected infrastructural development plans and to keep the economy smooth and moving, the federal and local government of UAE has spent about 395 billion on recovery since the beginning of the pandemic (Kumar, 2021). The Central Bank's Targeted Economic Support Scheme, AED 50 billion worth of zero-cost loan initiative, was extended to improve the flow of money in the economy until June 2022 (Paul, 2021).

Sustainability as Core

In 2016, the UAE government initiated the sustainable development goals with a set body of legislation (National Committee on Sustainable Development Goals, 2016). Through Expo 2020, the UAE government is preparing to lay the foundation for a sustainable legacy for coming generations, prioritizing human and technological development without compromising ecological and natural resources (Rahal, 2021). Of the various efforts taken by the UAE Government, one of the key initiatives in 2018 has been the launch of the *Dubai Paperless Strategy*.

Dubai Paperless Strategy

As per this strategy, all Government offices of UAE were aimed to go 100% paperless by 2021 to eliminate paper printing. By 2020, 14 government bodies had effectively decreased their paper usage by 64.9 percent, resulting in the yearly use of 169.3 million sheets of paper being eliminated. So far, the reduction in paper consumption has resulted in savings of more than AED725 million and 7.7 million hours of work saved across the government sector. This, in turn, has also had a positive impact on the environment, saving 20,325 trees from being cut down to make paper. The Dubai paperless strategy had an overall contribution to the Government's Sustainability plans while impacting the environment and human health.

1.3 Understanding Retail Industry

History of Retail Industry

The retail industry comprises individuals and companies which are involved in the trade of finished products to end-user. Retailing is considered the last step in distributing merchandise, linking the mass producers to the final consumers. Historically, retail in the Middle East ranged from traditional 'souks' (Arabic meaning Markets) with tiny and independent businesses to modern shopping plazas with supermarkets, hypermarkets, malls, and organized retail chains. Figure 1 below highlights how the retailers of the UAE have evolved over the years:

Figure 1: Evolution of UAE Retailers

Year	Level	Consumer Experience	Type	Receipt Type
1990's	Underdeveloped	Single-Use/Limited product choice	Souks, small shops	Handwritten
2000's	Emerging	Individual stores for core shopping	Small community malls	Handwritten/From printer A4 size bill
2010's	Mature	Multi-Purpose Shopping, F&B destination	Shopping Malls	Machine Printed
2020's	Convenience	Convenience-service oriented experience	Shopping malls, retail centers	Machine Printed

Retail Industry Today and Forecasts

In 2019, the UAE Retail Industry was valued at \$55 billion, and it is anticipated to rise to \$75 billion by 2025. This expansion is fueled by various reasons, including rising per capita income, more tourism, and an increase in expatriates. The retail sector is the highest contributor to UAE's GDP, with a 27% contribution.

Retail Industry – Clothing

The retail industry in the UAE is composed of a 70% share of total retail sales in the non-food category. The increasing rivalry between other non-food businesses, including clothing & Footwear and electronics & equipment, has restricted the value increase as more competitive pricing has emerged. The UAE retail industry is driven by clothing, one of the main non-food sectors. In 2013, the UAE was placed second in China, following the AT Kearney Retail Apparel index. Continued development in the clothing category is fueled by a growing tourist population and an increasingly more disposable group of expats. Luxury kid wear has seen a major inflow of specialized brand boutiques in the clothing segment. Some of the major companies in this sector include MH Alshaya, Landmark Group, and Jawad Business Group. In 2014, 65 percent of the market was represented by the top 10 players. Large local businesses and foreign merchants dominate the retail market in the UAE.

Retail Industry – Food, Electronics, and Others

Home conglomerates, such as Lulu Group, Landmark Group, and Majid Al Futtaim (MAF), have invested heavily in retail areas and now have a dominant role in many parts of the business, including foodstuffs and non-food. For example, MAF Hypermarkets is leading the food retailing business through its worldwide Carrefour brand (MAF holds ownership rights in its MENA activities), while another domestic enterprise, Jumbo Electronics, is the top electronic products vendor in the United Arab Emirates. The UAE market is also very attractive to international merchants because of the huge tourist inflows and local fashion-aware people. Accordingly, Dubai now ranks second in London with the greatest proportion of foreign shops. Also, Dubai is being used as a launch pad for many foreign dealers to penetrate other GCC nations since its open economy and business mood make doing business simpler. These new arrivals heat the UAE's retail landscape, and incumbent businesses actively grow to keep their market share. In addition to its food and beverage options with PieFace, Jamba Juice, and paparazzi, Landmark has introduced an inexpensive Home Box furniture brand, for example.

Retail Industry – What next?

Similarly, Canadian Circle K, which runs 38 shops in the UAE, aims to grow with 28 additional convenience stores. IKEA is establishing the largest distribution center in Dubai, including shops in the United Arab Emirates and Saudi Arabia. Such increasing rivalry in non-food retail channels such as clothing, footwear, and electronics leads to price wars and thus restricts the segment's value development. Government price monitoring restricts retail sales of foodstuffs;

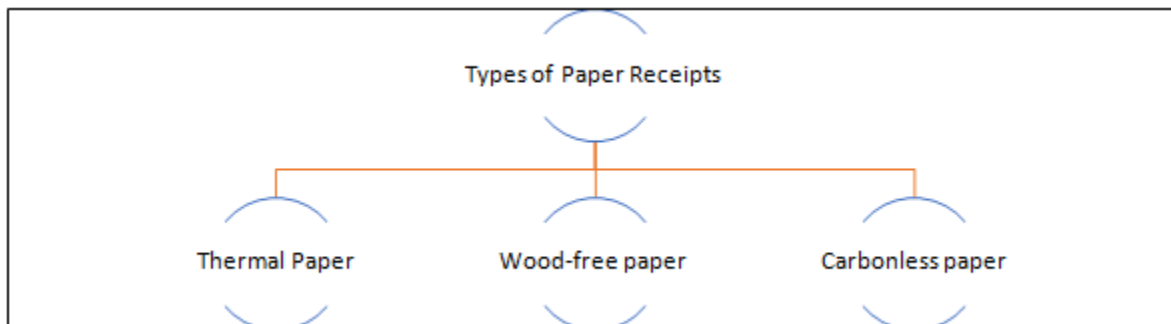
nevertheless, homegrown firms like Union Co-operative Society and Lulu Hypermarkets continue to gain from their inexpensive applications and bespoke products (John, 2021).

1.4 Paper Receipts

About Paper Receipts

Despite the increasingly digital world we live in, where many transactions are done online, paper receipts are still essential for businesses. Consumers may expect to get a receipt for their purchase in every physical business, whether a corner gift shop or a city center retail mall. Paper receipt manufacturing in the United States alone consumes an estimated 12.4 million trees, 13.2 billion gallons of water and emits 4 billion pounds of CO₂ each year. The most used receipt paper worldwide is Thermal Paper because of its cost-effectiveness for businesses.

Figure 2: Types of Paper Receipts



What is Thermal Paper?

Thermal paper is a type of fine paper that has been coated with a substance that changes color when heated. It is utilized in thermal printers, especially low-cost or lightweight equipment like adding machines, cash registers, and credit card terminals. Paper receipts may appear essential in each transaction, yet they offer needless environmental and health concerns. The usage of paper receipts in transactions has a significant negative impact on human health and the environment. BPA and BPS, two well-known endocrine disruptors harmful to human health, are found in thermal paper. The health consequences are startling, with retail personnel and workers often exposed to paper receipts typically having more than 30% more BPA and BPS in their systems than those not exposed to that amount of BPA and BPS. 93% of paper receipts are coated with Bisphenol-A (BPA), which works as a color developer to make the text visible on the receipts.

The retail business has so thoroughly inherited the use of paper receipts that both customers and retailers fail to see its unique health and environmental consequences.

Regulations of BPA in Thermal Papers Globally

Following the precautionary principle, efforts are being conducted worldwide to eliminate or reduce BPA use in thermal papers. Figure 3 provides an overview of the global initiatives being taken by different governments to reduce/eliminate the BPA presence.

Figure 3: Global Initiatives

Countries	Status of use of BPA in thermal paper
Japan	Banned BPA since 2001 (Stieger, 2017)
Belgium	Banned BPA in thermal papers in 2011 (Christensen et al., 2014)
Suffolk County Legislature, New York	Law to ban BPA use in thermal papers starting from 2013 (Kindall, 2009)
Illinois & New York	Ban use of BPA containing receipt paper in 2012 legislative sessions (Tsang, 2019)
Connecticut (USA)	Prohibited BPA use in thermal papers from either 2013 or 2015 depending upon the availability of commercial alternatives before 30 June 2013 (Springer, 2009)
France, Denmark, Sweden, Maryland, Washington, Vermont, Canada, Minnesota, Massachusetts	Banned BPA in thermal papers (Christensen et al., 2014)
European Union	BPA concentration in thermal paper to be reduced to less than or equal to 0.02% weight (200 ppm) before 2 January 2020(Christensen et al., 2014)
South Korea	Developments in restricting BPA use in till receipts
Taiwan	Developments in restricting BPA use in receipts

1.5 Market Movers

UAE market is not entirely out of touch with the concept of digital receipts; however, this market is still untouched by many. Only two companies seem to have some presence in providing software's/application to consumers to get the digital receipts.

Worldwide, currently, 38 companies exist that are in this segment or are working towards building the digital receipts model. They either provide software for the companies through which receipts can be sent via the app, email or they directly target the customers with their applications. Figure 4 below shows a comparative feature review of all the service providers.

Figure 4: Market Players

Name	Year	Geographic	Web	App	Email	Customer Interface
INVOIZ	2019	UAE	Yes	Yes	Yes	Yes
EFATOORA	2018	UAE	No	Yes	Yes	Yes
ADMINAPP	2020	Germany	No	Yes	No	Yes
APPLE CARD	2019	USA	No	No	No	Yes
EQTIQ	2019	Switzerland	No	Yes	No	Yes
DIGIBON	2018	Netherland	No	Yes	No	Yes
ECOSLIPS DIGITISATION SERVICE	2018	South Africa	No	Yes	Yes	Yes
OXEBOX	2018	India	No	Yes	No	Yes
RECEIPT HERO	2018	Finland	No	Yes	No	No
COOP SUPERCARD	2017	Switzerland	Yes	No	Yes	Yes
HADLEY	2017	Australia	No	No	Yes	Yes
SLYP	2017	Australia	No	No	Yes	Yes
TILL BILLY	2017	Australia	No	No	No	No
FLUX	2016	UK	No	Yes	No	Yes
REEBATE.DE	2016	Germany	No	Yes	no	Yes
SCOREBOX	2016	Denmark	No	No	No	No
TAIL	2016	UK	No	Yes	No	Yes
GOOGLE PAY	2015	USA	No	Yes	No	Yes
WALMART	2014	USA	No	Yes	No	Not given
SENSIBILL	2013	Canada / UK	No	No	No	No
INDEX	2012	USA	No	No	Yes	No
FLEX ENGAGE	2011	USA	No	No	No	No
IZETTLE	2011	Sweden	No	Yes	Yes	Yes
KVIRA	2011	Sweden	Yes	Yes	No	Yes
KWICK RECEIPTS	2011	Sweden	No	Yes	Yes	No
PROXIMANT	2011	USA	No	Yes	No	Not given
ITEMIZE	2010	USA	No	Yes	No	Yes

MIGROS CUMULUS	2010	Switzerland	Yes	Yes	No	Yes
ECREBO	2009	UK	No	Yes	Yes	Yes
TRANSACTION TREE	2009	USA	No	No	Yes	Yes
RECEIPT	2009	UK	No	Yes	Yes	Not given
ID24	2008	USA	Yes	No	Yes	Yes

1.6 Problem Statement

As we anticipate economic growth, we also expect an increased number of retail transactions, which means an immediate increase in the number of printed paper receipts. Even though eliminating paper receipts can increase efficiency and cost-saving for businesses, it is crucial to understand their challenges in transforming these e-receipts.

This will be the first in its kind of research, bridging the three key aspects of the future of paper receipts: the impact of paper receipts on the environment, human health, and businesses. It will reflect deeply on the challenges faced by the organization if they plan to digitize, shed light on what the customers want. The author concludes with key recommendations for businesses for both the short term and the long term.

1.7 Research Question

1. To understand the environmental and health effects caused using paper receipts in SMEs in the retail industry of the UAE
2. To identify the mindset of the retailers towards digital transformation in terms of barriers and opportunities
3. To analyze what does a customer value, what factors can help improve customers experience
4. To recommend a unified, holistic approach to cater to the digitization phase considering the environment, health, consumers, and businesses

1.8 Significance of the study

This research will provide insight to customers and retailers about the shifting mindsets due to increased awareness of the environment and health. It will help understand consumers' expectations from the retailers. It will help understand retailers' perspectives to start opting for possibilities that act in the interest of consumers. All the existing and upcoming businesses will help understand the most feasible, cost-effective, and safe option of dealing with their customers and staff.

1.9 Assumptions

This research has certain baseline assumptions which are considered during the primary and secondary research. The researcher has assumed that:

- Information collected from the respondents is not changed in any manner. Everything represented in this study is entirely genuine
- None of the respondents were initially approached to give any certain specific results. All the responses are honest and as per the will of the respondents.

1.10 Abbreviations & Definitions

Figure 5: List of Abbreviations

Word	Meaning
BPA	Bisphenol A, an industrial chemical that is being used to make certain plastics and resins since the 1950s
BPS	Bisphenol A, an industrial chemical that is being used to make certain plastics and resins since the 1960s
NFC	Near-Field Communication (NFC) is a set of communication protocols for communication between two electronic devices over 4 cm
G4 Countries	US, EU, China, Japan
G8 Countries	Canada, France, Germany, Italy, Japan, Russia (now suspended), United Kingdom, United States.
Endocrine Disruptor	Endocrine disruptors are active endocrine substances that can cause adverse effects by interacting or interfering with the endocrine (hormonal) system).
Anti-androgenic activities	Any substance that tends to inhibit the production, activity, or effects of testosterone and other male sex hormones

1.11 Conclusion

This section covers the introductory segment of the research, explaining in detail the key areas of consideration for the topic selected by the author.

2. Review of the Literature

2.1 Introduction

The review of literature will be divided into three broad categories:

- **Thermal Paper and Environment:** This area will focus on the research carried towards the damages caused by the paper receipts to the environment.
- **Thermal Paper and Health:** This area analysis the research that has taken place on the impact of paper receipts on health.
- **Thermal Paper and Retailers:** This area identifies the various research which has taken place on the innovations, customer satisfaction, and the digital transformation journey of businesses.

2.2 Review of Research

2.2.1 Thermal Paper and Environment

We are all aware that our planet is now dealing with several problems. Everything from humans to animals to nations is affected by environmental issues such as global warming, acid rain, ozone depletion, and water pollution. 14% of deforestation occurs to meet our insatiable want for paper products. It is the equivalent of wiping out an area the size of the Netherlands every day for the remainder of the year because of our paper addiction.

BPA Levels - High, high, and higher!

Paper Receipts are considered the major source of consumer exposure to BPA and polycarbonate and epoxy resins. Through his sample of printed receipts from 88 countries, Frankowski observed that 69% of the receipts had the color developer, and BPA was the most common agent. In 20% of the samples from Japan and the United States of America, only BPS was found in the receipts and no other chemicals. The BPA exposure is so strong that it can also be carried and passed on to the surroundings. However, less reliable information has been obtained on the BPS levels. To claim that both BPS & BPS together can cause damage, it is essential to evaluate BPS in thermal paper samples, particularly those from Europe, and monitoring its levels in the environment (Frankowski, Grześkowiak, and Sójka, 2020).

BPA does not leave us easy!

In earlier research in Yalcin et al., 2016, found BPA content in 10 out of 12 thermal papers considered for sampling. The researchers highlighted that the High BPA content ratio of thermal papers could cause a risk of contamination for the paper that is "BPA-free" during the recycling process. Furthermore, wastewater containing BPA of these plants can have hazardous effects on the environment. The research was limited to only understanding the influence of BPA on the environment; further sampling and procedures could have been conducted to understand the

effect of BPA on the humans involved during the recycling processes (YALÇIN, GEÇGEL, and BATTAL, 2016). However, there is a need for Biomonitoring studies in the future so that the influences of BPA on human health can be revealed completely, which is not covered by the researcher.

BPA – Easily Transferrable

Liao and Kannan, 2011, identified that the BPA also gets transferred to the paper currencies when left in contact with the paper receipts for over 24 hours in a wallet. Liao did not share many insights on how well the overall environment gets affected even after the paper is of no further use. The way BPA damages the environment is not just limited to its initial printing stages but is carried forward till its last stage of recycling. It contaminates the exposed surroundings during its use and contaminates the water after being taken for recycling. The research does not cover the recycling processes being followed in the UAE, so it is unclear whether the same implies to the UAE market.

Fukazawa,2002, in earlier research, identified that BPA is even detected in the effluent from several pulping processes for wastepaper containing thermal paper and other printed paper. The researcher does not specify the description of the samples of thermal paper that were being used during sampling. There is no evidence of how the receipts were collected, how long they were stored, and the level of water contamination before thermal receipts were introduced to water.

2.2.2 Thermal Paper and Health

BPA is considered to have disturbing endocrine activities. It is not only limited to dietary intake but has also been proven to affect non-dietary sources.

BPA – Goes with us everywhere – The journey from fingers to stomach!

The rising concerns about BPA triggered many governments to look for alternatives to this chemical, such as BPA and BPF. Fernandez, 2019, studied the concentrations of all three chemicals in 112 thermal paper receipts from Brazil, Spain, and France. BPA was found to be positively correlated with both estrogenic and anti-androgenic activities.

A significant increase in total BPA concentration in urine was observed for cashiers handling daily thermal paper receipts (Ndaw et al., 2016). Hormann's 2014 study has shown that when the BPA is transferred to fingers, it can further contaminate anything that is touched, such as food. This was the first study on the urinary-free and total BPA concentrations amongst cashiers. Not much research is available on this area with samples/experiments volunteers as cashiers. More

in-depth studies are required to validate the outputs and see the impact of BPA & BPS together on human health.

Would you like to take your receipt, sir?

Zalko and his team's findings are supported by another study that took a contrasting approach. The group looked at the urine concentrations of BPA in 389 pregnant women and broke these data down by occupation.

Cashiers — who handle far more receipts than the general population — had the highest prenatal BPA concentrations in their urine at 2.8 micrograms per gram. **Teachers** had 1.8 micrograms per gram, and industrial workers had 1.2 micrograms per gram. Zalko's research was only done on a sample of 17 cashiers, and their pre-sampling health analysis is not shared. However, understanding the health risks caused by chemicals we are exposed to daily creates awareness and allows businesses to look for alternatives in their operations (Zalko et al., 2010). Thermal paper is indeed a direct source of free BPA, but whether widespread usage of thermal paper raises concerns about human health was outside the focus of this study and must be explored further.

2.2.3 Thermal Paper and Businesses

Businesses face the challenge of managing and meeting the expectations of many stakeholders. Thermal Paper, one of the most widely used products in the daily operations of retailers, brings attention to how it is being handled, considering its environmental and health effects.

2.2.3.1 Customer Experience

Customer Experience – Understand, Adapt, Action

Explaining what customer experience is in its essence crucial before attempting to improve it. Customers' internal and subjective response to any direct or indirect encounter with a firm is customer experience. Direct contact often occurs throughout a client's purchase, use, or service and is usually initiated by the consumer. Indirect contact is most associated with unexpected contacts with representations of a company's products, services, or brands and takes the form of word-of-mouth recommendations or critiques, advertising, news stories, reviews, and so on.

A firm must instill exceptional customer value in the minds of its employees. Businesses must be mindful that their customers' ideas of value may differ from their own. A customer is concerned with more than just the physical product. The customer is also concerned with the service

quality, guarantees and warranties, financing arrangements, return policies, and printed receipts, which all contribute to the whole product. The difficulty is to persuade the consumer that the entire value exceeds the total cost of Purchase and usage (Kotler, 2017).

In their study, Meyer and Schwager, 2021, worked on understanding the customer experience and how it can be gauged. One of the key insights of their study showed that businesses today are not very well engaged with their customers and are falling behind. The main reason for this is that organizations are not taking enough steps to understand what consumers want. Some businesses do not comprehend why they should be concerned about client experience. Others gather and quantify data on it but do not disseminate the results. Others perform the measuring and sharing but do not hold anybody accountable for putting the data to use. This research highlighted the gaps within the customer and businesses interaction due to negligence of businesses. However, less emphasis is given to the corrective measures. Verhoef et al., 2009, recognized the importance of past customer experiences, service levels, store types, brand categories, and in-store events to identify future events. In this research, customer experiences have been explained in a holistic approach, involving customers' cognitive, social, physical, affective, and emotional responses to the retailer.

Factors affecting Customer Experience

Customer satisfaction is measurable, but it is dynamic, changing over time, and influencing various factors. In the research so far, various scholars discuss various factors.

Vendor Behavior & Product in offering

According to Lal and Prabhakar, 2007, the factors that impact customer satisfaction can be classified into two categories: Vendor Behavior and Product in the offering. The first is how the vendor's management and employees interact with customers. The researchers tried to explain the vendor's response, service, and complaint handling connection with the vendor's human resource's attitude and skills. The second pertains to the product itself, which is dependent on the vendor's capabilities and the skills of its employees. It shows the engineering and technology developed or acquired by the vendor.

Perceived Value

In their research, Anderson, and Srinivasan, 2003, proposed that perceived value influences e-satisfaction, even pleased consumers are unlikely to be customers in e-business if they believe they are not receiving the greatest value for their money. Because of the sense of value,

perceived value will have a direct impact on contentment. Their vision of connecting perceived value by a customer to the satisfaction level outlays many aspects of knowledge on how a customer can be won.

Figure 6: Perceived Value from Human & Product Factors



Previous experience and Level of involvement in the Purchase

Because studies demonstrate that expectations influence consumer satisfaction and expectations affect satisfaction, several writers describe the variables that influence customer satisfaction. According to Irawan 2006, the following five major elements impact a customer's expectation: prior experience, personal recommendation, personal requirements, marketing communications, and amount of engagement in the Purchase. According to research, the most significant elements are the consumers' previous experience with the services and what other people think about them.

Efficiency and fulfillment

Sheng and Liu, 2010, explained that both efficiency and fulfillment have a beneficial impact on customer satisfaction. However, because service quality, efficiency, and fulfillment are inextricably related, service quality must be examined from many perspectives to discover that requirement fulfillment has a relatively large impact on customer satisfaction.

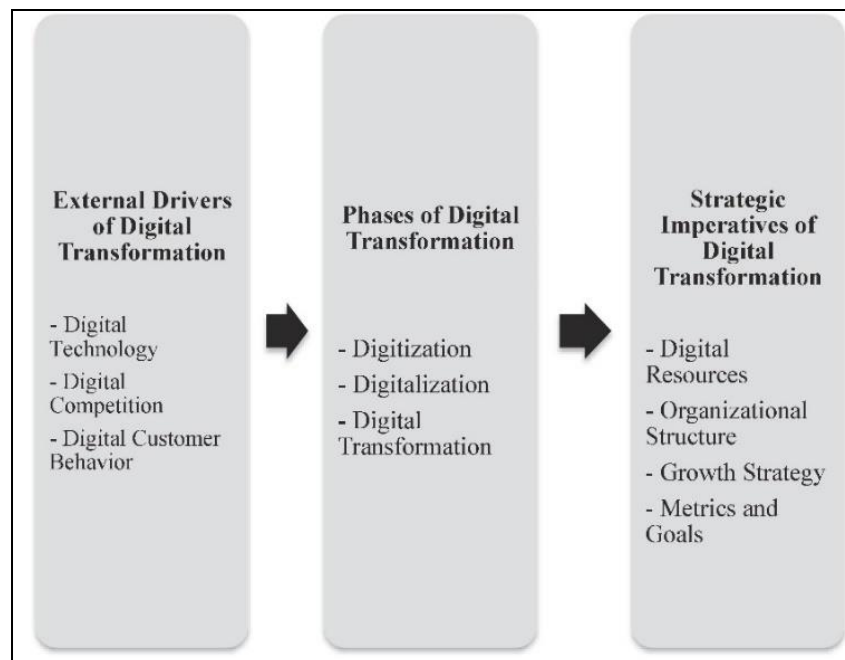
2.2.3.2 Digital Transformation

The integration of digital technology into all parts of a business, radically changing how you operate and offer value to consumers, is known as digital transformation. It is also a cultural shift that necessitates businesses constantly challenging the status quo, experimenting, and being comfortable with failure. As the retailers start realizing the negative impacts of thermal paper on their surroundings, it becomes necessary that they move towards adopting better ways of replacing thermal paper. While the retailers decide which technology or mode of receipts they want to adapt, they also need to ensure that any new measure they take is also in line with their sustainability agenda and is beneficial for society and its employees in the long run.

3D's of Digital Transformation

There has been much research in digital transformation; C. Verhoef et al., 2021, provides a structural overview of defining the drivers, phases, and levels of digital transformation. (C. Verhoef et al., 2021).

Figure 7:Flow Model for Discussion on Digital Transformation



The study began with a consideration of why companies need to transition digitally, concluding that digital transformation happens because of changes in digital technology, more digital rivalry, and resultant digital customer behavior. The researchers then defined three stages for digital transformation by reviewing the literature: digitization, digitalization, and digital transformation.

Each phase exerts unique demands on a company's digital resources, organizational structure, growth plans, and KPIs. Firms seeking to change digitally must-have digital assets and acquire or build digital agility, networking, and big data analytics expertise. Internally, businesses must create flexible structures with low degrees of hierarchy, as well as incorporate IT and functional, analytical abilities (C. Verhoef et al., 2021).

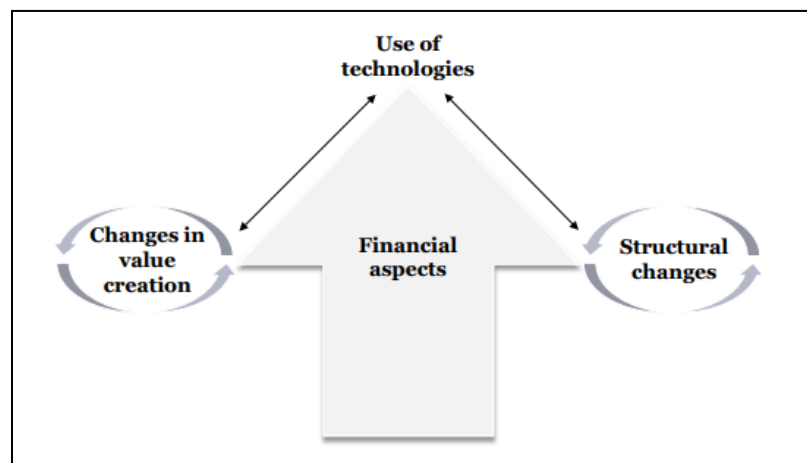
Managing four transformational dimensions

The application of technologies covers a company's attitude toward emerging technologies and its capacity to capitalize on these innovations. As a result, it includes a company's strategic position in information technology and its future technical ambitions.

A company must determine whether it wants to be a market leader in terms of technology utilization, with the potential to set its technical standards, or if it chooses to rely on pre-existing standards and views technology as a tool to complete business operations.

Matt, Hess, and Benlian, 2015, provided a very different approach to understand the strategies through which digital transformation can be adapted. They have highlighted that irrespective of the nature of the organization, there are few key elements to the digital transformation that are in common.

Figure 8: Digital transformation framework: balancing four transformational dimensions



To guarantee the effective implementation of a digital transformation plan and fully utilize its intended impacts, it is critical to match the four distinct dimensions carefully: technology use,

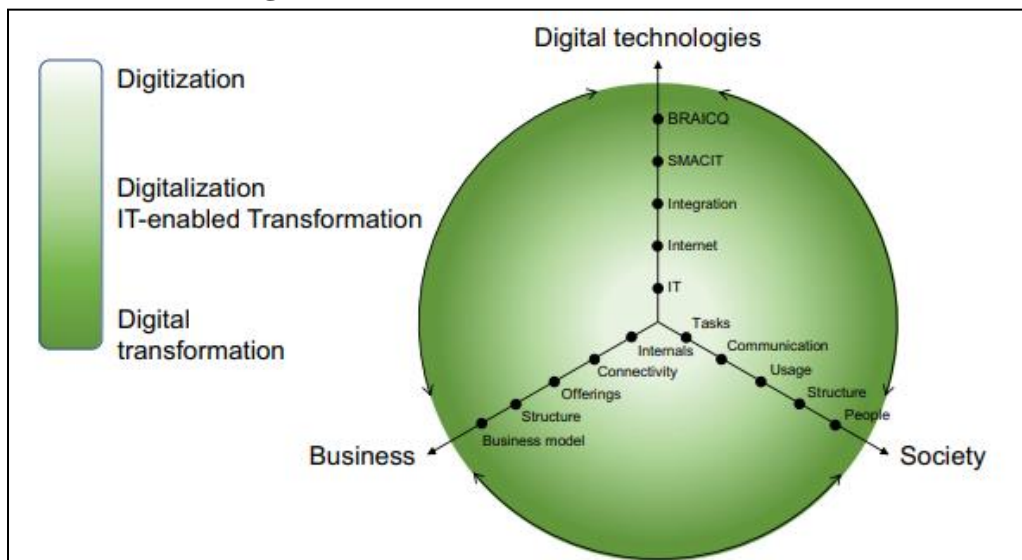
value creation changes, structural changes, and financial factors. The four transformative elements and their interdependence may be combined into a single Digital Transformation Framework (DTF). If all four aspects are included as part of the framework, it will aid companies in assessing their present capabilities and developing a digital transformation strategy (Matt, Hess, and Benlian, 2015).

C. Verhoef et al., 2021 and Matt, Hess, and Benlian, 2015 have contributed to understanding how a firm must digitize and the strategic methods employed. However, both studies ignored the reality that a corporation has more stakeholders to serve than its internal stakeholders, such as consumers and society. Businesses must take actions that follow social requirements to gain long-term consumer confidence and loyalty.

Holistic Approach – Connecting Business, Technology, and Society

While most of the evaluated frameworks were centered on business and technology, Van et al., 2021 suggested a larger framework incorporating society. As a result, the framework has three axes to reflect the primary entities: digital technology, business, and society.

Figure 9: The Evolution of DT framework



The researchers conducted a developmental review of 41 Digital Transformation models, of which they identified four research opportunities. In addition, they highlighted the complexity of the process and categorized DT's drivers in 23 DTI and six categories.

The researchers did not study the impact of these individual changes within technology, business, and society on each other (Van Veldhoven and Vanthienen, 2021).

Challenges in adopting technology

Most businesses today are aware of the transformation they want but are clueless about how to get it. This unawareness is because there is no specific checklist of items that need to be achieved. A few of the biggest mistakes that organizations make is relying on a set of outsourced consultants to get the job done who are not even aware of the company's culture, goals, or intentions (Tabrizi et al., 2019). This section will review the literature to understand some of the biggest challenges companies face in adopting technology.

Resistance to Change

Jain et al., 2018, described core competitiveness as a company's capacity to endure in the face of fierce competition, not just from inside the country but also from multinational businesses. They emphasized that the resistance to both small and large changes is an important factor that can influence the success of any organizational change, such as a change in mission, restructuring operations, introducing new technologies, mergers, major collaborations, downsizing, new programs such as Total Quality Management, re-engineering, and establishing a new organizational structure. Further to their research, by systematically reviewing literature and building an econometric model, they communicated the need to manage change. Because of the possibility of employee resistance, change should be implemented to achieve an overall or specific purpose rather than for the sake of change. Any business that intends to implement change should realize that some workers will welcome it, while others may reject or hate it. As companies in every industry begin to translate the power and possibilities of e-business, and digitization becomes the strategic core of the business, new approaches to change management and an understanding of the multifaceted nature of resistance are required to assist organizations in understanding and accepting the complex dynamics of innovation (Jain, Asrani and Jain, 2018).

Unclear priorities, where to focus – Present or the Future?

As Heavin and Power, (2018) explained in their research, today, many organizations are caught between enhancing the efficiency of current operations, focusing on the client, and satisfying their requirements. Organizations think that the two objectives are incompatible and that focusing on efficiency would diminish customer pleasure, loyalty, and sales. There must be a balance between the two, as well as a prioritization of operations. Planning must consider what is

more attainable in the short term and more useful in the long run. Another important factor that has been highlighted is the expense of data security! All data can be kept at a cost but knowing what data has been gathered and is available for analysis is far more challenging for businesses. Indexing data resources and analyzing data quality while looking for possibilities to integrate data resources adds to the difficulties. Data are both an opportunity and a challenge. Data that cannot be used has no value (Heavin and Power, 2018).

Weak management skills, difficulties in handling Change

Anghel, 2019, brought a crucial point for consideration during the digital transformation: Change Management. Most of the companies in their transformation because the upper Management or the leaders required to lead this change have not given clear thought to the whole process. Digital Transformation is less about technical knowledge and more about preparing leaders, managers, and workers to buy into the change process and connect the organization's processes with new digital technologies. Because digitization is about integration, incorporating cultural redirections as part of the digital transformation might simplify the changes and obstacles. If these cultural changes are sustained, they may be beneficial in the same way that the digital developments in these businesses have been. Before projects may be disruptive internally or disappear completely, senior Management must make concrete strategic commitments. In a nutshell, digitalization necessitates a shared vision and work on a shared culture, autonomy without anarchy, and far greater participation of individuals than in typical transformation processes (ANGHEL, 2019).

Innovations in Paper Receipts

NFC Based Model

In 2015, Vadde et al. worked to build an approach to replace paper receipts by using NFC. They demonstrated a new technology for creating digital receipts and sending them to a smartphone at POS terminals. Authentication and quick transmission may be accomplished in under 3-seconds using their approach, which combines NFC and BLE technologies. Users of a smartphone app could sort invoices by date, category, or dollar amount. They went on to quantify the environmental benefits of this NFC approach, showcasing that if the NFC based digital receipts innovation can fully penetrate the G4 and G8 group of countries, 13,050 acres and 16,250 acres can be saved, respectively of forest trees each year (Vadde, Nithya C. H. and Surhonne, 2015).

Database, XML Protocol etc

Wadsworth et al., 2010, intended to enhance the administration of customer transaction data while decreasing the number of receipts issued in the United States. It was also expected to make tracking one's purchasing patterns easier for customers. Their solution was divided into four parts: a web-based user interface, a mock cash register, a receipt management database, and an XML protocol that connects the cash register to the receipt database. They expressed that only moderate concern was about the privacy of their financial transactions, which today is a big area of consideration (Wadsworth et al., 2010).

2.3 Research Gaps addressed in this dissertation

Year	Author	Research Gaps
2017	Kotler	Great emphasis has been given on customer values, but the paper only has a one-dimensional focus. The paper gives suggestions from the perspective of a marketer and not as a business.
2021	Meyer and Schwager	In this research, the authors have provided an in-depth understanding of the customer experience, but customers have been considered as same from all aspects. There is no mention or research on customers of retail sectors per se.
2009	Verhoef et al.	The dynamics of customer experience and the competitive viability of providing a superior customer experience have received less attention in study.
2007	Lal and Prabhakar	According to the research, retailers may tailor products and services for each unique consumer by cultivating loyalty throughout the customer's life cycle. However, there is almost no information on how a retailer might enhance customer happiness with the resources already accessible to the firm.
2003	Anderson and Srinivasan	Not all the potential loyalty-inspiring elements at the corporate and individual levels were examined in this study. Extending the validity of these findings may need cross-sectional and longitudinal replication of this research in various business and product

		situations.
2006	Irawan	It is agreed that past experiences influence a consumer's buying behavior and satisfaction, but the study has given a general overview. There is no focus on retail consumers or consumers of any specific region.
2010	Sheng and Liu	Due to a lack of resources, the number of samples used in this study is still small, and there is a gap in the scale selection since the samples comprise two transactions, one B2C and one C2C, but the scales are originally B2C-oriented. Though the analyses in this study will have a little impact, no solid proof has been gathered; therefore, additional research is needed in the future.
2021	C. Verhoef et al.	There is a lack of research into the relationship between digital transformation stages and business performance.
2015	Matt, Hess, and Benlian	There could have been more work done upon identifying elements and success patterns of digital transformational strategies.
2021	Van Veldhoven and Vanthienen	Being the first research in connecting Digital transformation with business and society, the suggested framework type requires more evidence.
2018	Jain, Asrani, and Jain	The researchers have used an econometric model to determine how a reduction in resistance to change can lead to better efficiency (measured by productivity) of the organization. One of the assumptions behind this was that employees are knowledgeable of their work at the most, and their contribution will make a positive impact. This is not ideally true in real life since every employee has a different set of skills, and not everyone understands the work

		completely.
2018	Heavin and Power	All the digital transformation challenges in this research have been briefly discussed; there is little insight. The researcher has given more attention to the actions management must take
2019	Anghel	The researcher has not shared many strategic ideas to manage change Management but has shared the importance of implementing them.
2015	Vadde et al.	The model shared by the researcher is very expensive and may not suit the cost-effectiveness criteria for many retailers.
2010	Wadsworth et al.	The weakness with this study was that receipts did not have a widely agreed-upon number of data fields to be included in them. As a result of the inconsistent data fields on paper receipts, it was impossible to determine which fields should be required on the system's electronic receipts.

3. Methodology

3.1 Introduction

This chapter aims to let the reader understand the approach taken to resolve the research problem by data gathering using different techniques. In more detail, in this part, the author outlines the research strategy, the research method, the research approach, the methods of data collection, the selection of the sample, the research process, the type of data analysis, the ethical considerations, and the research limitations of the project.

3.2 Research Strategy

The type of research conducted by the author in this paper is applied research. The research design aims to solve a specific problem or provide innovative solutions to issues affecting individuals, groups, or society. The researcher has employed empirical methods to solve practical problems. When conducting applied research, the researcher takes extra care to identify a problem, develop a research hypothesis, and test these hypotheses via an experiment. In many cases, this research approach. This follow-up research design further investigates pure or basic research findings to validate these findings and apply them to create innovative solutions.

The research has been divided into two segments:

- **Systematic Literature Review:** A detailed review has been conducted to understand the impact of environmental and health-related damages caused by thermal receipts. The main agenda of this review is to understand the facts of BPA damage pertaining to the scientific reasonings. To understand the views of previous researchers on customer satisfaction and digital transformation.
- **Surveys**
 - Consumer Survey

The consumer survey focuses on the basic demographics of the consumer and then further enters understanding their preferences in terms of paper receipt usage. This survey acts as a key resource in understanding consumer's awareness, choices, needs. It also highlights the difference between what they consume and what they expect from the retailers.

- Merchant Survey

This survey is intended to provide insights into the merchant's usage of paper receipts in their day-to-day operations. The merchants selected for the research are entirely UAE-based, so it also helps understand the cost incurred. Retailers are also enquired about the challenges they face during digitally transforming and whether they consider that being digital is important or not.

3.3 Justification to Research Questions

To provide a justification, shown below is a table that outlines the research objectives, research method, and the reasoning for choosing the latter:

Research Objective	Research Method		Justification
To understand the environmental and health effects caused using paper receipts in SMEs in the retail industry of the UAE	Secondary Systematic Review	Research: Literature	The agenda is to identify the environmental and health damages thermal paper receipts expose us to. Since the research required here is scientific, it acts more as facts proven by real-life experiments.
To identify the mindset of the retailers towards digital transformation in terms of barriers and opportunities	Secondary Systematic Review	Research: Literature	A review of previous research is conducted to understand the view from a holistic perspective. Merchant survey helps add value by getting to know the challenges directly from the UAE retailers

	Primary Research: Merchant Survey	
To analyze what does a customer value, what factors can help improve customers experience	Secondary Research: Systematic Literature Review Primary Research: Customer Survey	A review of previous research provides insight on consumers from all verticals, not just retail. Customer survey focuses on UAE consumers, their choices, and their expectations
To recommend a unified, holistic approach to cater to the digitization phase considering the environment, health, consumers, and businesses	Secondary Research: Systematic Literature Review Primary Research: Customer Survey Merchant Survey	Together, the three sources of information contribute to knowing the most innovative approach for handling/transforming paper receipts culture. The research attempts to recommend solutions that can fulfil those.

3.4 Participants and Data Collection Procedures

Customer Survey: Qualtrics was used to conduct the survey, which included 22 questions spanning various topics, including demographics, behavior, preferences, and consumer expectations. The maximum time required to fill the survey was five minutes to ensure that the surveyor was engaged and sharing a legit opinion. Social media (Facebook, Twitter), LinkedIn messages, and WhatsApp groups/chats were used to contact poll respondents. Participants had to be at least 18 years old to guarantee that the surveyor could legally carry and spend money in retail establishments and offer an honest assessment. In total, 199 responses were received; all the respondents are UAE residents/citizens. Questionnaire for the Customer Survey:

No.	Question	Options
1.	Ethical Consent	Yes, No
2.	What gender do you identify as?	Male, Female, prefer not to say
3.	What age group do you belong to?	18-24, 25-34, 35-44,

	45-54, 55-64, 65 & above
4. Which of these describes you?	Full Time Employed, Part-Time Employed, Unemployed, Student
5. What is your monthly household income? (IN AED)	1-15000, 16000-25000, 26000-35000, 36000-50000, 50000 & above
6. What is the highest degree or Level of education you have completed?	High School, Bachelors, Masters, Ph.D.
7. Are you married?	Yes, No, prefer not to say
8. How many kids do you have?	None, One, Two, more than two
9. How do you make most of your daily transactions?	Online, In-store, Combination of both
10. How many times do you make a transaction in a day?	I do not spend every day, Once, 2-5 times, more than five times
11. Assuming you have AED 100 to spare, how would you allocate your budget towards the following retail segments?	Clothing & Footwear, Jewelry and Watches, Entertainment & Leisure, Dining, Grocery, Self-Care & Grooming, Pharmacies
12. How do you manage the paper receipt you receive after	I do not take the paper

<p>making a transaction?</p>	<p>receipt from the cashier, I immediately dispose of the paper receipt, I only keep receipts for expensive transactions, I keep all receipts with me for future reference, Others (Specify)</p>
<p>13. Which of the following statements explain your lack of interest in paper receipts?</p>	<p>I understand the health problems associated with it, It is not useful for me, I understand the environmental damage caused by it, I understand both health and environmental hazards, All the above</p>
<p>14. What is the main reason for keeping the paper receipts?</p>	<p>Accounting - Weekly/Monthly Budgeting, Reimbursements, Warranty, Exchanges, It is a habit, Others(specify)</p>
<p>15. What do you think about the following statements? Share your opinion via selecting True/False?</p>	<p>Replacing paper receipts would save 12 billion pounds of carbon dioxide (CO2), The paper contains BPA (bisphenol A, industrial chemical), due to which it cannot be recycled, Paper receipts are safe to use, Digital Receipts are more expensive than</p>

	paper receipts
16. On a scale of 1 to 5, How would you rate your actions towards adopting eco-friendly/sustainable solutions? (5 being completely sustainable solutions)	Not Sustainable, Somewhat Sustainable, Moderately Sustainable, Almost Sustainable, 100% Sustainable
17. If given a choice, what would you prefer?	Digital Receipt, Paper Receipt
18. Through which mode would you prefer receiving the Receipt?	Directly via Email, Text message/SMS, One Single Platform for all receipts
19. What are the top reasons behind adopting paper receipts over digital receipts? (You can select more than one option)	Convenience, Data Privacy, Transparency, Difficult to adapt technology
20. In the past, have you been given a choice by the cashier to get a digital receipt?	Yes, No
21. Please provide the name of the retail outlet where the digital Receipt was offered? (If more than one, please separate text with a comma)	If Q20 is a Yes
22. How do you foresee the future of receipts?	Strongly Agree, Somewhat Agree, Neither Agree nor Disagree, Somewhat Disagree, Strongly Disagree
<ul style="list-style-type: none"> • Consumers will completely start using digital receipts • Digital will be a preferred mode of receipts • Paper will be a preferred mode of receipts • Consumers will be more aware of environmental and health hazards • There will be no change in consumer preferences 	

Merchant Survey:

The survey was conducted using Qualtrics and contained 12 questions covering various subjects, including merchants' thermal paper buying patterns, costs spent, and their mindset toward becoming digital. There was a total of 20 responses. Retailers were reached out via emails. All the merchants are headquartered in the United Arab Emirates. Restaurants, grocery stores,

footwear retailers, department store chains, pharmacies, and apparel labels were among the retailers chosen.

Questionnaire for the Merchant Survey:

No.	Question	Options
1.	Ethical Consent	Yes, No
2.	What is your line of business?	
3.	How many branches do you have?	One, Two to Five, More than five
4.	What kind of Receipt do you provide to your consumers?	Paper Receipts, Digital Receipts, Both
5.	How long does your business take to finish one paper receipt roll?	I must change it every few hours, It can last up to one day, One paper roll stays for a good one week, I can manage up to 14 days with one roll, I change it once, and I am good for 3-4 weeks
6.	How many papers receipt rolls do you use every day?	Less than 5, Between 6 to 10, More than 10
7.	How much does one paper receipt roll cost you? (In AED)	Less than 5 AED, Between 5 AED - 10 AED, More than 10 AED
8.	Can you please share with us the dimensions of the receipt roll that you purchase?	Text Box
9.	Have you ever thought of switching from paper receipts to digital receipts?	Yes, No
10.	Are you aware of the health issues caused by the regular use of paper receipts?	Not familiar at all, Slightly familiar, Moderately familiar, Very familiar, Extremely familiar
11.	Is it mandatory for your cashier to wear gloves?	Yes,

	No
12. How do you dispose of the paper receipts not taken by the customer?	In the garbage bin at my store, I send it for recycling, I segregate all wastes at my store
13. How important are the paper receipts for your business?	Not at all important, Slightly important, Moderately important, Very important, Extremely important
14. In which scenario do you think you will switch to digital receipts for your business?	If made mandatory by the government, If consumers request it, If employees request for it
15. If made mandatory, what do you think will be the biggest challenges you will face in switching from paper receipts to digital receipts?	Cost, Changing Everything – The transformation, Managing IT
16. Which type of digital mode would you prefer for your business?	Email, SMS/Text Messages, One dedicated app where all receipts are received (multi-brands)
17. In your perspective, in how many years do you think your business will make the transition towards digital receipts?	By 2022, By 2024, By 2026, Post-2026

3.5 Ethical and Practical Considerations

Research ethics are important since they aim to increase the researcher's overall correctness. The information obtained in this survey was only utilized once, and that was for this specific study. The primary data has been correctly examined with suitable tools and methodologies and evaluated without tampering with the results. In addition, the ethical considerations in this study include the fundamental rights of the respondents, including anonymity, integrity, and secrecy.

3.6 Conclusion

To conclude the section above, the researcher has used both primary and secondary data to draw insights. The researcher has ensured that enough data is collected to provide in-depth knowledge of the subject for every research question.

4. Research Findings

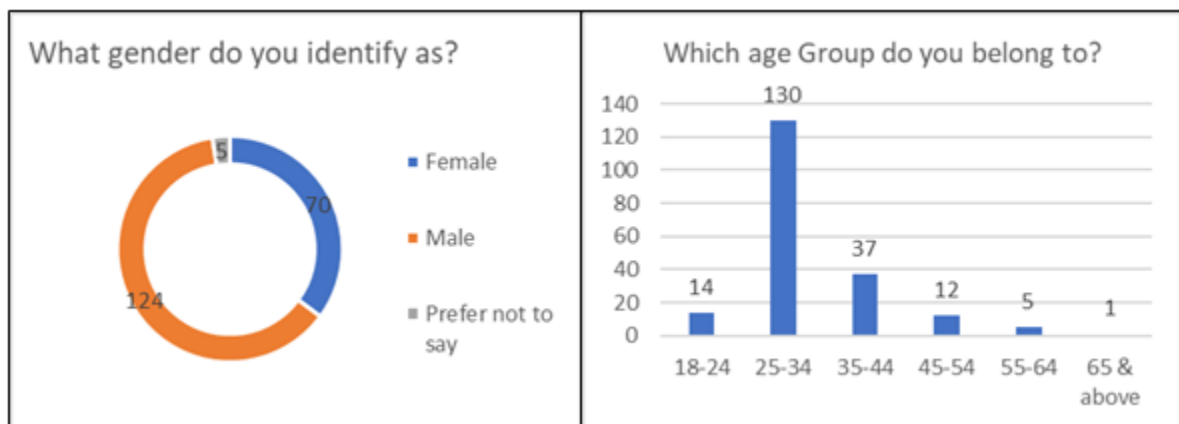
4.1 Introduction

This research chapter deals with data analysis, which discusses the findings and values derived from data analysis. The chapter prompted the researcher to evaluate the study's outcomes and statistical values and draw conclusions based on their gleaned facts. Consumer and merchant data are analyzed in this area.

4.2 Customer Analysis

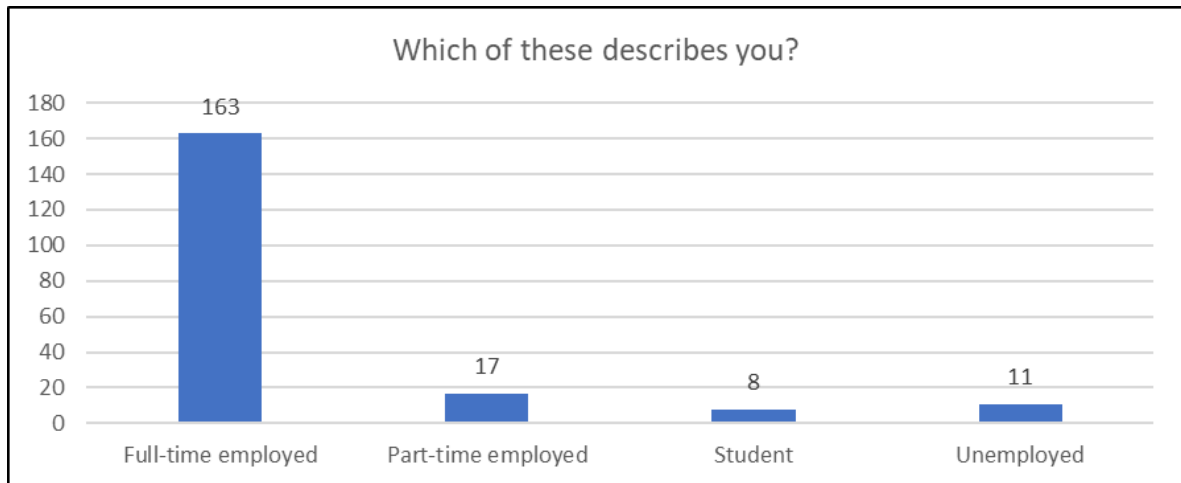
Demographics:

Figure 10: Customer Survey, Demographics: Age & Gender



Of the total 199 responses received from the customers, 62% of the respondents were Male, 37% were Female, and 1% preferred to keep their identity discrete (Figure 10). About 65% of the people who responded were from the age group of 25-34; however, data was captured from all age brackets, making it interesting to see the analysis from different aged people.

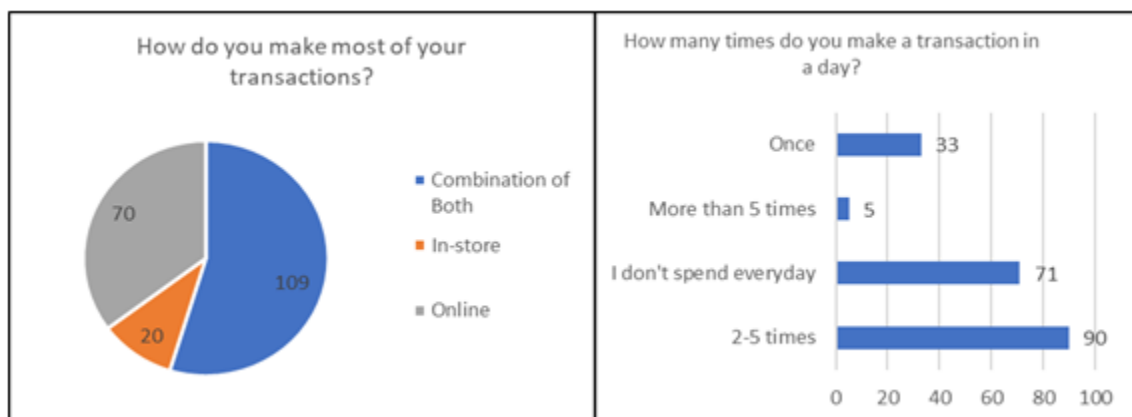
Figure 11: Customer Survey, Demographics: Occupation Type



Of the total responses, 81% of the individuals were full-time employed and had household income levels between 1-25000 AED. 55% of the total participants declared themselves married, of which 61% had one or more children (Figure 11). The assumption made in much previous research of married people making more transactions than unmarried people seemed true in this study (Hawk, 2011). It is observed that married people are 5% more likely to make transactions every day than unmarried people.

Purchase Behavior:

Figure 12: Customer Survey, Purchase Behavior: Transactions



Understanding customer behavior in-depth and consistently allows us to know about their needs and expectations. Figure 12 represents a clear display of how consumers prefer to make purchases nowadays. Only 10% of the consumers are seen interested in making purchases completely in-store daily. This could even be driven by the COVID-19 pandemic, which accelerated the shift towards a more digital world and triggered changes in online shopping behaviors that are likely to have lasting effects (UNCTAD, 2020). With 109 users still prefer online and in-store shopping, it represents that despite the pandemic, we still have consumers trying to balance both experiences.

We have two sets of consumers in this survey, First are those consumers who make at least one transaction every day, Second are those who do not make even one single transaction regularly. As per behavioral studies, consumers who do not spend every day are known to be as informed as they are aware of their purchases beforehand and plan accordingly; hence, they are not into impulse buying. Consumers who spend every day are indecisive consumers triggered by discounts or any programs run by their preferred brands (Rodrigues, Lopes, and Varela, 2021).

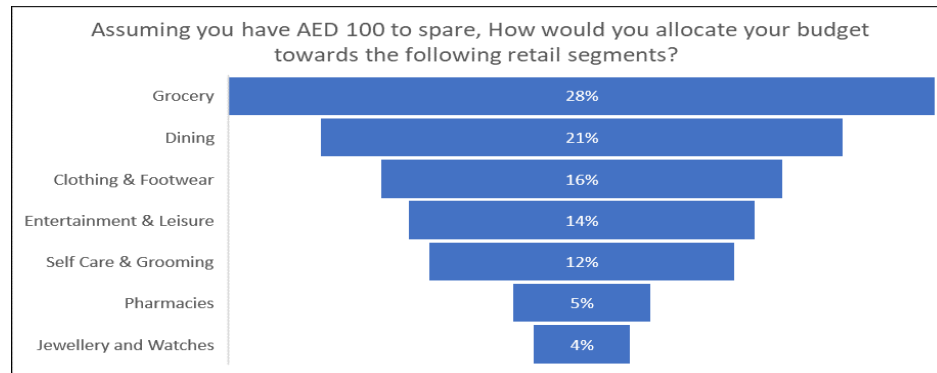
Figure 13: Customer Survey, Purchase Behavior: Predictive Usage

#Transactions	Over 7 Days	Over 30 Days	Over 90 Days	Over a year
2	1260	5400	16200	65700
3	1890	8100	24300	98550
4	2520	10800	32400	131400
5	3150	13500	40500	164250

In the survey, 90 consumers confirmed that they make between 2-5 transactions daily. Considering this, Figure 13 analyzes these consumers' predictive transactions (on the scale of 2-5) over seven days, 30 days, 90 days, and a year. These transactions are directly proportional to the number of printed receipts generated per transaction and hence the BPA!

It takes 55,000 receipts (including bills) to destroy one average tree, so considering our 90 consumers make four transactions a day, they will be indirectly removing 2.3 trees every year from our planet.

Figure 14: Customer Survey, Purchase Behavior: Spent by Vertical



On asking the consumers how they would allocate their 100 AED based on different retail verticals, the maximum spent was observed in the Grocery followed by Dining.

UAE Grocery's

There is growing competition in the UAE online grocery industry. Many retail customers have food brands in the region, and established players compete with smartphone customers that provide quick shopping and even online marketplace giants. When buying groceries online, consumers want a straightforward, simplified experience (Quaife, 2019).

Figure 15: Source: Quaife, 2019

Name	Use by date details	Ratings and reviews	Search by dietary needs	Online & offline payment	Live Chat	Responsive email service	Same day delivery	Hourly delivery slots	Branding on delivery
Aswaaq	✗	✓	✗	✓	✗	✗	✓	✓	✓
Carrefour	✗	✓	✗	✓	✗	✗	✓	✗	✗
Choithrams	✓	✗	✗	✗	✗	✗	✓	✗	✓
El Grocer	✗	✗	✗	✗	✓	✗	✓	✓	✗
Instashop	✗	✗	✗	✓	✗	✓	✓	✗	✓
Kibsons	✓	✗	✗	✓	✗	✓	✓	✗	✓
Lulu	✓	✓	✗	✗	✓	✓	✓	✗	✓
Noon	✗	✗	✗	✓	✗	✓	✗	✗	N/A
Quality Food	✗	✓	✓	✓	✓	✓	✓	✗	✓
Souq	✗	✓	✗	✓	✗	✓	✓	✗	N/A
Supermart	✗	✓	✗	✗	✗	✗	✓	✗	✓
Trolley	✗	✓	✗	✗	✗	✓	✓	✓	✗

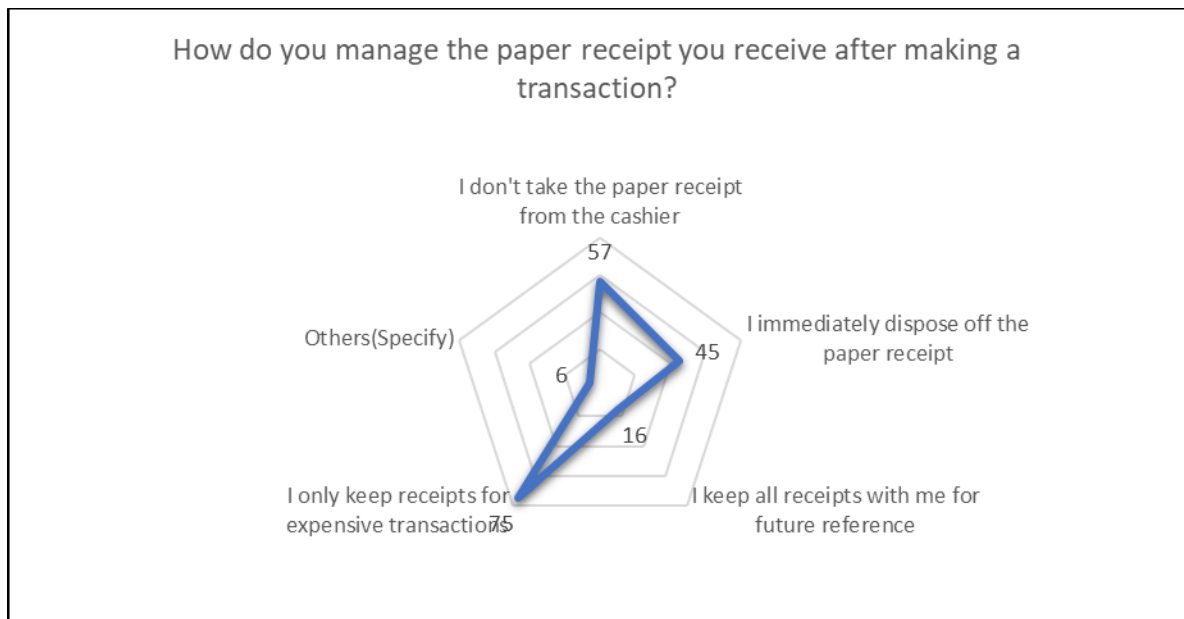
Lulu Group, Majid Al Futtaim, Landmark Group, Azadea, Fathima Group Companies, Carrefour, Spinneys Dubai, Al Maya are the main players operating in the UAE Retail industry. They keep the consumer involved through hefty discounts and loyalty schemes (Nazir, 2020).

UAE Restaurants

The growing number of new food outlets in Dubai results from the large international reputation and high trust of investors in the Emirates and consumer confidence in regulatory ensuring food safety and safety in the Emirates. Dubai itself is expected to see 20,000 food venues operating before October 2021 (Sadaqat, 2021).

Preferences & Expectations:

Figure 16: Consumer Survey: Preferences & Expectations: Receipt Management



The survey showed that 51% of the consumers today either throw their Receipt as soon as they receive it, or they do not even prefer to collect the Receipt from the cashier (Figure 16). The average lifespan of a receipt is known to be 11 seconds. Consumers today are more aware than ever; they know what is good for the environment. Sixty-four consumers in total said that they do not collect Receipts from the cashier or throw their Receipts because they are aware of the environmental damage it causes.

Figure 17: Customer Survey: Preference & Expectations: Why do consumers throw receipts?

Why do people throw/not collect receipts?	
I understand the environmental damage caused by it	64
It is not useful for me	18
I understand the health problems associated with it	13
I understand both health and environmental hazards	7

Nevertheless, what is extremely crucial here is that the consumers are not aware of the health damages caused by the receipts. One of the main reasons behind this is that these are such common items in our daily lives that there is no marketing communication or training to educate consumers about it. The impact is considered small and negligible when switching receipts or stopping paper receipts requires much more than digitization.

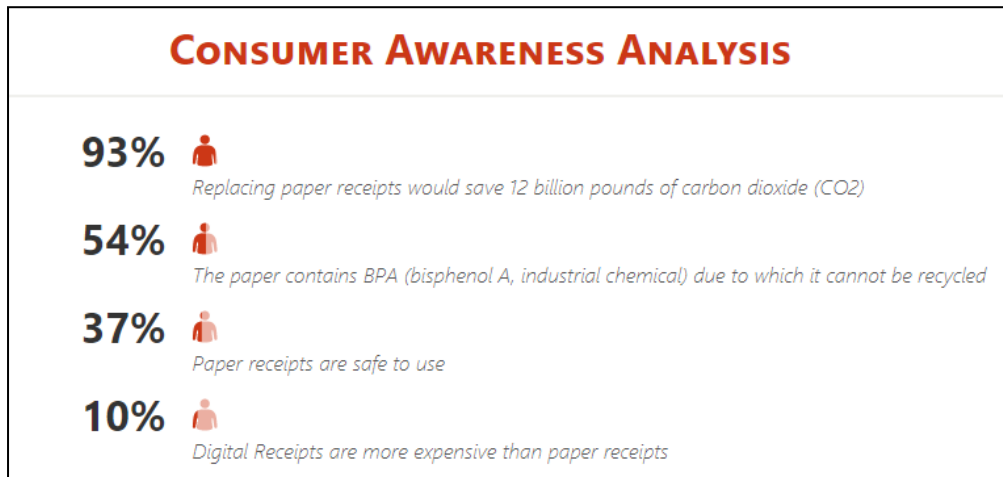
Consumers who prefer keeping or collecting their receipts were majorly seen doing so for reimbursement, warranty, and exchange purposes. This shows that whichever mode retailers decide to go digital must ensure that reimbursements and warranty are covered in the same mode.

Figure 18: Customer Survey: Preferences & Expectations: Why do consumers keep receipts?

Why do people keep/collect receipts?	
Reimbursements	24
Warranty	24
Exchanges	19
It is a habit	13
Accounting - Weekly/Monthly Budgeting	11

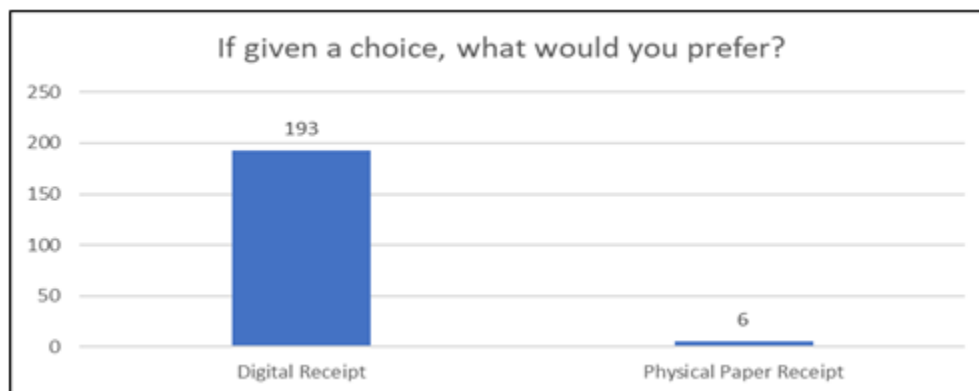
In analysis to see whether consumers are aware of the environmental and health damages, they were asked to mention true or false to the statements shown in Figure 19.

Figure 19: Customer Survey: Preferences & Expectations: Consumer Awareness Analysis



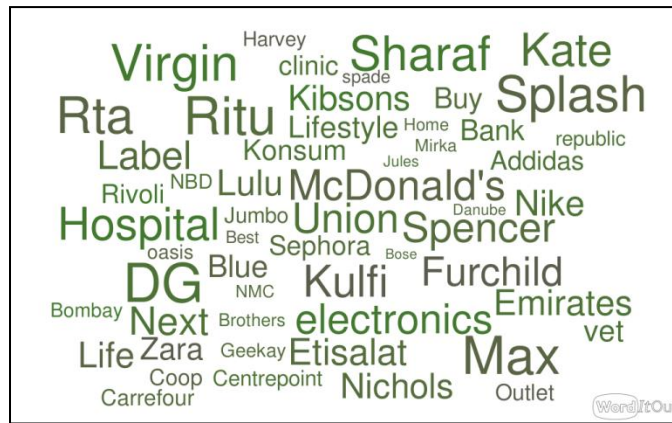
93% of the consumers believed that paper receipts replacement could save 12 billion pounds of CO₂; one of the key reasons behind this thought is that people are generally aware of cutting fewer trees. They associate paper directly with the trees but cannot connect thermal paper and BPA, so only 54% of the consumers said that the paper contains BPA, whereas the remaining 46%. Today, customers and staff must start to ask businesses what kind of receipt documents are being used and push decision-makers to use healthier choices, such as heat paper with fewer dangerous materials (WFMY, 2014). 63% of the consumers feel that paper receipts are unsafe to use. 10% of consumers believe that digital receipts are more expensive for businesses than paper receipts. Digital receipts impose one-time infrastructure costs for businesses, whereas paper receipts include an ongoing cost of finance, environment, and health.

Figure 20: Customer Survey: Preferences & Expectations: What does the customer prefer?



Despite the reasons consumers keep/collect paper receipts, 96% of the consumers opted for a Digital Receipt for their transactions. With a total population of 9.94 million as of 2020, UAE runs approximately 17.06 million mobile connections with 9.84 million internet users (Kemp, 2021). UAE residents or citizens are more advanced and digital than retailers expect them to be. Data shows that consumers are eager to move their daily transactions directly to one single application where they could receive all their transactions with history or receive the Receipt directly via email or even as an SMS.

Figure 21: Customer Survey: Preferences & Expectations: UAE brands that are digital



UAE consumers shared some of the brands that have offered them. Some of the very popular and well-known brands can be seen in Figure 21.

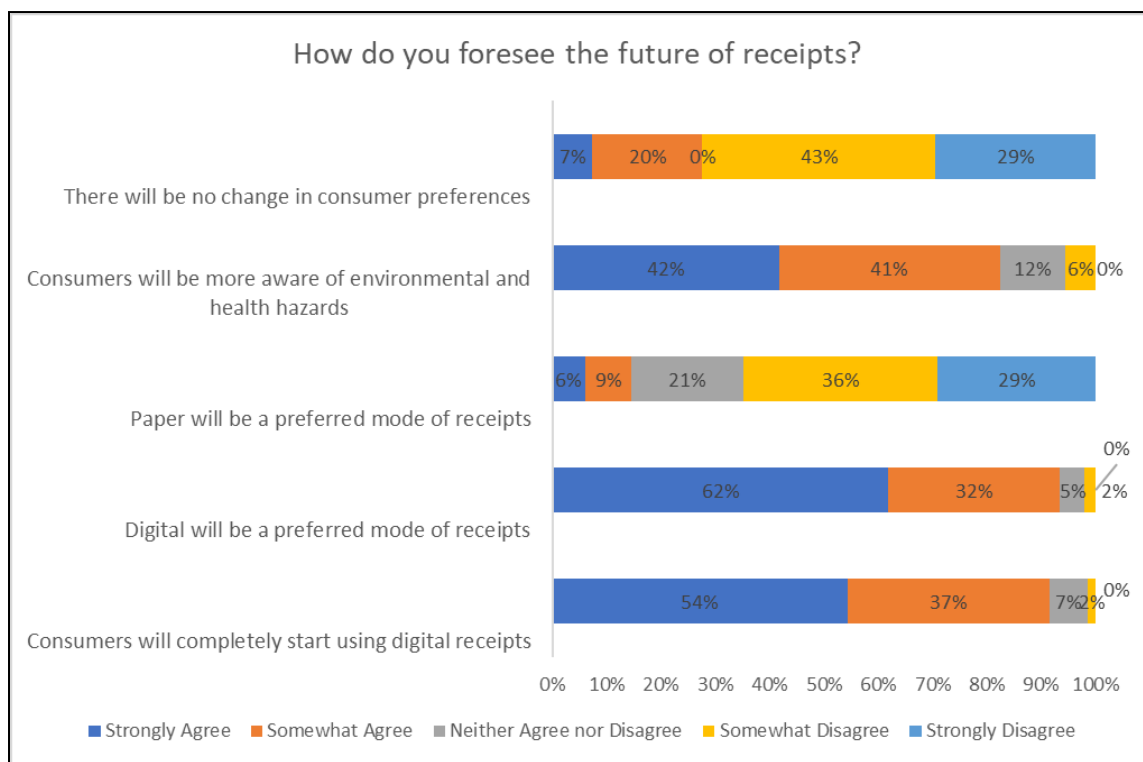
Figure 22 shows a bifurcation of these brands based on the retail vertical they fall under:

Figure 22: Customer Survey: Preferences & Expectations: Digitization as per Verticals



Most of the clothing brands are seen being the fastest in digitization, out of which 41% are from the luxury segment. Most companies today consider digitization as a part of their responsibility towards both consumers and society. Carrefour, Lulu Hypermarket, and Union Coop are already moving towards a digital receipt of the top groceries in the UAE. One key point to understand here is that most brands in every vertical offer the digital Receipt either as an Email or as a dedicated application that belongs to that store. The comfort that consumer experiences in downloading one application for every brand are an area of concern and further investigation. As per the survey results, Consumers have a higher tendency to go for one dedicated application where they can receive the receipts from all the places they shop from. This not only makes it convenient for them but also allows them to build trust in one source.

Figure 23: Customer Survey: Preferences & Expectations: Customer's Predictions



Respondents shared their opinions on how they foresee changing consumer's expectations towards paper and digital receipts. 72% of the consumers agreed that consumers' preferences are likely to change over time. This indicates that identifying consumers changing beliefs and habits is central for any organization to succeed in the long run. Companies can take the following actions to gauge and work on customer behavior:

- Reinforce positive new belief both in the customer and their brand
- Shape their products with the new emerging habits
- Continuously engage with the customers so that they feel involved with the brand

83% of the consumers feel that consumers will be more aware of the environmental and health hazards in the future. This brings our attention to the "Conscious Consumerism Movement." Customers vote on the dirham by buying ethical items, avoiding non-ethical firms, and not buying them occasionally. Therefore, a society-oriented consumer can see if consuming is essential, then if he or she decides to buy, he or she examines who delivers the goods and how the product affects each environment he or she creates and delivers. When customers eliminate purchases and select firms and products that have a positive effect, they signal a preference for the company and better items for the planet (Nguyen, 2019).

Even when 96% of the people want digital Receipts as the mode of transaction, 15% of the consumers still believe that paper will still exist as the mode of Receipt in the future. Of course, that is understandable that paper receipts are not going to vanish soon. 91% of the consumers strongly believe that in the future, all transactions will generate a digital receipt instead of the current paper receipt exchange. Customers like digital receipts because they will not fade and are convenient to store, unlike thermal paper receipts.

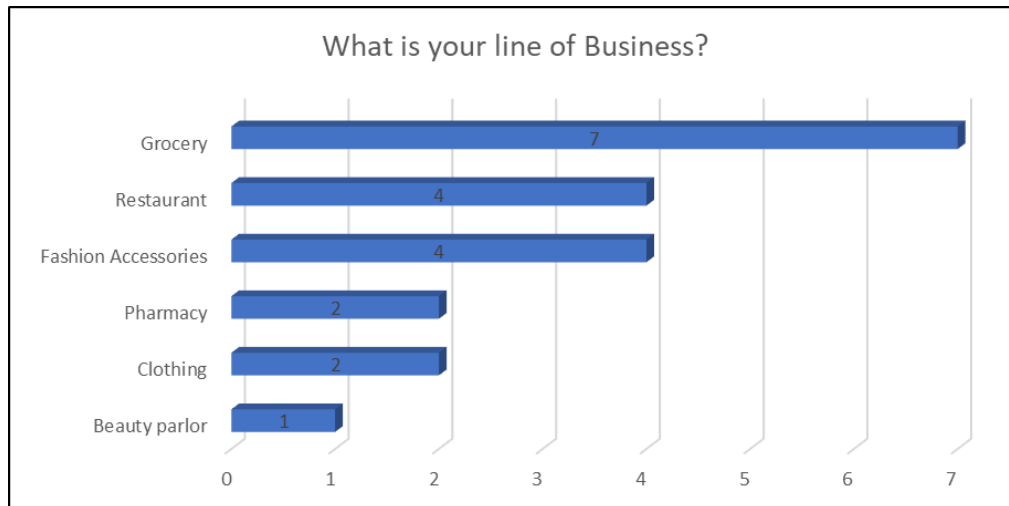
We are in a nearly transformational period by 2021 when many organizations are changing from paper to digital because the retail sector costs billions of dollars each year in the form of thermal paper receipts. Digital receipts are significantly lower and decrease overhead operational costs because printing is not involved.

4.3 Retailers Analysis

About Business

With the retailers/merchant survey, the goal was to get more real insights from the retailers of UAE – To understand their business, expenses, and perspective on the paper receipt for the coming future.

Figure 24 Merchant Survey: About Business: Line of Business



Most of the respondents were from small grocery owners and restaurants, including cafes and cafeterias. 16 of 20 retailers had only one operating branch, 3 of them had 3-5 branches, whereas one retailer had more than five branches in UAE. It is interesting to get information from retailers with different business setups. Out of the total respondents, only one retailer confirmed that they use both paper and digital Receipts in their store. This shows that most of the small-scale retailers in the UAE are using paper receipts as of today.

Purchase Trend

Figure 25: Merchant Survey: Purchase Trend: Number of rolls used



The number of rolls being used by a business depends on various factors such as:

- The size of its operations
- Volume of transactions
- Whether both merchant and customer copy are printed

Considering these factors, the merchants were asked about their usage per roll; 40% of the retailers change their roll every day, whereas the other 40% can run the transactions with just one thermal paper roll. The dimensions shared by all the retailers were the same as 80mm*80mm, which is the usual size of the printed Receipt that we receive on every Purchase.

With the increase in eCommerce post-COVID-19, there has been a major fall in in-store transactions; the UAE had the biggest annual spend per online shopper in the region at \$1,648 in 2020(Sophia, 2020). The reduced in-store transactions eliminate the scope of printed Receipts only if the order being placed is from an online website/application because only in those scenarios is a consumer able to get the digital Receipt. If the order is placed via phone calls, receipts are still sent to the consumer stapled to the package ordered.

Assessing the Real Impact

Figure 26: Merchant Survey: Purchase Trend: Consumption analysis

Daily Paper Receipt Roll Consumption		
Less than 5	Between 6-10	More than 10
2	5	13
Paper Roll Expense		
Less than 5 AED	Between 5 AED - 10 AED	More than 10 AED
8	11	1

With the received responses from the survey, if we consider the transactions for low, medium, and high range retailers within the small-scale segment, what is the actual impact of this usage on an overall level?

All the retailers use 80mm*80mm thermal paper rolls with an average receipt size of approximately 15cms. Figure 26 shows that 13 retailers confirmed that they consume more than ten rolls in a day, indicating that with average pricing between 5 to 10 AED (7.5 AED), they spend around 75 AED on the paper receipt roll every day.

Figure 27: Merchant Survey: Purchase Trend: Spend Analysis

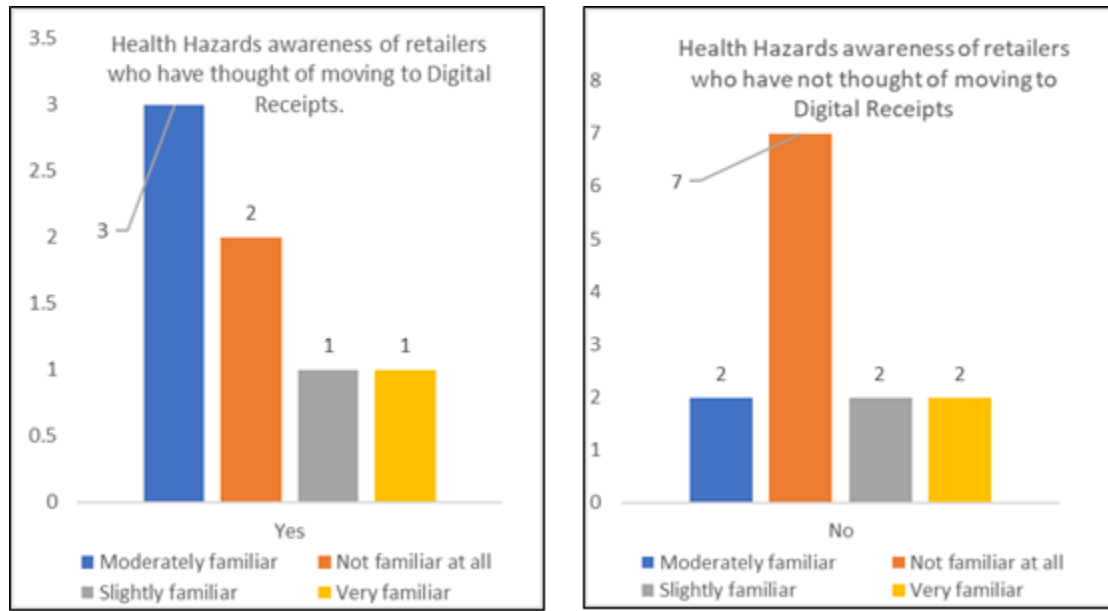
Daily Usage	Average Spend (in AED)	Daily Average Expense on Rolls (in AED)	Weekly Average Expense on Rolls (in AED)	Monthly Average Expense on Rolls (in AED)	Yearly Average Expense on Rolls (in AED)
3 Rolls	2.5	7	52.	225	2,737
	7.5	22	157	675	8,212
	10	30	210	900	10,950
8 Rolls	2.5	20	140	600	7,300
	7.5	60	420	1,800	21,900
	10	80	560	2,400	29,200
13 Rolls	2.5	32	227	975	11,862
	7.5	97	682	2,925	35,587
	10	130	910	3,900	47,450

Figure 27 provides an in-depth analysis of the expenses a business incurs on the receipts assuming they have a varying usage of rolls per day and source receipts at different prices. For some, this expense might be trivial if the transaction volume is not huge, but if the volume is high, then that means big market retailers are spending ~47,450 AED or more just on buying these paper receipts. This does not include the following costs yet:

- Cost of the mini-Receipt printed on debit card or credit card payment
- Cost of electricity to run the printer
- Cost of a separate CRM to manage customers data
- Environmental Cost
- Health Cost

Awareness

Figure 28: Merchant Survey: Awareness: Health Hazards



For a business to run efficiently, it must be aware of its resources and impact on its employees, environment, and consumers. The survey showed two different points of view, which further helps understand the mindset of UAE's retailers:

Planning to go Digital

Less than 50% of the retailers stated that they have plans to move to digital receipts in the future. Whether this motivation to transform was due to their awareness of their employees' health was an important area of consideration. 71% of the retailers stated that they are aware of the health hazards exposing their employees to, which is why they want to change in the future.

Being Digital? Still no plans

Most of the retailers had no plans to move to digital receipts even soon. About 60% of the retailers have not made it mandatory for their cashiers to wear gloves while handling the receipts. What comes as a surprise is that despite 90% of retailers being aware of the health hazards, they chose not to change. There can be various reasons behind retailer's lack of interest:

- Scared of the expenditure
- Careless towards employee's health
- Unaware of the real damage

- Lack of consumer, employee, and social responsibility

Figure 29: Merchant Survey: Awareness: Receipt Disposal



How well a business manages its resources and trash represents a lot about its responsibility towards its planet. Just by following the trends of sustainability, one cannot ensure that the output will be accurate. 10% of the retailers confirmed that they send the thermal paper receipt trash for recycling. The fact is that thermal paper receipts are non-recyclable (Low, 2017), so businesses who are confirming the recycling are either unaware of what happens to the paper or have not given their genuine response. The ideal way of disposing of the paper receipt is by trashing it directly into the bin at the store as it eliminates the scope of transferability of BPA to surroundings. As seen via responses, the remaining 90% segregate their waste as dry or wet waste within the store or trash the Receipt directly in the bin.

Understanding Present, Moving to Future

When the retailers were inquired about their opinion on how important the paper receipts are, 100% of the retailers confirmed that it is highly important. This is a clear sign of their dependence on the receipts. In 2021, when we are in the age of the Fourth Industrial Revolution, businesses still relying on a piece of paper to manage their accounting or track their transactions is indeed alarming!

Why is moving to digital receipts a challenge?

Figure 30: Merchant Survey: Understanding Present, Moving to Future: Challenges



For any business, it is extremely difficult to go through change. What might seem extremely straightforward to its employees or customers might be one of the most difficult things for the business. The first form of paper receipt was made in the 1890s, and with Time, there have been various transitions; from handwritten Receipt to printed, and now it is moving towards digital. In each phase or era, there has been reluctance about the change and raised concerns. 25% of the retailers feel that Managing infrastructure or placing an IT structure within their business setup is the biggest challenge in moving to digital receipts. For a business whose every transaction is on paper, and the maximum IT infrastructure they have in place is a laptop for VAT filing – moving to e-receipts is surely a challenge. 35% of the retailers were worried about the cost or the expenses they would incur in taking this move. However, this is only if the merchant has not looked up the various cloud-based software and opportunities available today, making this transition as easy as downloading a mobile application.

Almost 40% of the retailers found the transformation challenging because they were unaware of the digital customer journey. This shows why most respondents have selected SMS/Text Message as the preferred option for sending the Receipt if they switch to digital receipts.

What do you expect?

Figure 31: Merchant Survey: Understanding Present, Moving to Future: What do you expect?



Actions that businesses take are backed up by some research and recommendations. How well a business manages change and transformation is also extremely crucial for a successful output. Every business has some key stakeholders towards whom the business holds some accountability. Three key stakeholders for every business are – consumers, employees, and society. This survey helped understand the mindset of the retailers; the two key stakeholders which could inspire them to make a change and move towards digital receipts were – consumers and government. 35% of the retailers said that if their consumers request that they start e-receipts, they will be willing to change. This shows how important do these businesses to consider their consumer's feedback. Most performing companies realize that customer-oriented needs a mixture of attraction, commitment, satisfaction, cooperation, and retention, defined by revenue increase, profitability, market share, and customer satisfaction. If businesses can retain them and gain their trust by fulfilling customers' demands, that is the key to success. 75% of the retailers said that the only scenario where they expect them to be migrating to an e-receipt is when the government makes it mandatory. This is one of the situations where businesses do not have an option; if they do not, they must bear hefty fines.

4.4 Conclusion

This chapter aimed to provide an in-depth insight from the surveys conducted with the customers and the merchants. The findings from this section will help design the recommendations for the retailers.

5. Conclusion and Recommendations

5.1 Introduction

This chapter concludes the research and provides recommendations, including the areas for future research. Lastly, the chapter highlights the aspects learned by this research and how these will help the researcher achieve his future ambitions.

5.2 Key Recommendations

This study has helped the author gain many insights into the existing paper receipts scenario in the retail industry of the UAE. For a successful evolution in an industry, it is necessary to focus on every stakeholder associated with that industry.

The recommendations from this study are divided into two parts, short term, and long term; this will further provide a vision to achieve the long-term goal while fulfilling the short-term agendas. After doing the above research and study, there are three key recommendations:

In the short run,

- ***Identify and Analyze risks***

Risks for staff and the organization, understanding that high-risk issues will demand the utmost attention to training on behavioral change, should be identified and prioritized. When prioritized, the risks should be linked and included into the company's strategic strategy to support important business goals. Thus, several major objectives may include increase in income, reducing expenditure, time loss and reducing risk. Companies should start with the training sessions for their employees providing them with the knowledge that is necessary to upkeep their health.

- ***Staying Relevant:***

The effort of keeping all staff compliant with their task might be daunting, making it important to have an efficient learning system focused on compliance. Compliance leaders should aggressively seek input from employees, listen to their issues and deal rapidly with their demands to be relevant. To create a compliance-based culture, employees should have the authority to enhance safety and quality. Once workers are aware of how their training, their family, and the success of the firm are important to them, they will feel more involved in compliance. Once the employees are educated to understand the change, they are the first ones to appreciate and embrace it in the organization

- ***Government Regulations:***

As many other governments have already taken steps towards it, UAE government must place restrictions and heavy-duty charges on the purchase of thermal paper with BPA/BPS. The economy must be regulated in a way that alternate paper material without hazardous chemicals is available at more cheaper prices, making it easier for the retailers to switch slowly.

In the Long run,

- ***Leadership must get involved***

It must begin at the top of the cultural shift. The leadership team must provide full support for a safe, people-centered culture. Leaders may show their commitment to safety and the culture of compliance through video inclusion in the training. Leaders should consider training to be a chance to share expectations of what the employee conduct is and is not acceptable. It is where people know what their leaders expect from them, how they are responsible for their

responsibilities and how they and their families are trained. It is vital that employees are empowered to take responsibility for themselves and their employees' safety.

- *Grow the mindset for digitization*

Retailers need to get out of the traditional approach of working and start picking up opportunities to grow and enhance their digital presence. Over the long run, they must hire resources that can add value to their culture shift, bring digital transformation at affordable levels. Getting the accurate knowledge from the industry experts will allow retailers to understand the cost being saved with the transformation in contrast to their current thought of transformation being an expensive affair. My sympathy is towards the approach shared by Van et al., 2021, where a merger of business, technology and consumers was made.

- *Unified Application*

Considering consumers as the baseline, it is important to build a unified application for all the transactions made. Having multiple applications by each brand/store will complicate the user's journey. Consumers will not be willing to download one specific application per brand and they might find this transition extremely difficult. It is recommended that an application is launched where a user can track all their receipts, apply for reimbursements, manage exchanges and warranty and so on.

- *Government Measures*

After observing how successful UAE Government's "Digital Paperless Strategy" has been for the government sector, it is highly recommended that the Government also intervenes with the private sector. In the long run, government must ban the use of paper receipts and promote/support/mandatories' the digital receipts software. As seen via survey, the only point where retailers observe themselves transforming to digital receipts is only if it is made mandatory by the government.

5.3 Conclusion

This research has been able to provide an in-depth insight on the retailers, consumers, and society at a holistic level. The damages caused by BPA and other chemicals on environment and health have been researched well and provides clear evidence that humans need to be more careful with its usage. Consumers are aware of their needs but do not have the right knowledge to build a mindset around it. However, with the use of right approach in the right direction, both businesses and consumers can benefit from the digitization. UAE Government being extremely

proactive with their initiatives can help change the retail sector receipts system and be the first country in the world to digitize the whole economy on a digital receipt platform.

6. Reflective Summary

In August 2020, I began my journey to do an MBA with Middlesex University after contemplating for almost four years. This decision was backed by a whole mindset and willingness to learn, grow, and change. As this journey comes to an end, it makes me confident and proud of the decision I had taken. May it be a basic assessment or the final assignment, or the dissertation, the faculty has always been of extreme help in every aspect. With my specialization in Business Analytics, I grew in my career in the same organization within six months. This research on the future of paper receipts in the retail industry of UAE is a very close topic to be personally as I am already working on being in the UAE market as the service provider to make further it easy for businesses, consumers, and society.

This research was a great experience for me mainly because it was specifically concerned with the retailers and consumers, an area of my interest. The paper receipts impact has been studied in various research with different aspects, and this research focused on combining different research to conclude. My mentor was extremely supportive throughout this journey. In the three sessions I have had with my mentor, I was able to get a clear vision and path on how to approach this project. This research has helped me grow personally in many ways. I have learned to analyze and structure things in a better way. To complete the thesis, I worked practically by talking to many people and studying a lot of books, journals, and internet materials. It took me almost four months to finish this thesis with all my hard work involved in it. At the beginning itself, I created a detailed list of actionable I had to do to stay on track with my research. Proper and timely planning has helped me a lot during this phase. During the research, I had many scenarios where I found myself stuck or doing repetitive reading because it was difficult to decide where to stop the readings. My mentor advised me to create categories, subcategories and structure the report in the same way. This helped me structure my literature review readings and further the analysis. While working on the research findings, I realized that it is very important to understand how to frame the output. One must be clear enough that the output is not very tricky because users from different backgrounds will read it, and the output should not be very easy because then it will look like redundant information. University professors organized various boot camp sessions, and one such session which helped me with my research findings was the session by Dr. Sreejith on data analysis for the dissertation.

In written communication, I always thought I excelled. I felt it was easy to communicate my thoughts and feelings effectively using words and expressions. The best approach to deal with time was a major obstacle for me. I have always been a procrastinator. However, I understood that I would have to change my mindset and approach after my first boot camp session. Over the years, I could not fully eradicate the tendency of delay, but I learned certain time-management skills greatly required. I was able to explore other aspects of myself, going beyond the 1 500 words essay and completely exploring my capacity to take a topic in depth. This dissertation let me understand that when it comes to expressing an idea, words are not limited. I could express a million methods of doing a basic thing and master how to investigate each of them in my written words to reach excellence. By expanding my thoughts to other fields of expression, I also gained new freedom in my writing. However, throughout this overall MBA journey, I have become more patient with myself. Instead of always challenging and pushing myself to achieve more, I have started giving some space to myself by not pressurizing myself to be at the top in everything. Because of this shift in mindset, I observed that it improved my understanding of a subject and allowed me to go in-depth and soul of the subject matter. By studying new techniques and researching other approaches, I now have a sturdy foundation and a robust writing arsenal for future endeavors.

I have been able to grow in aspects more than I had expected. The biggest learning I have had in this journey was the power to unlearn. I joined with many preconceived notions about various topics. After starting the study, I realized how opinions change and how comfortable a person must be in adapting to that change without taking things personally. I am highly grateful for all the learnings, classes, experiences I have had so far in this MBA journey.

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References

Ahmed, S., Syed, A.A., Firoz, M. and Firozsangra, S. (2020). An Economic Overview of Retail Sector in Dubai. *International Journal of Business and Management Invention (IJBMI)* ISSN, [online] 9(7), pp.58–66. Available at: [http://www.ijbmi.org/papers/Vol\(9\)7/Ser-3/H0907035866.pdf](http://www.ijbmi.org/papers/Vol(9)7/Ser-3/H0907035866.pdf) [Accessed 19 Aug. 2021].

Alpen Capital Group (2019). *Alpen Capital | Industry Reports*. [online] Alpencapital.com. Available at: <http://www.alpencapital.com/industry-reports.html> [Accessed 15 Sep. 2021].

Anderson, R.E. and Srinivasan, S.S. (2003). E-satisfaction and e-loyalty: A contingency framework. *Psychology and Marketing*, 20(2), pp.123–138.

ANGHEL, D. (2019). The Ground Rules for Managers and Leaders in the Change Management Process of Digitization. *Quality-Access to Success*, [online] 20(3), pp.37–42. Available at: https://www.srac.ro/calitatea/en/arhiva/supliment/2019/Q-asContents_Vol.20_S3_October-2019.pdf#page=29 [Accessed 23 Sep. 2021].

Barbuscia, D. (2021). UAE economy to grow 2.5% in 2021 after shrinking 5.8% last year - c.bank. *Reuters*. [online] 18 Mar. Available at: <https://www.reuters.com/article/emirates-economy-cenbank-int-idUSKBN2BA1OK> [Accessed 15 Sep. 2021].

Bevan, S. (2010). *The Business Case for Employees Health and Wellbeing*. [online] citeseerx.ist.psu.edu. Available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.614.5210&rep=rep1&type=pdf> [Accessed 19 Sep. 2021].

Butt, G. (2012). *Oil and Gas in the UAE*. [online] Oil and Gas in the UAE, pp.231–248. Available at: <https://www.badrinvestments.com/wp-content/uploads/2012/06/oil-and-gas-in-UAE-DA.pdf> [Accessed 15 Sep. 2021].

C. Verhoef, P., Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi Dong, J., Fabian, N. and Haenlein, M. (2021). *Digital transformation: A multidisciplinary reflection and research agenda*. [online] reader.elsevier.com. Available at: <https://reader.elsevier.com> [Accessed 20 Sep. 2021].

Christensen, F.M., Clausen, A.J., Brinch, A. and Mikkelsen, S.H. (2014). *Background for national legislation on bisphenol A (BPA) in EU and EFTA countries* Title: *Background for national legislation on bisphenol A (BPA) in EU and EFTA countries*. [online] Available at: <https://www2.mst.dk/Udgiv/publications/2014/03/978-87-93178-18-2.pdf> [Accessed 18 Sep. 2021].

Dani, S. (2014). (PDF) Middle East Retail: Fostering Growth despite Challenges. *Middle East Retail: Fostering Growth despite Challenges*, [online] 3(1). Available at: https://www.researchgate.net/publication/324676612_Middle_East_Retail_Fostering_Growth_despite_Challenges [Accessed 19 Aug. 2021].

Elg, U. and Hultman, J. (2016). CSR: retailer activities vs consumer buying decisions. *International Journal of Retail & Distribution Management*, 44(6), pp.640–657.

Fernández, M.F., Molina, J.M., Jiménez-Díaza, I., Rodríguez-Carrillo, A., Peinado, F.M. and Mustieles, V. (2019). *Middlesex University Login*. [online] www-sciencedirect-com.ezproxy.mdx.ac.uk. Available at: <https://www-sciencedirect-com.ezproxy.mdx.ac.uk/science/article/pii/S0013935118306820?via%3Dihub> [Accessed 18 Sep. 2021].

Frankowski, R., Grześkowiak, T. and Sójka, K. (2020). The presence of bisphenol A in the thermal paper in the face of changing European regulations – A comparative global research. *Environmental Pollution*, [online] 265(80-), p.114879. Available at: <https://www.sciencedirect.com/science/article/pii/S0269749120320947> [Accessed 17 Sep. 2021].

Fukazawa, H., Watanabe, M., Shiraishi, F., Shiraishi, H., Shiozawa, T., Matsushita, H. and Terao, Y. (2002). Formation of Chlorinated Derivatives of Bisphenol A in Waste Paper Recycling Plants and Their Estrogenic Activities. *Journal of Health Science*, [online] 48(3), pp.242–249. Available at: https://www.jstage.jst.go.jp/article/jhs/48/3/48_3_242/article-char/ja/ [Accessed 17 Sep. 2021].

Hashmi, S. and Rose, I. (2021). Rescheduled Dubai Expo hopes to attract 25 million visits. *BBC News*. [online] 10 Apr. Available at: <https://www.bbc.com/news/business-56682427> [Accessed 15 Sep. 2021].

Hawk, W. (2011). *Household spending by single persons and married couples in their twenties: a comparison*. [online] Available at: <https://www.bls.gov/cex/anthology11/csxanth6.pdf>

[Accessed 25 Sep. 2021].

Heavin, C. and Power, D.J. (2018). Challenges for digital transformation – towards a conceptual decision support guide for managers. *Journal of Decision Systems*, [online] 27(sup1), pp.38–45. Available at: <https://doi.org/10.1080/12460125.2018.1468697> [Accessed 23 Sep. 2021].

Hemalatha, M. and Sivakumar, V.J. (2017). HYPER MARKET INDUSTRY IN DUBAI -AN EVALUATION USING AHP TECHNIQUE. *The International Journal of Applied Management and Technology*, [online] 7(1). Available at: <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=1012&context=ijamt> [Accessed 15 Feb. 2020].

Henni, A. (2013). *Ali Rashid Al-Jarwan, CEO, Abu Dhabi Marine Operating Company*. [online] <https://jpt.spe.org/>. Available at: <https://jpt.spe.org/ali-rashid-al-jarwan-ceo-abu-dhabi-marine-operating-company> [Accessed 15 Sep. 2021].

Hormann, A.M., Vom Saal, F.S., Nagel, S.C., Stahlhut, R.W., Moyer, C.L., Eilersieck, M.R., Welshons, W.V., Toutain, P.-L. and Taylor, J.A. (2014). Holding thermal receipt paper and eating food after using hand sanitizer results in high serum bioactive and urine total levels of bisphenol A (BPA). *PloS One*, [online] 9(10), p.e110509. Available at: <https://pubmed.ncbi.nlm.nih.gov/25337790/> [Accessed 18 Sep. 2021].

Irawan, F. (2006). [Peter Mudie, Angela Pirrie] Services Marketing Marketing. *www.academia.edu*, [online] 3(3). Available at: <https://www.academia.edu/34431222> [Accessed 20 Sep. 2021].

Jain, P., Asrani, C. and Jain, T. (2018). Resistance to Change in an Organization. *IOSR Journals*, [online] 20(5), pp.37–43. Available at: <http://www.iosrjournals.org/iosr-jbm/papers/Vol20-issue5/Version-7/E2005073743.pdf> [Accessed 4 May 2020].

John, I. (2021). *Not a tough sell: UAE retail sector poised to be best in GCC*. [online] Khaleej Times. Available at: <https://www.khaleejtimes.com/business/retail/not-a-tough-sell-uae-retail-sector-poised-to-be-best-in-gcc> [Accessed 25 Sep. 2021].

Kemp, S. (2021). *Digital in the UAE: All the Statistics You Need in 2021*. [online] DataReportal – Global Digital Insights. Available at: <https://datareportal.com/reports/digital-2021-united-arab-emirates> [Accessed 25 Sep. 2021].

Khan, M., Lockhart, J. and Bathurst, R. (2020). A multi-level institutional perspective of corporate social responsibility reporting: A mixed-method study. *Journal of Cleaner Production*, [online] 3(3), pp.9–11. Available at: <https://www.researchgate.net/> [Accessed 20 Sep. 2021].

Kindall, J. (2009). Suffolk's Ban on BPA Hailed in Some Quarters. *The New York Times*. [online] 13 Mar. Available at: <https://www.nytimes.com/2009/03/15/nyregion/long-island/15cuppli.html> [Accessed 18 Sep. 2021].

Kotler, P. (2017). Customer Value Management. *Journal of Creating Value*, 3(2), pp.170–172.

Kumar, A. (2021). *Covid-19: UAE on robust recovery after Dh395 billion lifeline*. [online] Khaleej Times. Available at: <https://www.khaleejtimes.com/business/economy/covid-19-uae-on-robust-recovery-after-dh395-billion-lifeline> [Accessed 15 Sep. 2021].

Lal, M. and Prabhakar, R. (2007). CUSTOMER RELATIONSHIP MANAGEMENT (CRM) IN RETAIL. *Apeejay Journal of Management and Technology*, [online] 2(1). Available at: <https://www.ajmt.apeejay.edu/docs/volume2/Volume2No1Article1.pdf> [Accessed 20 Sep. 2021].

Liao, C. and Kannan, K. (2011). High Levels of Bisphenol A in Paper Currencies from Several Countries, and Implications for Dermal Exposure. *Environmental Science & Technology*, [online] 45(16), pp.6761–6768. Available at: pubs.acs.org [Accessed 18 Sep. 2021].

Low, M. (2017). *Eco Tip: Don't Recycle Thermal Paper Receipts | Weavers Way Co-op*. [online] weaversway.coop. Available at: <https://weaversway.coop/shuttle-online/2017/04/eco-tip-dont-recycle-thermal-paper-receipts> [Accessed 26 Sep. 2021].

Matt, C., Hess, T. and Benlian, A. (2015). Digital Transformation Strategies. *Business & Information Systems Engineering*, [online] 57(5), pp.339–343. Available at: <https://link.springer.com/article/10.1007/s12599-015-0401-5> [Accessed 20 Sep. 2021].

Meyer, C. and Schwager, A. (2021). *Understanding Customer Experience*. [online] Available at: https://idcexed.com/wp-content/uploads/2021/01/Understanding_Customer_Experience.pdf [Accessed 20 Sep. 2021].

Mishrif, A. and Al Balushi, Y. (2018). *Economic Diversification in the Gulf Region*. [online] palgrave.com. Available at: <http://ndl.ethernet.edu.et/bitstream/123456789/59556/1/113.pdf#page=79> [Accessed 15 Sep. 2021].

Nagraj, A. (2015). *Oil No More: The UAE Diversifies*. [online] Gulf Business. Available at: <https://gulfbusiness.com/oil-uae-diversifies/> [Accessed 15 Sep. 2021].

National Committee on Sustainable Development Goals. (2016). [online] Available at: https://sustainabledevelopment.un.org/content/documents/20161UAE_SDGs_Report_Full_English.pdf [Accessed 15 Sep. 2021].

Nazir, S. (2020). *Market Snapshot: United Arab Emirates - Retail Gazette*. [online] www.retailgazette.co.uk. Available at: <https://www.retailgazette.co.uk/blog/2020/12/snapshot-united-arab-emirates-uae-retail-profile-in-depth/> [Accessed 25 Sep. 2021].

Ndaw, S., Remy, A., Jargot, D. and Robert, A. (2016). Occupational exposure of cashiers to Bisphenol A via thermal paper: urinary biomonitoring study. *International Archives of Occupational and Environmental Health*, 89(6), pp.935–946.

Nguyen, J. (2019). *Conscious Consumerism: What It is, How It Can Affect Change & 8 Ways You Can Be a Conscious Consumer Yourself - Grow Ensemble*. [online] Grow Ensemble. Available at: <https://growensemble.com/conscious-consumerism/> [Accessed 25 Sep. 2021].

Office, D.M. (2018). *Sheikh Hamdan launches Dubai Paperless strategy*. [online] Khaleej Times. Available at: <https://www.khaleejtimes.com/nation/dubai/sheikh-hamdan-launches-dubai-paperless-strategy> [Accessed 9 Sep. 2021].

Paul, H. (2021). *What will the UAE economy look like in the next few years?* [online] gulfnews.com. Available at: <https://gulfnews.com/uae/year-of-the-50th/what-will-the-uae-economy-look-like-in-the-next-few-years-1.1623075245608> [Accessed 7 Sep. 2021].

Quaife, D. (2019). *Dubai Online Grocery Report 2019*. [online] UAE: Practicology. Available at: https://www.practicology.com/download_file/force/702/2061 [Accessed 25 Sep. 2021].

Rahal, N. (2021). *How Expo 2020 programs will gather the globe around building sustainable future*. [online] arabianbusiness.com. Available at: <https://www.arabianbusiness.com/expo-news/468446-how-expo-2020s-programmes-will-gather-the-globe-around-building-sustainable-future> [Accessed 15 Sep. 2021].

Rahdari, A., Sheehy, B., Khan, H.Z., Braendle, U., Rexhepi, G. and Sepasi, S. (2020). Exploring global retailers' corporate social responsibility performance. *Heliyon*, [online] 6(8), p.e04644. Available at: <https://www.sciencedirect.com/science/article/pii/S2405844020314882> [Accessed

20 Sep. 2021].

Rodrigues, R.I., Lopes, P. and Varela, M. (2021). Factors Affecting Impulse Buying Behavior of Consumers. *Frontiers in Psychology*, 12(4).

Sadaqat, R. (2021). *Dubai to see 20,000 food venues operating before October 2021*. [online] Khaleej Times. Available at: <https://www.khaleejtimes.com/business/local/dubai-to-see-20000-food-venues-operating-before-october-2021> [Accessed 25 Sep. 2021].

Sheng, T. and Liu, C. (2010). An empirical study on the effect of e-service quality on online customer satisfaction and loyalty. *Nankai Business Review International*, [online] 1(3), pp.273–283. Available at: <https://www.emerald.com/> [Accessed 20 Sep. 2021].

Sherouk Zakaria (2018). *Before the oil era began, it was simple village life in UAE*. [online] Khaleej Times. Available at: <https://www.khaleejtimes.com/national-day-2018/before-the-oil-era-began-it-was-simple-village-life-in-uae> [Accessed 15 Sep. 2021].

Sophia, M. (2020). *E-commerce transactions to account for 28.2% of all UAE card payments in 2020*. [online] The National. Available at: <https://www.thenationalnews.com/business/e-commerce-transactions-to-account-for-28-2-of-all-uae-card-payments-in-2020-1.1107890> [Accessed 27 Sep. 2021].

Springer, M. (2009). *Connecticut Bans BPA*. [online] NBC Connecticut. Available at: <https://www.nbcconnecticut.com/news/local/connecticut-bans-bpa/1848749/> [Accessed 18 Sep. 2021].

Stieger, G. (2017). *Japan updates hazard classifications of TiO₂ and BPA | Food Packaging Forum*. [online] www.foodpackagingforum.org. Available at: <https://www.foodpackagingforum.org/news/japan-updates-hazard-classifications-of-tio2-and-bpa> [Accessed 18 Sep. 2021].

Sullivan, R. and Gouldson, A. (2014). Comparing the Climate Change Actions, Targets and Performance of UK and US Retailers. *Corporate Social Responsibility and Environmental Management*, 23(3), pp.129–139.

Tabrizi, B., Lam, E., Girard, K. and Irvin, V. (2019). *Digital Transformation Is Not About Technology*. [online] Harvard Business Review. Available at: <https://hbr.org/2019/03/digital-transformation-is-not-about-technology> [Accessed 20 Sep. 2021].

Tsang, H. (2019). *US State of Illinois Bans BPA in Thermal Paper*. [online] www.sgs.com. Available at: <https://www.sgs.com/en/news/2019/09/safeguards-12519-us-state-of-illinois-bans-bpa-in-thermal-paper> [Accessed 18 Sep. 2021].

UNCTAD (2020). *COVID-19 has changed online shopping forever, survey shows* | UNCTAD. [online] unctad. Available at: <https://unctad.org/news/covid-19-has-changed-online-shopping-forever-survey-shows> [Accessed 25 Sep. 2021].

Vadde, V., Nithya C. H. and Surhonne, A.P. (2015). *An NFC based innovation for paperless retail transactions and digital receipts management*. [online] IEEE Xplore. Available at: <https://ieeexplore.ieee.org/document/7443622> [Accessed 24 Sep. 2021].

Van Veldhoven, Z. and Vanthienen, J. (2021). Digital transformation as an interaction-driven perspective between business, society, and technology. *Electronic Markets*, [online] 1(2). Available at: <https://link.springer.com/content/pdf/10.1007/s12525-021-00464-5.pdf> [Accessed 20 Sep. 2021].

Verhoef, P.C., Lemon, K.N., Parasuraman, A., Roggeveen, A., Tsiros, M. and Schlesinger, L.A. (2009). Customer Experience Creation: Determinants, Dynamics and Management Strategies. *Journal of Retailing*, [online] 85(1), pp.31–41. Available at: https://econpapers.repec.org/article/eeejouret/v_3a85_3ay_3a2009_3ai_3a1_3ap_3a31-41.htm [Accessed 19 Sep. 2021].

Wadsworth, K.T., Guido, M.T., Griffin, J.F. and Mandil, A. (2010). An innovation in paper receipts: the electronic receipt management system. *2010 IEEE Systems and Information Engineering Design Symposium*, [online] 1(1). Available at: <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5469674> [Accessed 13 Aug. 2021].

WFMY (2014). *Consumer Reports: Beware Of BPA-Tainted Receipts*. [online] wfmynews2.com. Available at: <https://www.wfmynews2.com/article/news/local/2-wants-to-know/consumer-reports-beware-of-bpa-tainted-receipts/83-297956966> [Accessed 25 Sep. 2021].

Xie, M.-P. and Zhao, W.-Y. (2010). *The analysis of customers' satisfaction degree based on decision tree model*. [online] IEEE Xplore. Available at: <https://ieeexplore.ieee.org/abstract/document/5569280> [Accessed 19 Sep. 2021].

YALÇIN, M.S., GEÇGEL, C. and BATTAL, D. (2016). DETERMINATION OF BISPHENOL A IN THERMAL PAPER RECEIPTS. *Journal of the Turkish Chemical Society, Section A:*

Chemistry, 3(3).

Zalko, D., Perdu, E., Jacques, C., Duplan, H. and Bruel, S. (2010). *Viable skin efficiently absorbs and metabolizes bisphenol A*. [online] reader.elsevier.com. Available at: <https://www.sciencedirect.com/science/article/pii/S0045653510010854?via%3Dihub> [Accessed 18 Sep. 2021].