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UNDERSTANDING BLOCKCHAIN TECHNOLOGY IN RETAIL BRANDING FOR ENHANCING CUSTOMER EXPERIENCE AND STRENGTHENING THE RETAIL BRAND-CUSTOMER RELATIONSHIP

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Abstract

Though the concept of branding used to associate with the manufacturers, over the past decades, to survive the fierce competition in today's business world, branding becomes indispensable for all business organizations including retail. Branding is important for the retail organization for delivering their brand promises and for increasing their brand equity. The growth of the internet and technological advancement has shaped the way the brand used to communicate. These technological advancements have opened new avenues and opportunities as well as created new challenges for the retail brands.

Besides, in recent years, customers became more concern about society and the environment due to the adverse effects of human and business activities. Most of the customers now want and expect products that have been sustainably procured, produced, transported, and fairly traded. This sustainability concern of the customers is creating pressure on the retailers to act in a responsible way towards society and the environment. But the brands are suffering in spite of trying hard to deliver products in a sustainable way to meet the customers' expectation, as customers are reluctant to rely on brand's promises and hesitate to buy due to the lack of availability of authentic and credible information about the products and services retailers offer and is resulting in poor brand loyalty and declined brand equity. The aim of this thesis is to understand customer's perspective on identifying the implications of blockchain technology for solving these problems of trust on retail brands and explore the way for increasing brand loyalty and enhancing brand equity through elevating the customer experience with the retail brands and strengthening the relationships with the customers.

The conceptual framework is developed based on the theoretical analysis of existing literature on brand and blockchain technology. This thesis is conducted based on a qualitative research design to meet the purpose of the thesis. The thesis followed an abductive reasoning approach throughout the research process. A semi-structured interview was conducted for investigating and validating the developed conceptual framework and concluded with an empirically validated framework. The target population comprises both male and female from different nationalities and fall in the age group 26 to 40.

The empirically validated framework of the research findings reveals that the unique characteristics of blockchain technology have enough potentiality for adding value to the retailers' branding effort through effective advertising and loyalty programs and efficient inventory management. The research finding further conclude the utilization of blockchain technology in uplifting customer experience and strengthening retail brand-customer relationship for achieving increased brand loyalty and enhanced brand equity.

Keywords
blockchain technology, retail branding, customer experience, brand-customer relationship, brand equity, brand loyalty.

Additional information

CONTENTS

FIGURES:

TABLES:

1 INTRODUCTION

This chapter introduce the readers to the background and significance of the research, clarify the purpose of the research and define the research gap and research questions.

1.1 Background and significance of the research topic

In today's competitive global market, the role of branding is indispensable for delivering the firms' promise to consumers and providing the assurance of the quality of the products they purchase (Veloutsou & Moutinho, 2009). The upsurge of the internet and the proliferation of social media has revolutionized the way brands used to communicate with their consumer and shifted the focus and scope brand management from the traditional way to online and technology-enabled interactions (Christodoulides, 2009; Kohli, Suri & Kapoor, 2015). While the technological advancement (e.g., Blockchain, virtual reality) in this digital era has opened up new avenues and providing new opportunities for the brand to nurture their relationship with the customers, they are also creating new challenges which might result in damaging customers' experience with the brand (Scholz & Duffy, 2018).

'Blockchain' represents one of these emerging technologies that permit the use of decentralized databases and peer-to-peer networks to store a history of transactions which is connected as a chain (Kokina, Mancha & Pachamanova, 2017). According to Iansiti and Lakhani (2017), 'blockchain' implies the use of a shared distributed database for initiating digital transactions over a peer-to-peer network and for tracking the tangible or intangible assets involved in it. Despite having limited availability of the literature about the prospective challenges and opportunities of blockchain adoption in marketing and branding journals (Hughes, Park, Kietzmann, Archer-Brown, 2019; Morkunas, Paschen & Boon, 2019; Montecchi, Plangger & Etter, 2019), blockchain-based apps and platforms have become progressively popular over the past few years across industries from airlines to retailers and financial service providers (Casino, Dasaklis & Patsakis, 2018; Kokina et al., 2017).

Several studies reported that the adoption of blockchain technology has shaped the brand's marketing performance to a great extent starting from brand communication

to the design of online marketing campaigns for improving brand transparency to consumers. The unique characteristics and attributes of blockchain technology have huge potentiality in modifying the way consumers interact and get connected with brands and thus brands should consider the effects of blockchain-enabled apps (Mattila, 2016; Tapscott &Tapscott, 2017).

The study of Cognizant (2017) revealed that retailers are increasingly recognising the transformative ability of blockchain technology for restructuring operational activities, ensuring product authenticity, and tracking supply chain and regenerating supply chain management. Blockchain could renovate the retail industry and alter the way they communicate customers through their branding efforts. Many giant retail organizations, for example, Amazon, Carrefour, Auchan and Walmart etc. have already implemented blockchain technology in their supply-chain for ensuring authenticity, transparency, and sustainability. But the utility of blockchain technology is not limited here rather it has grabbed the attention of marketer for identifying the implication of this technology in building or enhancing brand image to ensure maximum customer satisfaction and loyalty for enhancing brand equity. Thus, this thesis aims to investigate on how this distributive technology can add value to strategic brand management and aspire to shed lights on the potential implication of this technology for enhancing customer experience and strengthening the retail brand-customer relationship.

1.2 Research gap

The prevailing branding literature progressively focuses on how social media can affect consumers' advocacy and online reviews upon resonating this new existence of online media and internet (Karakaya & Barnes, 2010; Kohli et al., 2015) followed by relevant studies to investigate the role of online brand communities and consumer cooperatives for consumers' brand engagement (Essamri, McKechnie & Winklhofer, 2019; Laroche, Habibi & Richard, 2012), the use of interactive communication methodologies (e.g., storytelling) in building consumer-brand relationships (Pera & Viglia, 2017) and the influence of user-generated content on consumers' experience with the brand (Kim & Johnson, 2016; Veloutsou & Guzman, 2017).

Despite increasing focus on developing branding literature, very limited number researchers devoted themselves to exploring how firms can incorporate emerging technologies, (i.e., augmented reality (AR), virtual reality (VR), blockchain etc.) in their branding efforts especially in the retail sector and in investigating on how these advanced technologies can change consumers' experience with the retail brand and create value for them (Scholz & Duffy, 2018; Gielens & Steenkamp, 2019). However, the researchers have focused on investigating how AR and VR can stimulate the user experience and enhance brand engagement in the retail clothing industry (Ho et al., 2013).

Furthermore, there has been extensive study done on investigating the implementation of blockchain technology in the retail industry especially for implementing IoT based integrated blockchain in the retail supply chain (Aich et al., 2019) for automating and increasing the effectiveness and efficiency of retail supply chain management (Miraz, Hassan & Sharif, 2020), leveraging blockchain and edge computing to design and develop a new robust retail POS system (Hu et al., 2018), incorporating blockchain in retail banking (Higginson, Hilal & Yugac, 2019).

Nevertheless, there are increasing pieces of literature is developing on blockchain technology, the empirical literature on finding out the implications of blockchain technology in retail branding is hardly available. The exploration of the implication of

blockchain technology in retail branding still has not gained much attention of the researchers, even though the retailers are struggling for establishing their brand and enhancing their brand equity. Therefore, there is an opportunity to study for identifying the potential implication of blockchain technology in retail branding and how this technology can be leveraged for enhancing customer experiences and strengthening the retail brand-customer relationship.

1.3 Purpose of the study and research question

In this era of digitization, retail businesses are always at edge thriving to achieve competitive advantage by delivering value, authentic products, quality services and accurate brand information that meet the yearnings of customers. This is more so because customers are now more knowledgeable and more concerned about sustainability.

To alleviate some of these concerns, it appears to the researcher that the adoption of blockchain technology by retail organisations will be key at minimising the challenges of product authenticity, improve transaction transparency and the reliability of emanating from retailers (Sunny, 2018). For example, nowadays customer prefers sustainable and organic products that are sourced and produced responsibly. But in most cases, it seems that customers hesitant about buying such products due to lack of assurance on the origin of such products. There are claims that marketers are greenwashing by using the label of “organic” or “green”, “local”, “fair trade,” (Co-Op, 2018) as such, customers are suspicious about such claims that cannot verified. The implementation of blockchain technology by retailers will provide the currently missing transparency by recording product and raw material sources. This have been argued to be more effective in ensuring the credibility of product information in comparison to stamping and other marketing gimmicks such as colourful display of the products, the use of attractive logos, extensive compelling advertisements, and catchy names, being currently practiced.

Therefore, the purpose of this thesis is to explore the application of blockchain technology in the retail industry, especially for branding purposes. The study will reveal how blockchain technology can be used to attract customers, build positive

brand image, enhance customer experience, and strengthen brand-customer-relationship.

The main research question of this study is:

"Does the implementation of blockchain technology by retailers having a meaningful impact on customers in adding value to retailers' branding efforts and for enhancing customer experience and retail-brand customer relationship?"

To answer this question, the research will pay attention to finding out the answers of two sub-research questions:
Q1: How the implementation of blockchain technology by retailers add value to their branding efforts?
Q2: What role(s) will the implementation of blockchain technology play in enhancing and strengthening retail-customer brand relationship and experience?

1.4 Research methodology

The research will be conducted as a qualitative study by following semi-structured interview where respondents will get the opportunity to express their views, experiences, expectations, assumptions etc. Semi structure interviews are a type of data collection method where the interviewer prepares a guide for questioning but keep the interview questions open-ended, allowing the interviewer to adapt the research questions to respondents' comprehension and articulacy (Fielding and Thomas, 2016).

A theoretical framework will be established for better understanding of the context and guide the data collection and research process. The aim of this study is to understand the customer perspective and identify how blockchain can be used for increasing brand image and thus primary empirical data will be gathered from customers. The more details about the research methodology has been discussed in chapter 6.

1.5 Structure of the thesis

This thesis is structured into eight chapters. Chapter 1 introduces the research phenomenon, research gap, purpose of the study, research questions and research methodology. Chapter 2,3 and 4 included the theoretical discussion of the thesis where chapter 2 discuss all the related theory of blockchain technology, chapter 3 and 4 described retail branding and chapter 4 illustrates the customer-brand relationship. Chapter 5 includes a conceptual framework based on theoretical analysis.

Chapter 6 discussed the overall research strategy and methodology used in this research by describing and evaluating in detail how the research was conducted, which scientific approach was used, what materials were examined and how the research data was analyzed. The research findings are presented in chapter 7, the results of the empirical study concerning the theoretical framework, the conclusion arrive, the limitation, the implications of the study for managers and recommendation for future study is being discussed in chapter 8.

2 THE BLOCKCHAIN TECHNOLOGY

This chapter discusses the basic terminologies, concepts mechanism and features of blockchain technology. In addition, the potential benefits, applications, and challenges of blockchain technology in marketing will also be discussed for providing a foundation for the research and for boosting the conceptual understanding of the readers.

2.1 What is Blockchain?

In general, blockchain technology connotes a decentralized and immutable database that combines cryptographic technology and peer-to-peer computing system to ensure secure and authentic transmission of data, information, and transactions. Pilkington (2019 via Boukis, 2019) postulated that blockchain is a large distributive digital database used for storing records of transactions in a form of blocks of continuous growing list of transaction records and data structures that are linked and secured cryptographically. According to Zhu et al. (2016), distributive ledger (blockchain technology) provides "data security, transparency and integrity, anti-tempering and anti-forgery, high efficiency, low cost". Furthermore, Iansiti and Lakhani (2017) via Boukis (2019) suggested that "blockchain" refers to the use of a shared distributed database, which processes any digital transactions over a network of users and tracks the tangible or intangible assets involved in it.

Based on the views of the scholars above, it appears that blockchain is a developing and or ever-increasing list of records which are called blocks. These blocks are connected through cryptography which is called the hash. The design of a blockchain is such that in each new block, the hash (a unique code) of the previous block is included and make a chain of blocks which contains information related to transactions. The idea of the blockchain, a record-keeping technology, was successfully first used by Bitcoin which is now being used widely in the global economy.

Overall, blockchain is a distributive, decentralized public ledger (Wikipedia, 2020) where information about the transaction is irreversible and shared across multiple

computers/users. The word blockchain contains two words: “block” and “chain”. The Block contains information about transactions which relate to the previous information or block through the cryptographic hash and form a chain of blocks or transaction information. Four requirements must be fulfilled for a block to be included in the blockchain. These included that a transaction must occur, then that transaction must be verified, the next is that transaction must be stored in a block and the block must contain a unique code called the hash.

According to Zheng et al (2018), “Blockchain can be treated as a public ledger where all information related to executed transactions are collected and stored in a chain of blocks. When a new block including new information is affixed with this chain it continues to grow. Decentralization, persistency, anonymity, and auditability are the main features of the blockchain technology. These features are supported by incorporating several core technologies such as cryptographic hash, digital signature (based on asymmetric cryptography) and distributed consensus mechanism (Reiff, 2020).

Whenever a new user or new information is attached to the blockchain network and make an attempt for a transaction, all the information about that transaction as well as all the previously stored data in that blockchain network is being broadcasted to all the users of that peer network (Risius & Spohrer, 2017; Tapscott and Tapscott, 2017). The peer network reviews all the information and verify the transaction and then give a unique identity to attach it at the end of the chain as a form of a new block and these blocks form a chain which is named as blockchain (Crosby et al., 2016; Risius & Spohrer, 2017). These blocks in the blockchain are linked with each other and hold information about transactions which are secured by public-key cryptography and communicated to the network community (Tapscott & Tapscott, 2016; 2017). The information in the blocks cannot be altered or changed as soon as it is attached to the chains (Ksetri & Voas, 2019 via Boukis, 2019; Seebacher & Schüritz, 2017).

2.2 Types of Blockchain

Blockchain can be of four types based on anonymity of validators (public and private) and trust in validators (Permissioned and permission-less).

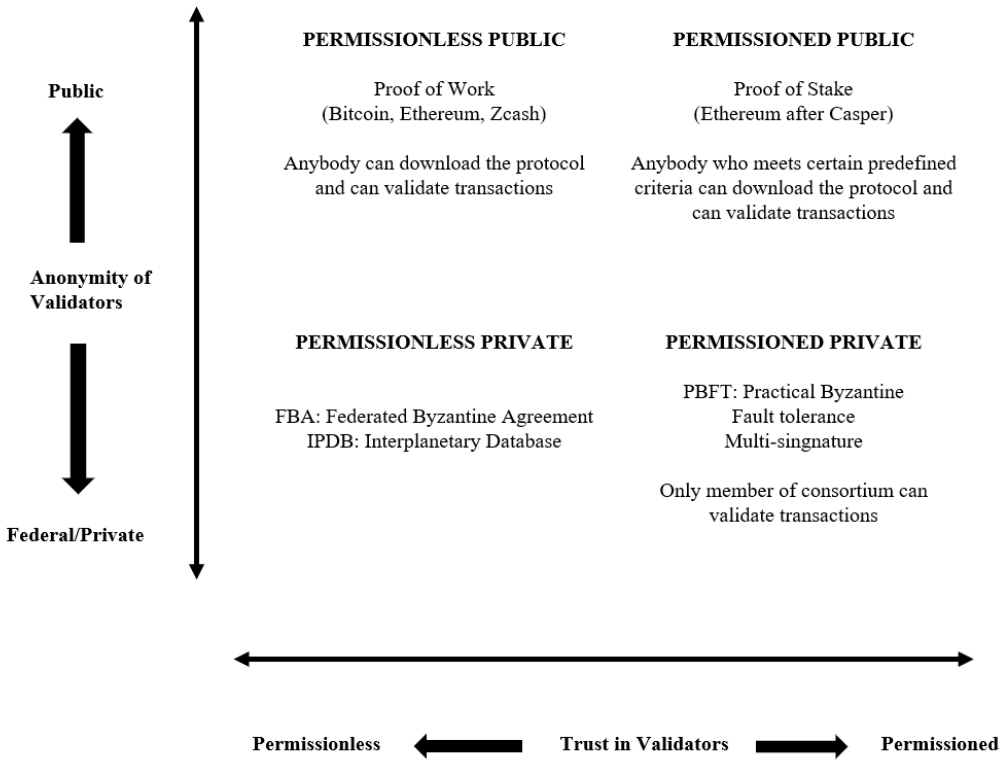

Figure 1: Types of Blockchain. (Adopted from Varghese et al., 2018)

The figure above highlights the main differences between permissioned and permission less blockchains in public and private blockchain domains. From the perspective of the public blockchain, there are two types of blockchain: permission-less public and permissioned public. The permission-less public does not need any permission and anybody is allowed to participate in the network for downloading protocol and validating transactions. On the contrary, for permissioned-public, the participants are selected beforehand based on pre-defined criteria and only those who meet the criteria can download the protocol and validate transactions (Varghese et al, 2018).

2.3 Development of Blockchain:

According to Wikipedia (2020), The idea of the cryptographically secured chain of blocks was first discussed by Haber and Stornetta in 1991 with the aim of making a tamper-free documentation system. But the first conceptualization was done by an unidentified person named Satoshi Nakamoto in 2008. The model of blockchain was proposed in 2008 and was implemented in 2009 to build a public ledger of transactions which use cryptocurrency named bitcoin (Nakamoto, 2008 via Zheng et al., 2018 and Wikipedia, 2020).

Nakamoto described this idea in his paper titled "Bitcoin: A Peer-To-Peer Electronic Cash System" about the peer-to-peer version of electronic cash which can be used in online payments without the interference of any third party (Crosby et al, 2016). From then bitcoin implemented blockchain in the network system for secure transaction. Blockchain idea continued to develop and passed through some stages which can be named as blockchain generations. Blockchain's generations are being discussed in the following briefly:

2.3.1 Blockchain generation 1.0: Cryptocurrency

The purpose of implementing blockchain idea or distributed ledger technology was to use digital money/ cryptocurrency for the transactions within a network setting. In early 2009, the Bitcoin formally launched as a virtual currency system identified by the network consensus protocol (Medium, 2017; Medium, 2018; Reiff, 2020).

2.3.2 Blockchain generation 2.0: Smart Contracts

Immutability is the greatest advantage of the blockchain system. Upon identifying this advantage, a new concept was developed named smart contracts- autonomous computer programs. For example, Ethereum Blockchain, which allows the implementation of Smart contacts. This smart contracts or small computer programs automatically carry out facilitation, authentication or execution of the performance of a contract which helps to minimize the cost of verification, implementation,

negotiation and avoid cheating or deception and allow the transparent contract to overcome difficulties of ethical hazards (Medium, 2017; Medium, 2018; Reiff, 2020).

2.3.3 Blockchain generation 3.0: Decentralized Application (DApps)

In the aim of avoiding the use of centralized infrastructure, Blockchain embraced Decentralized application (DApps) system which has backend code running on a decentralized P2P network unlike any traditional application running on a centralized network. This DApps allow to use decentralized storage and communication for making a blockchain more efficient, scalable and provide with better user experiences. After 2015, the use of blockchain was no more limited to financial use rather it extended to healthcare, education, supply chain, marketing, protecting intellectual properties etc. (Medium, 2017; Medium, 2018; Reiff, 2020).

The idea of blockchain will continue proliferating across counties and industries allowing the discoveries of new application and new opportunities in different sectors. The integration of IT and blockchain will open new avenues of ample opportunities and will increase the scope of it. There are few examples of some industries which have been empowered by blockchain such as health management, asset management, supply chain management, financial transactions, condition-based payment systems, IoT data collection etc. (Medium, 2017; Medium, 2018; Reiff, 2020).

2.4 Mechanism of Blockchain:

The internet or online businesses require trusted third party or financial institution to protect, authenticate and preserve transactions. But still they cannot provide 100% protection against fraudulent financial transactions which rises high transaction cost. To minimize this shortcoming and to reduce cost, Bitcoin introduce cryptocurrency and use cryptographic proof for online transactions instead of involving any third party where transactions are protected through digital signatures and use blockchain technology to link blocks of transaction information in a chronological order

containing hash of the previous block and provide temper free transaction system (Crosby et al., 2016).

There are three basic technological components of a blockchain technology which combinedly provide secure system. There are:

- Private key
- A distributed network
- Chain of blocks

2.4.1 Private key:

In the setting of blockchain system, the parties involving in the transaction online should hold two keys: public key and private key. The combination of these two keys allows parties involved to create digital signature which provides a digital identity refence using cryptography. It is a prominent component for proving and controlling ownership of the digital currency/cryptocurrency and as well as provide the security of the transaction (Reiff, 2020).

2.4.2 Distributed network:

The digital signature created through the private and public keys is then shared with the distributed network technology component. This enormous network of individuals then performs as validators to reach an unanimity about information related to that transactions. After that, a mathematical verification called “proof of work” is used to certify and secure the network. A new type of digital interaction is allowed through this combination of cryptographic keys and a distributed network (Reiff, 2020).

2.4.3 Chain of Blocks:

The information generated by digital signature forms a block which is then transmitted across a blockchain networks for validation and connects with the previous block and form a chain. This process is done to ensure the uniqueness of the transaction and avoid the chances of using cryptocurrency in multiple transactions at the same time, name as

double- spending. These chains of blocks also make the transaction or information in the network immutable and secure.

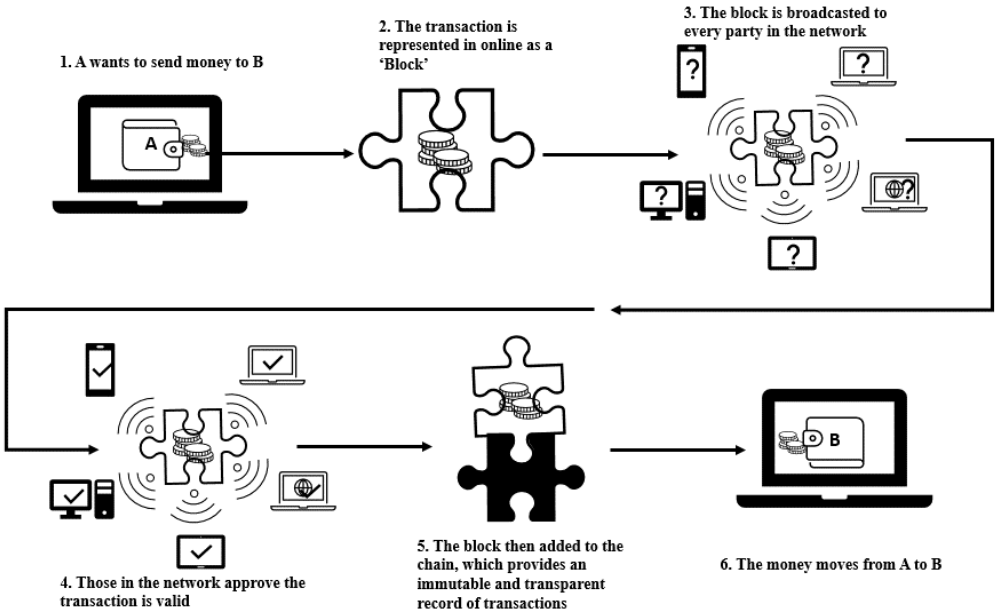

Figure 2: Financial Transactions using the Blockchain Technology (Adopted from Crosby et al., 2016)

2.5 Features of Blockchain:

Blockchain consists of various unique features which are making this technology irresistible. These are the use of a decentralised digital database, peer-to-peer transmission system, visibility to all, irreversibility, use of smart contracts etc.

The first feature is to operate around a **decentralised digital database** (also called ledger) which transmits data or records of transactions to the other users in the network. This enables all the user to receive a decentralised copy of transactions including records of all previous transactions (Risius & Spohrer, 2017). This decentralised system made the blockchain immutable because to modify or alter any information or record of any transaction, one need the verification from the peer network who have all the previous information (Basden & Cottrell, 2017) and prevents controlling of the flow of information by any user and allows all the parties to verify a

transaction directly without the intervene of a third party (Boukis, 2019; Iansiti & Lakhani, 2017; Pilkington, 2016). Therefore, all the user has equal control over the network and promotes transparency to all transactions happened within a blockchain-based network (Basden & Cottrell, 2017).

The next important feature is a **peer-to-peer transmission system.** In blockchain network transaction between two parties happen directly with the intervention of any intermediary which is opposite of traditional online transaction that happens through a third party, (e.g., credit card provider, Visa, Mastercard etc.) and transactions are validated by them (Boukis & Magrizos, 2018; Hawlitschek, Notheisen & Teubner 2018; Iansiti & Lakhani, 2017). But the mechanism of blockchain eliminated the need of the third party for authentication and validation and treated as a 'trust machine' in the peer-to-peer transaction (Economist, 2015 via Boukis, 2019).

Blockchain also ensures **transaction efficiency** with is another important feature of it. As blockchain ensures the data integrity and provides with a trusted network for transactions, it makes the transaction between the parties easier and quicker and also eliminates the transaction cost associated with it (Kosba et al, 2016; Tapscott & Tapscott, 2017).

Blockchain enables **transparency and visibility** in the networks. Any information shared in the network is visible to all who have a unique user identity for initiating transactions in the network (Iansiti & Lakhani, 2017).

Another characteristic is the **anonymity**. The personal information about the users in the network remain anonymous and they use their unique identity code to make and validate any transaction occur in the network. Thus, blockchain can be used to store a massive amount of anonymous customer data, allow anybody to see or use the data without altering and also preserve the anonymity of the users and hereby provide more value to their customers (Lee & Pilkington, 2017 via Boukis, 2019).

One of the most appealing features of blockchain is the **immutability or irreversibility** of the records of the transaction. Once a transaction is recorded and validate and added to the blocks, it cannot be modified or changed because they are

connected to the other blocks in the chain (Crosby et al., 2016). Therefore, blockchain data remain consistent, time-stamped, and accurate (Boukis, 2019).

These are not the only features of blockchain rather the new applications of blockchain is widening and the features are expanding and evolving accordingly (Pilkington, 2016; Seebacher & Schüritz, 2017). For example, the **smart contracts** of blockchain enable agreement and transactions to execute anonymously just by fulfilling some predetermined conditions of the agreement (Crosby et al., 2016; Kosba et al., 2016).

2.6 Application of Blockchain technology

According to Reiff (2020), the common application of blockchain technology of storing data about the monetary transaction has been expanded to storing data about any transaction which is opening the wide use of this technology in other fields as well. In the following some of the use of blockchain in other fields are being discussed:

2.6.1 Banks and other financial industry

There is no doubt that certain characteristics of blockchain technology such as transparency and immutability have been proved to be very beneficial for the financial sector including banks to provide a secure system for handling data about transactions. Blockchain technology enables the bank to transfer money quickly and safely which is helping them to gain customer trust and satisfaction (Reiff, 2020).

2.6.2 Health industry

Health care industry can leverage blockchain for securing the personal information and medical records of their patient which can help to gain the trust and increase the reliability. Private keys can be used for encoding and storing data on the blockchain which will allow limited access for ensuring the privacy of the data and data can only be accessible to specific individuals (Reiff, 2020).

2.6.3 Real estate and property records

Generally, the documentation and registration of a property are a very time-consuming, complex, and inefficient process. It needs to pass different protocols and rules and legislation. Firstly, a physical deed should be delivered to local government representatives and then it should be included in the Central database and public index manually. These processes are very costly and troublesome which can be made more efficient with the use of blockchain technology. Blockchain can be used to scan and track documents registered in the local register office very quickly and securely. The transactions and transfer of ownership can be done accurately through the verification system of the blockchain (Reiff, 2020).

2.6.4 Usage in smart contracts

The smart contract refers to computer code associated with blockchain use to facilitate, validate, verify, and negotiate a contract agreement under a pre-defined set of conditions determined by the user agreements. The terms of the agreement are automatically carried out upon meeting the conditions correctly (Reiff, 2020).

2.6.5 Usage in supply chain

Forbes reported that the food industry can assure food safety using blockchain technology in the supply chain to track the journey of the product they purchased. Blockchain allowed the users of that supply chain as well as the customers to verify and authenticate products with a special label like Organic, Local or Fairtrade (Reiff, 2020).

2.6.6 Governmental use:

The government can use blockchain technology to bring fairness and transparency in the voting system. The single vote can be saved as a block in the blockchain which is immutable and tamper-free and will ensure transparency of the electoral process as well as ill increase efficiency and cost by reducing the number of personnel need to carry out, supervise and monitor the election process and it will also provide the voting

result in promptly. For example, the midterm elections in West Virginia used blockchain in their voting system in 2018 and was able to ensure reliable election by eliminating fraudulency and boost voter turnout (Reiff, 2020).

2.7 Advantages of Blockchain

Because of the complex nature of blockchain, the potentiality of this decentralised record-keeping system is limitless ranging from heightened security and privacy to reducing processing fees and errors. The important advantages of blockchain in the present marketing are being discussed as follows:

2.7.1 Accuracy of the Chain

The concept of blockchain is built on a network system approved by the thousands of users and computers of that network which eliminates human intervention in the process of verification, validation of information and transaction and increase efficiency through accuracy (Reiff, 2020).

2.7.2 Reduction of cost

As there is no central authority or third party needs to validate and verify a transaction in the blockchain network, it eliminates all the associated cost in the verification process and speed up the process and thus save time and resources (Reiff, 2020).

2.7.3 Decentralization

There is no central information reservoir in the blockchain. The mechanism of blockchain is that it copies a piece of information and transferred it across a network of computers. This characteristics of blockchain enable it to become tamper-proof and immutable and make it impossible to hack information by the hacker (Reiff, 2020).

2.7.4 Efficient Transactions

The characteristics of blockchain technology made the cross-border transaction very secure and efficient. Whereas tradition transaction system takes up to many days to complete a transaction as it requires all the parties to confirm the payment and also there is time-zone problem associated with it, blockchain technology requires maximum 10 minutes to settle a transaction with accuracy and security and thus facilitating global trades (Reiff, 2020).

2.7.5 Private Transactions

Most blockchains use a public network to operate and in this network, anybody can download the protocol and use it for validating transactions. It also allows them to access details about transactions but limit the access for finding out identification of the user making those transactions. This network is confidential, and users need a public key rather than their personal information to use the network and that is why the hacker cannot get the user information from a blockchain network. So, it makes private transactions secure and reliable (Reiff, 2020).

2.7.6 Secure Transactions

For a transaction to be added to the blockchain in the form of a block, a transaction recorded in the network must be verified by the blockchain network. Only after the validation, the information gets a place in the blockchain system. The mechanism of blockchain requires to include a block in the system by using a hash sign including the hash sign of the previous blocks with makes it immutable as it is quite impossible to change the information without notice and the users need to know all the hash sign of the previous blocks to change the information which is extremely difficult and challenging (Reiff, 2020).

2.7.7 Transparency

Though blockchain enables to keep personal data conceal, the technology operates in an open network system which enables the users to modify and see information entered

in the network. This open networking system makes it quite impossible to tamper data and provide transparency about the authenticity of the information provided in the network (Reiff, 2020).

2.8 Disadvantages of Blockchain

There are some potential disadvantages as well for blockchain which might discourage the adoption and implementation of blockchain technology by the organizations. The technological knowledge and cost, political and regulatory complexity, ethical concerns, hacks susceptibility can be the main barriers for implementation and utilisation of blockchain technology. These are being discussed below:

2.8.1 Technology cost

Though blockchain can help in saving money by deducting transaction fees, the technology requires a vast amount of investment and computational power which everybody cannot avail. A recent study of Elite Fixures showed that a single bitcoin system can costs from $531 to about $27000 which is undoubtedly a huge sum of money. And only installation cost is not enough, it also constantly needs a power supply to connect all the computers in the network and thus adds a great extent of energy cost to the cost list (Reiff, 2020).

2.8.2 Inefficiency

A blockchain network can process only 7 transactions per second as it requires ten minutes to add a new block to the blockchain as a part of ‘proof work’ whereas other cryptocurrencies like Ethereum can process about 20 transactions per second and thus work better than blockchain (Reiff, 2020).

2.8.3 Illegal Activity

Blockchain is being used to protect users from hacks and at the same time allows the user for illegal trading activity without being tracked (Reiff, 2020).

2.8.4 Hack Susceptibility

Blockchain and other cryptocurrencies network can be susceptible to 51% hacking attacks to get control over those networks to steal the digital currencies. Though it was though before that blockchain cannot be hacked but if a hacker gets to rent computing power rather than buying all computing equipment, it can be possible to hack the blockchain system as well (Reiff, 2020).

2.9 Potential contribution of Blockchain technology in marketing

Blockchain has a huge potentiality in the business world and has implications not only in the financial sector but also in marketing and advertising which is still being untapped. The idea and the concept of blockchain are still not widely known to all the people and thus not aware of its potentiality in revolutionized in all the sectors. According to Harvey, Moorman and Toledo (2018), the poor knowledge about the implications of blockchain in marketing creates a natural barrier and marketers are playing safe and following 'wait and see' approach. But there are still some early adopters who are ready to adopt this technology and get the most out of it. The transparency, immutability, and secure characteristics of blockchain technology has compelled the organization to apply it in their supply chain management, managing smart contracts, financial reporting, storing and securing private and confidential data etc and made these process more reliable and trustworthy. Blockchain's primary use is in securing transaction enabled minimization of transaction cost, increased efficiency in verification and transfer of ownership process and also enabled real-time micro-payments and on the other hand, diminished the payment frictions, removed intermediaries and third party and gave more control to the consumers in protecting and sharing their data (Harvey et al, 2018). There are some examples of the contribution of blockchain in marketing as follows:

2.9.1 Reducing transaction cost to nearly zero:

There are considerable costs associated in different activities like paying about 3% payment processing fees to credit card companies by retailers and gas stations, listing and sales fees provided by vendors like eBay and Shopify, transactions fee-paying by consumers in payment portal like PayPal etc. These costs are ultimately paid by the consumers through increased cost of products and services purchased by them. These costs discourage the consumers to buy more and sometimes annoy them which can affect the manufactures or the retailers. But blockchain has a potentiality to minimise these costs to nearly zero by eliminating all the third party associated with the payment process and thus when consumers need to pay less, they feel more satisfied and become

loyal to that company which can provide them quality goods in less price. As blockchain provides additional layers of security and transparency, people can send and transfer money in any local currency via Mastercard and Visa platform just by swiping a credit card and allows to avoid extra fees in cross-border transactions as well (Harvey et al., 2018).

Marketers and advertisers can also make the best use of this technology in information gathering without paying a considerable amount of money to the third party like Facebook for behavioural and demographic data about existing and potential customers to promote their products and services. The security layer and the controlling power to control and secure own data provided by blockchain technology removes the susceptibility concerns and motivates consumers to share their data over the blockchain platform with the marketers which make them closer to the marketers and strengthen the relationship with them by an uplifting trust. Harvey et al (2018) shared an example of a grocery store where retailers can pay $1 to download and install their mobile application and can pay extra $1 for sharing extra information like location data. And they can continue paying few cents every time the consumer use their application for browsing their products or for ordering and purchasing which will motivate the customer to use that application more and retailers can use of push advertising during that time when the user is using the application and as well can get data about their behaviour and purchasing patterns which will help them to cater customized offers and improve loyalty programs to keep the customers with them. The retailers and marketers can offer special price offer and use user-tailor approach to seek the attention of the customers based on the customer's profile by reducing potential fraud and inaccurate and incomplete information. Marketers can also make the best use of the 'smart contracts' feature of blockchain to activate and authenticate subscription of the users in email newsletters or in a reward program (Harvey et al., 2018).

2.9.2 Eliminating the duopoly of Google-Facebook Advertising

According to a research study of HubSpot in 2016, the majority of internet users do not like and get annoyed by pop-up advertisement and treat online advertisement as intrusive and disruptive and most often they install ad-blockers to avoid such pop-ups

and online advertising which can cost marketers around 35$ billion by 2020. But blockchain technology can contribute a lot to save this cost of the marketing by removing the layers of Facebook and Google advertising and paying little amount directly to potential consumers for their attention. This model will encourage the consumers to pay attention to blockchain-enabled advertising as they will have an opportunity to earn as well as to control their profiles and social graphs which may increase the potentiality of grabbing their interest for that product or service and eventually turn them to customers. Harvey et al (2018) argued that marketing possibilities will reach its height when companies will be able to transfer monetary reward or value to consumers via 'willingly-consumed' advertising enabled through blockchain technology. This technology will also allow marketers to monitor and verify the delivery of advertisement and customer engagement with it, increasing the rate of click in email advertising and the extra spending in promotional activities (Harvey et al., 2018).

2.9.3 Obliteration of Marketing fraud and spam

Blockchain can help marketers to verify the origin and methodology of marketers via fraud verification. Currently, about 135 billion spam email are sent to consumers which accounts for 48% of the total email sent every day (Harvey et al, 2018) and spammers get only 1 reply for every 12.5 million emails sent which is not a very fruitful way of marketing and proved to be a very costly effort. A blockchain-enabled payment system to the receiver may pay back more to this marketing efforts. A rewarding system, for example, one or a few cents for clicking the advertisement will encourage and engage more consumers to click on those emails and convey the message to them about the offering. This type of micropayment system can extensively reduce the cyberattacks targeting for making a website get jammed and perform poorly. The blockchain technology can provide with the facility to fight against bots in setting up fake social media profiles and deceptive messages to dupe the big brands by enabling tracking and controlling the advertisements. Thus, they can ensure that their advertising expenses are generating revenue (Harvey et al., 2018).

2.9.4 Reconstructing Media Consumption

Nowadays stealing the online content is a prevailing problem which is draining out the effort of the creators and creating the loss of ownership and monetary benefits. If an editorial content uses the blockchain technology, they can protect their copyrights and can automatically receive payments for the content being used and can enhance quality control. This will facilitate the online content creators to create more content independently and will empower them with the controlling power for their work. The marketer will get more visibility and transparency about the acceptance of their offering and can easily get information about their target group and help to select the best-suited market segment and can initiate strategies based on that (Harvey et al., 2018).

The power of blockchain technology is expected to make some social changes and make it more trustworthy and empowered through increasing visibility, increasing interconnectivity, and developing a rewarding system for the contributors to a successful transaction. These changes will greatly influence marketing activities. Markets will need to prepare themselves and transform and reform the infrastructure and operational activities fit to blockchain-based infrastructure. It involves strategic, financial, operational, technical, technological changes and adaptation. It is believed that blockchain technology had that potentiality to build a best and strong position for the markets in the competitive market (Harvey et al., 2018).

2.9.5 Verification of online advertisement

The blockchain is transparent and encrypted and allows the marketer to detect and monitor the location of their advertisement placed. They can also monitor the audience of the advertising and determine whether the advertisement reached to the correct audience or not and take measures based on that information. This mechanism increases the efficiency and effectiveness of promotional activities and provides a clear picture of potential customers, example, BitTeaser, adChain etc. (Tan, 2019).

2.9.6 GDPR Compliance

The combination of blockchain technology and crowdsourcing is encouraging customers in sharing information in return for some rewards. Blockchain technology provides with the customer-centricity and benefits both the customer and the marketer in the data collection process because customers are more willing to share data as blockchain enables them to get compensation and safety for their data and on the other hand, marketers can obtain authentic and highly reliable and relevant data. For example, Dataeum (Tan, 2019).

2.9.7 Direct media

The blockchain-enabled advertising system offers the advertiser to verify a genuine user and get genuine clicks for their advertisement. It also helps them to pay those genuine users for their clicks and interest in the advertisement. This reduces the uncertainty and confirms that the advertisement is being received by the right audience and increase the conversion rate as well as the retention rate of the customers. Based on the data shared by the customer which are more reliable enables the marketer and advertisers to make customer profile and act upon it (Tan, 2019).

2.9.8 Enhance Customer Experience

The most important benefits of a blockchain-enabled system are transparency. When blockchain is implemented in the supply chain it is providing with the information of the whole stages it passes through. Thus, a customer can check all the information, for example, raw materials, the origin of the product, where it was produced, how it was transported, when it was manufactured and when it ultimately reached to the retailers. This transparency can eliminate all the concern related to the product and they can check if the product is truly organic or fairly traded of not as labelled. It will improve experiences and will increase their trust for the retail or manufacturing organization. This trust and the rewarding system will motivate them, to share more information about them to the retailers and marketers. Example: VeChain; Gift card: Gyft, Centz and Orion Coin (Tan, 2019).

3 VALUE ADDITION OF BLOCKCHAIN TECHNOLOGY IN RETAIL BRANDING

This chapter introduces the readers with the concepts of brand and branding, brand image and brand equity to lay a foundation for retail branding and shed light on implications of blockchain technology in retail supply chain and retail brand management including discussion on the current scenario of blockchain usage in the retail industry.

3.1 Brand and branding

According to Wikipedia (2010), Brand is a sign, symbol, name, term, design which is used to identify a seller's product and services and further distinguish it from the others operating in the market. And branding is simply the activities for building a brand. Sammut-Bonnici (2015) postulated that a brand can be described as a set of tangible and intangible elements and attributes which is designed for creating awareness and building a unique identity. A brand represents the reputation of a product, service, person, place, or organization.

According to Aaker (1991), Brand is the image that a consumer holds in their mind for a specific firm and their products and services. The brand also consists of some unique attributes and features which help an organization to differentiate their product than that of competitors (Murphy, 1990). Moreover, The American Association(AA) identifies a brand as "a name, term, sign, symbol or design, or a combination of them intended to identify the goods or services of one seller or group of sellers and to differentiate them from those of competitors".

De Chernatony and McDonald (1992) describe a brand as "an identifiable product, service, person or place, augmented in such a way that the buyer or user perceives relevant, unique added values which match their needs most closely". There have been two basic values recognized by de Chernatony (1999) that add value towards the brand premium. One is the functional value and the other is emotional value. The functional value consists of price, technology, design, and store layout. An emotional value stemmed from perceptions like advertising, internal branding, transforming the retail

brand into consumer taste, and at the same time the shopping experience itself at the retail store.

Thus, A brand is a product or services which includes elements that differentiate itself from the other product and services available in the market designed and produces for fulfilling the similar types of needs. The differentiation can be done from a functional, rational, emotional perspective for which the brand represents itself. However, the concept of the brand should address a customer need and wants and should be compatible with a customer lifestyle and interests.

A wide set of activities starting from product innovation to marketing communication altogether forms a holistic branding strategy for long term for helping organization sustain in the market. The core idea behind developing a branding strategy is to establish a brand that is different and distinct from other players in the competitive marketplace.

An interdependent framework of competitive brand positioning, value chain development and brand equity management altogether form an effective branding strategy. Competitive brand positioning is depending on the brand's distinctive features perceived by the consumers. An effective brand positioning guides the strategy developers to identify its unique selling point, how it is different and how it is similar with the competitive brand and value determination derived from the brand and build a strategy for developing and capturing the market. Pricing strategy, distribution strategy, and marketing communications forms market development strategy. Marketing Communications are intended to generate a consumer mindset where brand awareness, associations, and attitudes are formed. The visual components of market development consist of brand names, logos, advertising, and product packaging. Major competitors in the food manufacturing industry include Nestlé, PepsiCo, Unilever, and Kraft who are striving for improving their product offering through giving special attention to the freshness of the product, health, nutrition, and cost considerations (Sammut-Bonnici, 2015). Brand perception, brand characteristics, brand image and brand equity are the factors that affect the overall idea of a brand.

3.2 Brand Image

A brand is a symbol, sign or something that distinguish a seller's product or service from other sellers operating in the market. And the brand image is the perception of that brand in the mind of the customer. It can be a unique bundle of association that customer holds in their mind which develops over time through interactions and experiences with the brand. Brand image can be treated as an organization's character which conveys subjective value as well as emotional value.

According to Juneja (2020), Brand image is the overall impression formed in the consumer's mind from different sources of association related to that brand.

For Example, Volvo is associated with safety whereas Toyota is associated with reliability. This association formed over time through the various encounter with the brand. The concept of brand image is that consumer is not only buying the products or services, they are also buying the image associated with it (Juneja, 2020).

According to Keller (1993) via Anwar et al (2011), a brand image can be referred to brand association and observation around a brand that held in a consumer's memory. Brand image is how a consumer sees or perceive a brand and what comes to their mind when they heard or see some associations of that brand.

Kotler (1988) via Meenaghan (1995) postulated that brand image can be considered as a set of beliefs towards a brand and it has a high impact on consumer behaviour. Roberts (2004, 2006) via Cho (2011) presented three dimensions of the brand image including Mystery, Sensuality and Intimacy which represent the rational, sensual, and poignant dimension of brand image.

Brand image has an undeviating influence on brand equity. Brand equity is the total value of the brand which is determined by the consumer's perception. Companies always thrive for positive brand equity as it provided them with the benefit of asking premium or higher price for their product. According to Hayes (2019), "Brand equity is a value premium that a company generates from a product with a recognizable product when compared to a generic equivalent".

3.3 Brand equity

In today's highly competitive market, Brand equity management is becoming a crucial component of corporate strategy. Sammut-Bonnici (2015) defined Brand equity as "the set of assets and liabilities associated with a brand, such as the positive image of Coca Cola in terms of a recreational beverage, or its negative image in terms of health and the consumption of sugar" Brand equity is the added value which has been endowed to products and services. Aaker (1991) characterized the brand equity as "a set of brands assets and liabilities linked to a brand that adds or detracts the product or service value based on the customers' perspectives. This value may be reflected in how consumers think, feel and act concerning the brand that consumers had to perceive from marketing programs". Brand equity is consisting of psychological and financial value to the firm which depends on the number of people buy regularly from the same brand (Aaker, 1996) has proven to be a core intangible property for any organization. For maintaining higher brand equity, companies should focus on brand loyalty, brand awareness and brand perceived quality (Motameni & Shahrokhi, 1998). Farquhar et al (1991) represented that there are two perspectives of brand equity consisting financial brand equity and customer-based brand equity. Financial brand equity measures the value of the brand name created to the business (Farquhar et al, 1991) which increases the discounted future cash flows and revenue comparing to the same product without a brand name (Motameni & Shahrkhi, 1998). Whereas, customer-based brand equity depends on the responses of the customers and how they see, read, hear, learn, think, and feel about a brand over a period. The strength of a brand depends on the perception of the brand by existing and potential customers including their experienced directly and indirectly about the brand. The customer-based brand equity transforms into the financial return to the company ultimately (Lassar et al, 1995). According to the valuation based on consumer factors, "the measurement of customers' preference and attitude can be used to evaluate the brand equity" (Aaker, 1991 & Kapferer, 1992).

3.4 Relationship of brand image and brand equity

In this competitive era, companies are progressively attempting to create favourable and strong consumer-based brand equity. Brand image positively influences different factors of brand equity and thus have a positive relationship with brand equity.

Different scholars and different researchers have provided the different model of brand equity. Among all those models, the "iceberg brand equity model" provides a clear picture of elements which are visible, and which are invisible to the consumer. The visible (short term) elements have a great impact on the invisible element (long term) which formed the brand asset.

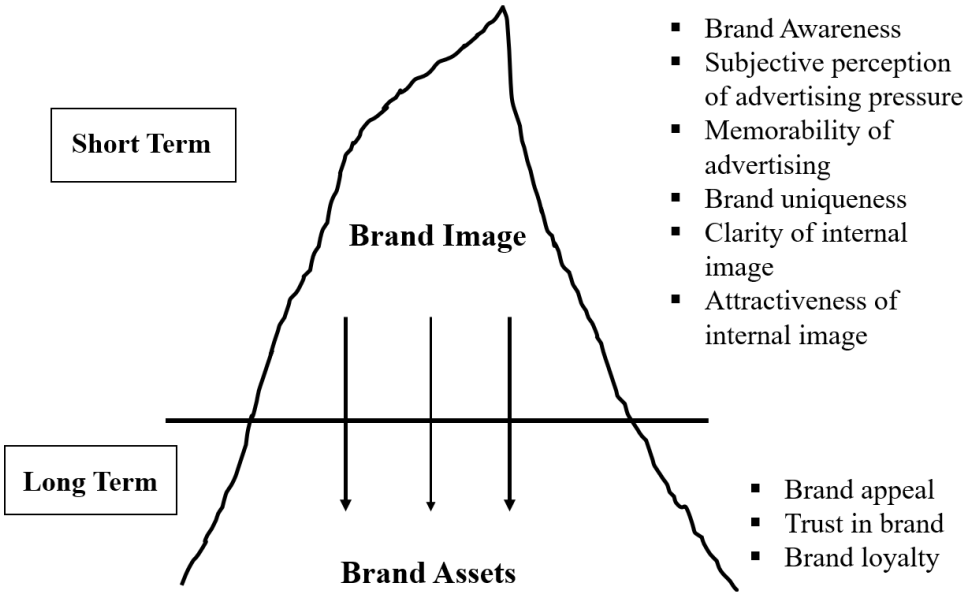

Figure 3 : Iceberg Brand equity model by Zimmermann et al., (2001), stated in Bivainiene & Sliburyte, (2008) and adapted from Malki (2015)

From this above figure, it is clear that brand image is formed by a different element like brand awareness, perception generated from advertising, uniqueness of the brand, clarity of the image, attractiveness of the brand etc. which influence the long term achievement of the company they are operating for and that is a brand asset. Brand asset/equity can be generated through strong brand appeal, trust towards the brand and brand loyalty. Brand equity represents the success of a brand and determines the survival in the market of that brand. According to Zimmermann et al (2001) via Bivainiene and Silburyte (2008), brand equity can only be achieved through successfully developing a brand image. Therefore, the importance of brand image in achieving brand equity is very prominent.

3.5 Retailers as brands

Nowadays, the concept of the brand is applied to all type's product and services while before it was usually associated with the manufacturer only. Retail branding is the use of the branding concept and strategies used for retail businesses. According to Tanase (2011), a retail brand is a group of retailer's outlets carrying a unique name, symbol, logo etc. and to build a strong retail brand, the most important element is consumer's recognition and appreciation towards the brand. A strong retail brand can provide with several benefits as follows:

- Strong brand image can serve as a cornerstone for association related to the brand and can provide a competitive advantage.

- A strong retail brand image simplifies the process of purchasing and saves time and energy of the consumers.

- A strong brand provides not only a functional benefit but also an emotional and symbolic benefit.

- It allows the diversification of products and services and helps in avoiding cannibalisation of brand image.

3.6 Proposition for building a Successful Retail branding

Tanase (2011) has proposed some proposition for developing a successful and strong brand. They are presented as follows:

- **Differentiation** in product and services as well as in marketing strategy from competitors. The uniqueness of a brand is easy to remember by the consumers and can help to build strong loyalty towards the brand and provide with high profitability to the retailers.

- A clear brand image requires time and develops and reinforced through repeated exposure to the brand association. Thus, **continuity** in the forming the brand associations is very crucial.

- The **coherence** between all the facets and retail marketing mix is very important for providing a clear and consistent message to the consumer which consumer will remember. The retail environment is much more complex and ensuring a fit among the marketing instruments and all brand contact point is a challenging task which successful brands like IKEA, The Body Shop, Zara are doing. They are projecting a uniform message with their store atmosphere, merchandise, pricing, communication, and service throughout their all outlets across the globe.

Davis (1992) via El-Amir (2004) proposed ways for managing brands and increasing the brand image. He argued that there should be four characteristics for a product or services to be applicable as a brand. These are **differentiation, ability to ask premium price, the separate existence and psychic value**. He also added that retail brands can be excluded from asking premium price as it may be contradictory in this regard. Furthermore, Wileman and Jary (1997) via El-Amir (2004) provided strategies for increasing brand image and better brand management including investing in and properly managing the supply chain, mass marketing and developing a direct relationship with the customers.

From both above propositions, it is clear that differentiation in products and services, and a strong supply chain management can greatly contribute to building a strong brand image of a retail chain.

3.7 Factors effecting consumer's grocery store choice

From a study on Finnish consumers by Laine (2014), identified loyalty programs, store features and in-store advertising induce the consumer greatly to build positive or negative perception about a grocery store.

3.7.1 Loyalty Programs

The most important factor for the Finnish consumer is loyalty programs. Loyalty programs refers to an integrated system for building personalised relationship with the customer through customised marketing actions to stimulate their purchasing behaviour and increase loyalty. SOK and Kesko acquire the highest market share and provide discounts and promotional offers through their loyalty cards S-Etukortti and Plussa-Kortti. These loyalty cards may have a great influence for the consumer to choose a grocery store. The retail loyalty programs in Europe allow consumers to get discounts in their shopping which stimulate them to buy from those stores.

3.7.2 Store features and in-store advertising

There are several criteria for choosing a store in a general level. Wahl (1992) via Laine (2014) presented that

- cleanliness of the environment,
- price labels,
- accurate information related to date,
- product availability,
- convenience of the store are the major criteria for choosing a store.

There are other factors which become prominent in this digitalization era in store choice are: the authenticity of the products, fair trade, sustainability, full access to information related to the products etc.

3.8 Implication of blockchain technology in retail supply chain management

Supply chain management plays a crucial part in preserving the brand image for retail businesses (Wileman and Jary, 1997 via El-Amir, 2004) and thus it is very important and relevant to study the implication of blockchain technology in retail supply chain management for ensuring smooth operation and product availability in the store.

According to Wikipedia (2020), Supply chain management is the management of the flow of goods and services from point of origin to the point of consumption. This process includes the movement and storage of raw materials and finished goods through the supply chain and involving multiple parties. This digital era made consumers more knowledgeable and conscious and thus they are now more interested about information related to the products and services, for example, where the raw materials were produced and how it was procured, when it was procured, how the product was manufactured and when, where it was stored, how it was transported, the environmental impact of the product, fairness in the trade, who are the suppliers and producer, what are the ingredients etc. These questions arise the need for transparency in the foundation of logistics.

Blockchain as an optimized system of a shared database can be an incredible way to upgrade the complex supply chain management through the use of distributive leger, a core function of blockchain. Blockchain enables store of data and information regarding products, people events and can be accessed by multiple users. This technology can empower a supply chain with the ability to reduce errors, avoiding product delays, eliminating fraudulent activities, improving management, and increasing customer trust (Medium, 2018). In the following page, there is a blockchain-enabled supply chain for dry-aged beef which picturise all the stages it passes through for reaching to the customer and how blockchain is contributing in engaging customers with the brand by providing authentic information about their products.

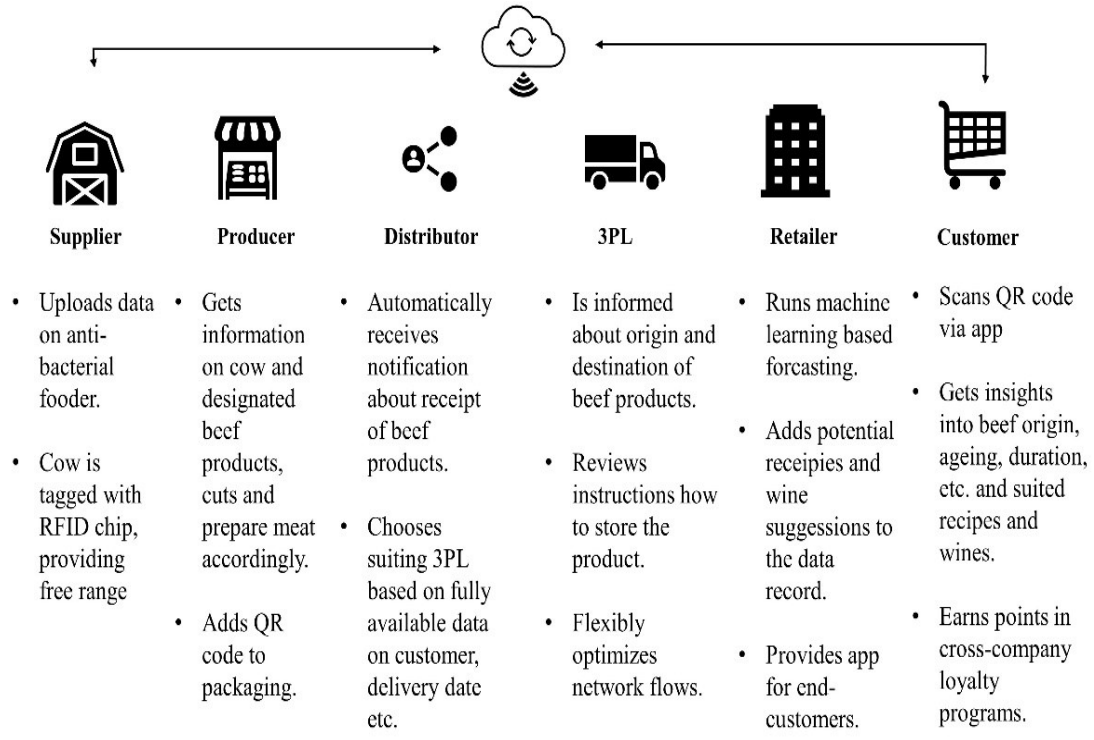

Figure 4: A dry-aged beef supply chain (Source: Medium, 2018)

Blockchain features enable consumers to track the process of reaching the products and services from the suppliers to the retailer's store, ingredients used, transportation used, potential health and environmental risk, delivery time etc. through simply scanning a code beforehand the buying decision. Furthermore, blockchain technology enables scalability, independence, transparency and enables bilateral settlement through minimizing cost and credit risks (Medium,2018).

3.9 Contribution of blockchain technology in retail brand management

The advent of blockchain technology has unleashed numerous opportunities in the retail sector. This disruptive technology has transformed the way selling and purchasing by retailer and consumer, respectively. The most salient roles played by the blockchain technology is in reshaping the retail relationship with the consumers is through the seamless supply chain, automated and integrated inventory management, secure payment processing, protecting personal data of the consumers, personalize loyalty programs and constantly thriving for improving customer experiences. Though the blockchain concept is still not widely common and accepted by all sectors, it is believed that it will revolutionize the business world by 2025. The application of blockchain in the retail industry has the power to improve its operational efficiency from 40% to 60% (Pitti, 2018).

Customer experience is an integral part of enhancing the image of the retail brand. The retailer should have a sense of commitment to understand their customer better by delivering detailed information about the product and services and guide their purchasing decision. Empowering customers through information access and control over their data shared with the retailers which are a feature of blockchain technology can be a great appealing factor for the consumers which will provide the retailers with the competitive advantage in the market. Blockchain can also play a major role in making marketing and sales plan for tapping persuadable customer experience by engaging customers. Blockchain can also be adapting for redefining customer experience by emphasizing on the area where the customer interacts with the product and services. There are some benefits for the retail industry as following:

3.9.1 Efficient inventory management

Managing the inventory system and ensure product availability on time is a challenging task for the retailers. A brand image can be hampered if the consumer does not get the product they want to buy, and it can make them switch to other retailers. And thus, ensuring efficient and effective inventory management is a crucial job for the retail brands. The implementation of blockchain can be proved to help them solve this issue as all the information of the supply chain can be monitored in real-time and

can take actions for that. With the traceability, the inventory management will be smooth and easier and will also help them to preserve and retain their brand image by making sure the availability of the products in the store (Takyar, 2020).

3.9.2 Detecting theft

FBI reported that the cargo theft causes a loss of $30 billion per year. Blockchain can help detection of any theft through storing the data about their products and consistent monitoring on the supply chain by implementing IoT sensors which can generate the data in each step of the retail supply chain (Takyar, 2020).

3.9.3 Verification

Usually retailer charge premium price for organic or green products, but consumer have the suspicion of greenwashing and concern about the authenticity of the product as real. If a retail brand cannot remove this suspicion and prove evidence of the originality of the product, it can adversely harm their brand image in the long run. Thus, the verification system through deploying blockchain technology enables retailer to restore confidence about their purchase and increase trust for the brand and strengthen the relationship with the retailers through empowering them with traceability of a products journey story (Takyar, 2020).

3.9.4 Improve customer loyalty programs and reward

A blockchain-based application can enable retailers to better design the loyalty program for the customers and enables the customers to redeem points across multiple channels and platforms. It helps brand to improve customer experience through reducing liabilities and enhancing customer satisfaction. It also enables the retailers to save the operating costs and reduces the chances of fraudulent activities (Takyar, 2020).

3.10 Current scenario of Blockchain uses in retail

The traditional supply chain used in retail can be an extensive, slow, and inflexible process varied by-products and can be susceptible to fraudulent activities. The implementation of blockchain technology can solve many problems related to a conventional supply chain such as transparency, efficiency, speed etc. Through the adoption of blockchain, companies can gather real-time information about their product, transactions details and information about the movement of the products throughout the supply chain. More and more organizations are now implementing supply chain in their system. For example, Galpargo, a Spanish Olive grove pioneer, has implemented blockchain technology for recording all the phase of olive oil production and distribution. The retail industry can adopt incorporating blockchain into its system through a customer-focused approach. Through leveraging the power of blockchain technology, retailers would be able to provide the consumers with a transparent and traceable manufacturing and supply process and can retain their trust and could build a strong relationship and loyalty.

Retailers can avail some other benefits such as optimizing supply chain's efficiency, reducing food waste, ensuring authentic and fresh food, transparency for the origin of the products, trust, and prompt distribution process.

Upon realizing the boundless potentiality and opportunity of blockchain technology in the retail industry and for retail branding, the retail giants like, Walmart, Amazon, Carrefour, Auchan, Albert Heijin are adopting and incorporating blockchain technology in their business activities, especially in the supply chain to ensure transparency and authenticity as well as to achieve consumers' trust.

3.10.1 Amazon

Amazon is taking advantage of blockchain technology through the installation of fully managed blockchain. Amazon Managed Blockchain is a fully managed service that enabled it to create and manage scalable blockchain networks. They are using open source blockchain framework like Hyperledger Fabric and Ethereum. In the Amazon Blockchain, parties do not need any third-party authority for executing any transaction.

Amazon has implemented the blockchain technology for amazon trading and asset transfer and for managing their retail activities and supply chain. Retailers often thrive for improving customer loyalty programs through partnering with other retailers and the processing of rewards take around a week. But the implementation of technology-enabled the retailers and Amazon to reduce this time frame and allows to share and validate rewards information quickly and transparently without the involvement of intermediaries. Amazon managed blockchain ensure better management of the supply chain, provide transparency, enable real-time recording and tracking of goods from the point of manufacturing to the point of consumption (Amazon, 2020).

3.10.2 Walmart

Walmart is a multinational supermarket brand which is operating in about 27 countries. Walmart started implementing blockchain through collaboration with IBM from October 2016 for tracking the meat from China, tracking delivery drones, patenting small deliveries, and tracking live food in the USA. Walmart has collaborated with IBM and implemented IBM Food trust solution into its supply chain for ensuring the safety of the products they sell and reinforce consumers' confidence in their purchases. In addition to that, Walmart recently announced its collaboration with Food and Drug admiration in conjunction with IBM, MERCK, KPMG for identifying and tracking the prescription of drugs. During summer 2018, Walmart along with other big companies including Nestlé SA, Dole Food Co., Driscoll's Inc., Golden State Foods, Kroger Co. and Unilever NV get involved in a partnership and collaboration with IBM in the aim of devising a brand-new Blockchain ecosystem for tracking their food suppliers globally through a unified decentralised platform named, Food Trust Blockchain and commenced by tracking the whole distribution process of pork and mango suppliers in China and the US. The purpose of Walmart is to deliver high quality and reasonably priced fresh products to nearly 270 million of its weekly customers (Willemse, 2019).

The senior director of Walmart technology, Karl Bedwell stated that,

> "*Creating a (traceability) system for the entire food supply ecosystem has been a challenge for years, and no one had figured it out. We thought that blockchain technology might be a good fit for this problem, because of its focus on trust, immutability, and transparency."*

3.10.3 Carrefour

Carrefour which is Europe's largest food retailer is applying blockchain technology to track eggs, chicken, and tomatoes as they move from farms to the supermarket shelves. Blockchain technology is a crucial feature in Carrefour's 2022 transformation plan which will play a significant role in their intention to develop their fresh food market in France. Through improving the product's traceability, they are aiming at their business with an additional one million customers in their fresh food market. Carrefour has already initiated blockchain for tracking the farm-to-fork process for its free-range Carrefour Quality Line Auvergne chickens. Furthermore, it will be implemented to eight more animal and vegetable product lines, such as eggs, cheese, milk, oranges, tomatoes, salmon, and ground beef steak. Through an innovative system backed by blockchain technology which is designed to guarantee consumers complete product traceability and aims at proving truth via distributed and shared, immutable and veracity by design system; ensuring touch by enhancing in-store digital experiences, enabling and extending customer's choice to use and enhancing trust through providing quality lines of food, offering retailer's own product, building a community around the product and increasing engagement and claiming beyond labels (Delerm, 2020).

3.10.4 Auchan

Auchan is the worlds 17th largest retailer in the world with headquarter in France. They have collaborated with blockchain-based TE-Food, Taiwan based the largest network running food-to-table traceability program, for ensuring food traceability. They have developed a mobile app, FoodChain, enabling consumers to view the whole journey of the product from the manufacturing plant to the destination point through scanning a QR code (Willemse, 2019).

3.10.5 Albert Heijn

Ahold Delhaize, a food retailer group in Denmark, initiated a project for their brand Albert Heijn where customers are allowed to trace can trace the complete supply chain of their orange juice by scanning the QR code on the orange juice packaging and letting them check the full journey of the orange juice ranging from the orange grown in the Brazilian Rainforest to the shelve in the customer's local supermarket (Willemse, 2019).

Albert Heijn's commercial director Marit van Egmond said:

> *"Every day we provide millions of customers with delicious food and drinks. We want to make an active contribution to issues that are important to our customers. Transparency in the chain is becoming increasingly important. We know all the steps that our products go through to ensure that they are produced with respect for people, animals and the environment and we want to show these steps to our customers, in an open and transparent way."*

From the above discussion, it can be concluded that leading global supermarkets and large food retail groups have already inaugurated blockchain technology in their system upon realising the huge potentiality of blockchain technology and have started to use it. But it will continue to emerge more and more in every industry.

4 ROLE OF BLOCKCHAIN TECHNOLOGY FOR ENHANCING CUSTOMER RELATIONSHIP AND STRENGTHENING RETAIL BRAND-CUSTOMER RELATIONSHIPS:

There have been many studies goings-on to identify the implications of blockchain technology in existing business models and organizational functions across various industries, for example, retailers, healthcare sectors, hospitality, governmental services etc. (Casino et al., 2018; Hughes et al., 2019; Kshetri, 2018; Morkunas et al., 2019). However, there are very limited guidelines about using blockchain technology for retail branding purpose and to improve customers' experiences and increase their engagement with the retail brands. Most studies done in the retail sector about this technology is focusing on the blockchain-enabled supply chain to improve automated supply chain management. Considering blockchain adoption, the focal point for brand management can be on increasing brand equity (Chatzipanagiotou et al., 2016) and delivering brand promises to consumers through online transactions which can be displayed, captured, assessed and transferred (Crosby et al., 2016; Mougayar, 2016; Ghose, 2018). Boukis (2019) has presented four important aspects of the brand-consumer relationship which can be influenced through the adoption of blockchain technology. These four aspects are as follows:

- brand positioning and corporate brand image
- the benefits from consumers' relationship with brands
- online brand communication and
- consumers' trust in the brand

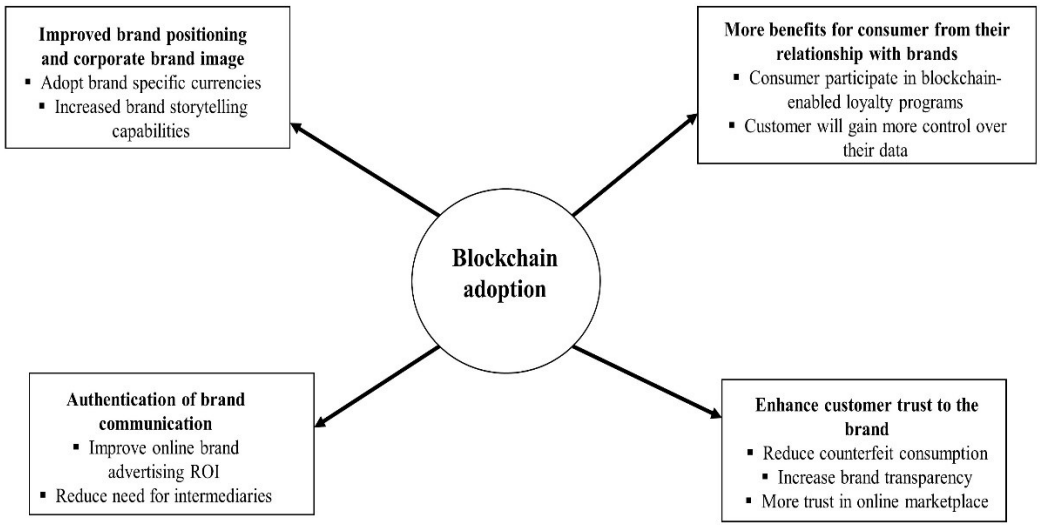

Figure 5: Four important aspects of brand-consumer relationships (adopted from Boukis, 2019)

4.1 Improve corporate brand positioning and brand image

The advent of technology has shaped the way how marketer and brands used to communicate with their consumers. Many researches have been done on identifying underlying benefits of the digital platform and social media for building brand image and co-create brand meaning (e.g., Fuchs & Diamantopoulos, 2010; Gammoh, Koh, & Okoroafo, 2011; Ramaswamy & Ozcan, 2016). The emergence of technology has reconstructed the communication channel, brand positioning channel and strategies od brands aimed at building uninterrupted and authentic interaction and relationship with their internal and external stakeholders (Boukis & Christodoulides, 2018; Keller, 2017; Laroche et al., 2013). In line with this, Boukis (2019) identifies that the adoption of blockchain could affect a corporate brand's image through (1) the adoption of brand-specific digital currencies and (2) increasing its brand storytelling capabilities.

4.1.1 Adopting corporate brand digital currencies

The popularity and the rampant growth of cryptocurrencies backed by blockchain technology have compelled several online retailers and service providers, such as Expedia, Dish, Microsoft, KFC Canada, CheapAir etc., to accept the payments through digital currencies, for example, Bitcoin and also enabled firms for the issuance of digital currencies for transactions with their customers (Hawlitschek et al., 2018; Kwok & Koh, 2018).

These digital currencies have the potentiality of taking place of the monetary exchanges and national currencies for firm-customer transactions and build a new form of brand image (Cocco et al., 2017; Boukis, 2019). For instance, Malaysian low-cost airline, Air Asia, has announced the launch of their digital currency for their customers. Blockchain-enabled monetary exchanges between consumers and firms could prove beneficial for boosting consumers' recall ability of the brand and might result in amplified brand awareness because of the continuous exposure to brand elements (Baumann et al., 2015). But this new adoption can put some potential threat for the brand image if this new technology does not fit with the existing brand image or if the technology performs poorly and provide a negative impact on the consumers. The possible high volatility of the value of these digital currencies and the lack of regularity framework can pose a threat to the online marketplace (Pieters & Vivanco, 2017) as the peer-to-peer mechanism does not confirm any real control over exchange value (Kwok & Koh, 2018) and can lead to compromising the brand's promise to its customers (Boukis, 2019).

4.1.2 Enhanced brand storytelling capabilities

According to Lundqvist et al. (2013) and Dessart, Veloutsou and Morgan-Thomas (2015), One of the prominent strategies for stimulating consumers' interest in various brand elements and for making them more memorable in consumers' mind is the brand storytelling. Through different brand story, firms interact with consumers' and build a strong connection with them. Blockchain technology and application have the potentiality of assisting firms for sharing a more inspirational and meaningful story to its external audiences (Dacko, 2017; Nofer et al., 2017) because consumers always

seek for experiences which are appealing to their emotional feelings and resembling their dreams (Solja et al., 2018 via Boukis, 2019).

Brands holding unique and authentic personality could share their brand identity and heritage through equipping all their products with blockchain-backed system and can take the advantages of leveraging their corporate image, For instance, A wine firm, Curtis Park Market, enabling their consumers to know about the whole story of their products and their journey from the production stage to the selling point just by scanning a barcode affixed on each bottle of wine. Through blockchain-enabled supply chain system, customer can get a deeper understanding of the brand they purchase and can immediately build a bond with the brand through compelling and factual experiences (Boukis, 2019).

Blockchain will be beneficial in enhancing storytelling activities and can aid to build a brand portfolio and design informative, authentic, and interactive experience with their customers. However, the brand should be very careful in integrating blockchain with their storytelling efforts as it might suppress the authentic brand image of the brand in the long run initiated by user-generated contents (Boukis, 2019).

4.2 More benefits for consumers from their relationship with brands

Over the past few years, technological advancement and the ascent of social media has spiked C2C interactions and leveraged the consumers with more power to influence over brands. The emerging technologies like augmented reality and online communities is enabling consumers to be more informed about their purchase and making them more demanding for the privacy of their data and empowering them to make the brands act according to consumers' will (Kim & Johnson, 2016; Morkunas et al., 2019). Lee and Pilkington (2017) are assuming that blockchain will create business activities more competitive through enabling consumers gaining more from their relationship with the brands which can come from the consumers' participation in the blockchain-enabled brand loyalty programs and through increasing consumer's control over their data (Boukis, 2019).

4.2.1 Consumer participation in blockchain-enabled brand loyalty programs

The conventional purpose of initiating brand loyalty programs is to increase consumers' share-of-wallet (Melnyk & Bijmolt, 2015; Odoom, 2016). The complexity and rigidity in the point redemption process, the disintegration of loyalty schemes and the abolition of strong rewards for loyalty, in the long run, are the causes of lessening the amount of customers' motivation in the loyalty programs (Wendlandt & Schrader, 2007). Because of these complexities, customers do not even realise the value or benefits of loyalty programs provided by brands and does not resulted in improving loyalty which is the main focus for initiating loyalty programs for the customers (Kang & Hustvedt, 2014). Brands can attempt to reduce the customer churn rate and can enhance their participation in different schemes and programs provided by the brand through embracing modern technologies like blockchain (e.g., Lee et al., 2003; Bilgihan, 2016).

Blockchain technology is enabling brands to incorporate their digital currencies as a medium of better redemption of loyalty points and revamping customers' experiences (Iansiti & Lakhani, 2017; Kowalewski, McLaughlin & Hill, 2017). For example, Singapore Airlines has inaugurated a blockchain-based Loyalty scheme partnered with national retailers where customer can redeem their loyalty points immediately from those partnered retailers through 'Digital wallet' (Boukis, 2019).

Blockchain-enabled loyalty programmes providing customers with the ability to avail cash loyalty points or exchange them in other industries which is significantly increasing the value of the loyalty points (Ksetri & Voas, 2019 via Boukis 2019). This variety of redemption option and the increasing value of loyalty points as a form of digital currencies will most likely motivate more consumers to participate in these types of loyalty programs backed by blockchain technology and buy more frequently from the retailer (Kowalewski et al., 2017; Casino et al., 2018). For example, Loyyal, a start-up company, offering blockchain-based loyalty incentives exchangeable across different markets. Furthermore, the transparency and visibility feature of blockchain technology will enable brands to offer more customised offer and the bundle of rewards and redemption option to the customers (Boukis, 2019).

Blockchain technology enables the brand to expand their partnership through brand alliances for promoting their digital currencies to attract and persuade consumers to redeem their earned points with any of the brands in the alliances which could affect customers' experience with the brand (Lemon & Verhoeuf, 2016). And more user-generated content about the firm's product and services can be avail from these customer's experiences and it will useful for new brands, new brand extensions and rapid brand recognition in a new or existing market (Boukis, 2019).

4.2.2 Consumers can gain better control of their data

Customer data is a very important element for any company or brands and companies always thrives for acquiring more and accurate and quality customer data to improve their products and services for capturing more customers and increasing market share. With the rise of acquiring customers data, maintaining, and preserving the privacy of the customer data becomes an issue of great concern and challenging task for the firms (Wu, Huang, Yen & Popova, 2012; Plangger & Watson, 2015). Protecting the privacy of the customer and their data is very important task otherwise the unauthorised access will create a feeling of identity theft among customers and eliminated customer's trust over the brand (Martin, Borah & Palmatier, 2017). In this case, blockchain technology can be leveraged for ensuring the protection of personal data, diminish data vulnerability and allow the customer to gain more control over their data and manage it on their own preferences (Lee & Pilkington, 2017).

Lee (2017) postulated that blockchain could offer extra benefits to the consumer through the power of monetizing their personal data by providing access to the firms. This system provides a win-win situation for both marketer and the consumers as a marketer would not have to struggle for the authentic data and customer will be benefited by the compensation for their shared data. But the reliability of these data gathered directly from the consumers enables the marketers to design and formulate effective targeting strategy and build unique anonymized customer profiles. And to motivate consumers to participate in their data sharing, brands should first demonstrate the idea of how their data will be used and ensure the protection of their data (Lwin, Wirtz & Williams, 2007).

The involvement of the third party will diminish between the advertiser-consumer relationship because the consumer will be empowered to trade their data directly to the advertising agencies (Iansiti & Lakhani, 2017; Plant, 2017 via Boukis, 2019) and will offer brands to optimize advertising spend could ensure a better experience for their customers. However, the challenge to ensure the value of their data-sharing relationship to consumers and convincing them to get access to their personal data will remains there for the marketers (Boukis, 2019).

4.3 Authentication of brand communication

The rise of the social media has compelled most of the organization to communicate about their brands and products and services to their consumer via the online platform and thus online advertising became the most prominent channel for the brands (Pfeiffer & Zinnbauer, 2010; Okazaki & Taylor, 2013). But because of the lack of tracking and verification system, it is very difficult for the brand to know the placement of their online advertisement and raises issues of key concern for them (Metzger, 2007). This issue remains a big concern for the advertisers because the wrong placement by the intermediaries can adversely affect the image of the brands and eliminates consumers trust on the brand. According to the WFA report (2017), about $16.4 billion has been wasted in the advertisement because of the fraud advertisement in 2016. Furthermore, as the online advertisement is dominated by few intermediaries, for example, Facebook, the cost per impression is getting considerably higher because of the demand of those intermediaries to reach their customers (Gielens & Steenkamp, 2019). Komulainen, Mainela and Tähtinen (2016) addressed that modern technology like machine learning can be a very useful tool to tackle these online advertising frauds. All the above challenges can be eliminated to a great extent through the implementation of blockchain in the online communication channel. Blockchain enables the brand to communicate directly with their consumers without any intermediaries to form a direct brand-consumer relationship and enables them to track their advertisement and ensure that it is reaching to its target audiences. This technology also provides the consumers with some kind of compensation for their attention which can attract and motivate the customers to involve with the brands more and enhance the brand experiences (Boukis, 2019).

4.3.1 Improved online brand advertising ROI

As the advertisement will be delivered to the target consumer's directly through verification, blockchain-enabled advertising can contribute extensively to reducing the advertising waste (Iansiti & Lakhani, 2017; Ksetri & Voas, 2019 via Boukis, 2019). Blockchain-based browsers can make this viable where those browsers will be able to monitor and track the activity of the users anonymously. The advertisers and publishers get a comprehensive detail like conversion rate, customer profile etc., of the advertising campaign by observing user's reactions and behaviour. Based on that information, advertisers can create more content and can determine the right channel or right place for their advertisement to reach to their targeted customers. For instance, BitClave, a blockchain platform, is providing advertisers with the facility to know who has viewed their advertisement and paying compensation to those consumers for their attention. This system is like a win-win situation for both parties and has the potentiality of engaging more consumers and strengthening the brand-consumer relationship (Boukis, 2019).

4.3.2 Reduced need for intermediaries

There are several intermediaries who are helping brands to place their advertisement on numerous websites. The blockchain adoption will eliminate the need for the use of this advertisement for placing an advertisement in the long run (Mougayar, 2016). Usually, facebook uses the mechanism of database and algorithms for displaying personalised advertisement and publish them in the user's news feed to capture their attraction and thus enhance the advertising effectiveness (Aguirre et al., 2015). Through the adoption of blockchain technology, the need of such intermediaries like Facebook will most likely decrease (Iansiti & Lakhani, 2017; Ksetri & Voas, 2019 via Boukis, 2019) and will allow the brands to independently connect with their consumers and empower with the verifying ability to measure the reliability and ensure benefits for both brands and consumers (Plant, 2017 via Boukis, 2019; Hughes et al., 2019). For instance, platforms like AdEx enable users to choose into advertising and ensure that advertisers reimburse only for valid click-throughs (Boukis, 2019). As soon as the blockchain confirms that a user has viewed an advertisement, the contract would automatically distribute compensation to the user's account (Boukis, 2019). This type

of application could enable brands to scrutinize the placement of their advertisement with higher accuracy and help to alleviate fraudulent advertisement release through automated bots and thus ensure engagement with the right audiences (Metzger, 2007; Haddadi, 2010). This application even allows consumers to select and choose a favourite advertiser or publisher and put it in whitelisted from whom they will accept advertisement and willingly share information about their interest and can get compensated for that (Zyskind & Nathan, 2015; Ksetri & Voas, 2019 via Boukis, 2019). Consequently, brands can also decide on whether they should invest money on the specific publisher (Boukis, 2019).

4.4 Enhance consumers' trust in the brand

According to Chaudhuri and Holbrook (2001) via Boukis (2019), brand trust refers to the consumers' willingness to rely on the ability of the brand that the brand will deliver its promise. In this competitive era, companies always try to increase their customer-based brand equity, the desired outcome of branding efforts, which can be avail through increasing consumers' trust in the brand (Delgado-Ballester & Luis Munuera-Alemán, 2005; Veloutsou, 2015). Previous research and studies on branding have assessed both the role of online brand communities and community engagement for developing trust in the brand (Laroche et al., 2012), and has analysed how brand trust develops in the digital environment or through technology-facilitated interactions between organizations and consumers (Becerra & Korgaonkar, 2011; Giovanis & Athanasopoulou, 2018). Boukis (2019) has provided three ways of restoring brand trust via the adoption of blockchain technology. These are: (1) enhancing brand transparency; (2) reducing counterfeit consumption; and (3) increasing brand trust in online marketplaces (Boukis, 2019).

4.4.1 Reducing counterfeit consumption

The most useful way to gain consumer trust is to provide the necessary information about the product and the brand (Gefen et al., 2003 via Boukis, 2019; Chiu et al., 2010 via Boukis, 2019). Nonetheless, one of the key challenges in modern markets especially for the luxury market and online purchases is to ensure the verification of the product's authenticity and refrain the consumers from consuming the counterfeit

product (Phau & Teah, 2009). Counterfeit products continue to be a multi-billion industry which is harmful to numerous sectors and it is a quite challenging task to guarantee the authenticity of the product consumer receive through online platforms and this resulted in negative or poor brand experiences with low-quality goods and also increase product returns (Randhawa, Calantone & Voorhees, 2015) and dissatisfactions of the consumers and consumer became reluctant to buy any products online (Clemons et al., 2016).

One of the great potentiality of blockchain-based application is that it enables the brands to track the whole life cycle of their products (Pilkington, 2016; Francisco & Swanson, 2018) and thus brands would be able to locate the source of illegal merchandise for taking legal actions and could reduce the chance of deceitful products reaching consumers. Furthermore, in authenticating the entire life phases of product purchases, consumers can decrease misinformation risk in their purchases (Kshetri, 2018; Montecchi et al., 2019) which could ultimately result in the enhanced brand trust from consumers (Chaudhuri & Holbrook, 2001). For an example, John west, A firm prints barcodes on their tuna cans which will enable the consumers to track the ingredients and even the information about the fisherman who caught that fish (Boukis, 2019). Several organic food suppliers already use blockchain-based application for proving the authenticity of the products for consumers which is contributing considerably in minimizing concerns about the authenticity of their purchase (Apte & Petrovsky, 2016; Hughes et al., 2019). Therefore, Blockchain technology would enable a brand to reduce the adverse effect of counterfeiting products and minimise consumers concerns and thus gaining trust on the brand (Boukis, 2019).

4.4.2 Increased brand transparency

Over the past few years, consumers' increasing awareness about social and environmental issues has compelled organizations to be more accountable to society and environment for their actions and devote resources and themselves for pursuing corporate social responsibilities (Christodoulides, 2009; Rea et al. via Boukis, 2019, 2014; Kang & Hustvedt, 2014). It became a major challenge for the companies to ensure a transparent value chain and continue delivering their brand promises to stakeholders (Boukis & Christodoulides, 2018).

Blockchain adoption by retailers will enable consumers eventually obtain better access to more comprehensive information about products and services (Kshetri, 2018; Francisco & Swanson, 2018) as blockchain network offers to its user firms to make their supply chain more visible including the process of production and service delivery. Consequently, enabling firms to build consumer trust in due course through transparent communication and interactions (Bengtsson et al., 2010).

Blockchain is facilitating brands for becoming more translucent to external stakeholders in providing information concerning the journey of a product from procurement of raw materials to the manufacturer to distributor to retailer, and ultimately, to the consumer (Apte & Petrovsky, 2016 via Boukis 2019; Montecchi et al., 2019). For instance, De Beers, Provenance and Babyghost permit consumers to track details about their products to find out the product was responsibly sourced or not (Boukis, 2019).

This intensified supply chain clarity could alleviate consumers' concerns about product quality, a firm's suppliers labour practices, etc., and finally increase their trust in the brand (Handfield & Bechtel, 2002; Agarwal & Shankar, 2003). Brands could make utilization of smart contracts for enriching their brand promise stability when interacting with customers (Kosba et al., 2016). Each party can guarantee the other party's compliance with the contractual obligations which was commenced earlier through incorporating brand promises, customer policies (e.g., refunds) or contractual agreements into smart contracts (Mattila, 2016). For example, when customers sign contracts with service providers and agree on a specific for delivery of the service, smart contracts would automatically refund the customer upon breach of the conditions (Boukis, 2019). These activities by taken by brand would reinforce consumers' confidence on the brand and would raise their trust that they will get the fair treatment from the brand and the brand will be more trusted (Boukis, 2019).

4.4.3 More trust in online marketplaces

Over the past decades, the traditional way of business and commerce has been revolutionized through the implementation of the online marketplace, for example, Amazon, eBay, Alibaba, AliExpress etc., where B2B, B2C, C2C transaction happen

very quickly and smoothly. Through these marketplaces, consumers get to find their right product and services and can also find the provider for their products and services (Subramanian, 2018; Gielens & Steenkamp, 2019). These marketplaces also allow them to sell their product or used item to other consumers and provide good value for that. But when these marketplaces were first launched, they dealt with the problem of trust issue especially with the new sellers or the first-time buyers (Hong & Cho, 2011).

According to Boukis (2019), Blockchain could be proved to be able to reinforce trust in the online marketplaces in two ways. The first way is through attributing trust to the seller not only to the sites themselves but also on different marketplaces. But this trust cannot be attributed through any intermediaries as every transaction is visible and there is no scope of fabricating the reviews (Subramanian, 2018; Hawlitschek et al., 2018). For example, an open source blockchain platform, OpenBazaar is already connecting buyers and sellers without any third-party intervention and parties can use cryptocurrencies for transactions which elimination the trust issues as well as the extra fees of transactions (Boukis, 2019).

Blockchain platforms could additionally evident to be indispensable in restoring or improving trust at the product level, where brand promises continue to be a key reference factor (Kosba et al., 2016; Subramanian, 2018). Blockchain-driven verification has the potentiality in enhancing believe and trust in online purchases from third parties consists of high involvement product purchases, high-risk purchases, second-hand merchandise, and online purchases of luxury brands (Boukis, 2019).

Blockchain technology could be subject of high interest for the marketers who are dealing with the brands anticipated with higher accountability, social responsibility, or corporate responsibility, for example, environment-threatening industries or organic food sellers etc. (Castaldo, Perrini, Misani & Tencati, 2009; Soppe, Schauten, Soppe & Kaymak, 2011). Similarly, blockchain applications can be critical in decreasing consumer uncertainty for credence services/products because of unavailability of tangible evidence or consumers' incompetence to evaluate such purchases (Mattila & Wirtz, 2002).

4.5 How blockchain can benefit consumers

It is being predicted that blockchain can change the retail industry and branding to a large extent by the revolution of blockchain technology just the same way how the emergence of online shopping did to the way we used to shop. Upon understanding the potentiality of blockchain technology which was initially dedicated to cryptocurrency like Bitcoin and realizing the beauty of this technology which ensure hacker-proof system, digital world is thriving to utilize and open new avenues in other industries and sectors.

The followings are some potential benefits for the consumers which can be achieved through the implementation of this technology in the retail chain:

4.5.1 Product authentication

Manufacturers and the consumers are afflicted greatly by the counterfeit goods and create an adverse effect on the brands' image. A report revealed that pharmaceutical companies are losing around $200 billion/year because of counterfeit drugs reported since 2014. But the immutability and the peer to peer network system record every step of a supply chain with more authenticity and allow retailers to track the supply chain process for ensuring product authenticity. This system would especially benefit the customers by allowing to check and verify the originality and the authenticity of the product before they make a purchase decision. This system can provide confidence in the customer in their purchase which will ultimately increase the brand image and world resulted in the achievement of higher equity (Raphael, 2018).

4.5.2 Supply chain visibility

According to a study of Labelinsight in 2016, the factors which can create a long-term relationship with the customers is to provide them with complete brand transparency. The transparency ROI study of Labelinsight aimed to find drivers for achieving customer's long-term trust and loyalty. The study reveals that around 94% customers affirms that their loyalty depends on the complete transparency providing by the grand and nearly 73% customers are willing to pay more for a product that meets their

expectations through transparency. Thus, in today's competitive business world, brand transparency, trust and ethics become imperative for the business to strengthen the relationship with the customers. Moreover, due to the global warming and adverse environmental situation, consumers tend to make their purchasing decision carefully to avoid the environmental and social negative impact of their purchase and expect that the brand is performing their environmental and social responsibilities accordingly. The blockchain technology has special features of ensuring transparency and increase visibility and thus the implementation of blockchain technology in retail supply chain network would provide the real-time visibility of supply chain and permits consumers to investigate the whole supply chain starting from the point of origin to the point of selling to retailers or ship to consumers (Raphael, 2018).

4.5.3 Product transparency

FoodLogiQ's supply chain transparency consumer survey revealed that about 54% of consumers expect enough information about their purchases from where it was produced or manufactured, what are the raw materials used, in what condition the products were manufactured or produced, the labour condition, the transportation method, the date of delivery and when the product reached to the retailer points etc. Only a blockchain enabled system can provide this level of transparency related to a product. While a conventional system can take up to 7 days and blockchain-enabled system made this possible to track everything within few seconds. There is hardly any chance of manipulating information and consumer can receive the whole transparency related to the product they intend to buy (Raphael, 2018).

4.5.4 Warranty management

Warranty management is often a quite complex and time-consuming process for both consumer and especially for the brand. It does not take care properly; this can harm the image of the brand adversely. And the customer often fell into a situation when they can't claim a warranty because of losing the sales receipts as a shred of evidence. Customers often buy many different things in their life and it is also an irritating task for the consumer to keep safe and ensure the availability of all the receipts for their purchases. This issue can raise dissatisfaction and can be harmful to the image of the brand. However, the blockchain-enabled system provides customers with an easy way

to track, maintain, transfer, and make claims for their warranties and for that they do not need to keep copies of the sales receipts. Brands could also easily verify the ownership of the warranty and can ensure better customer experience and relationship (Raphael, 2018).

5 CONCEPTUAL FRAMEWORK

For presenting a comprehensive and coherent picture of the contribution of blockchain technology in adding value to retail branding efforts and the role of blockchain technology in enhancing customer experience and strengthening the retail-customer brand relationship, a conceptual framework has been developed based on the views expressed by the various scholars in their articles reviewed. This model is showing how retail brand can achieve more customer loyalty and can enhance their brand equity through accelerating their branding effort by making it more effective and efficient through the implementation of blockchain technology and how this technology can play a big role in improving customer experience and strengthening the retail brand-customer relationship.

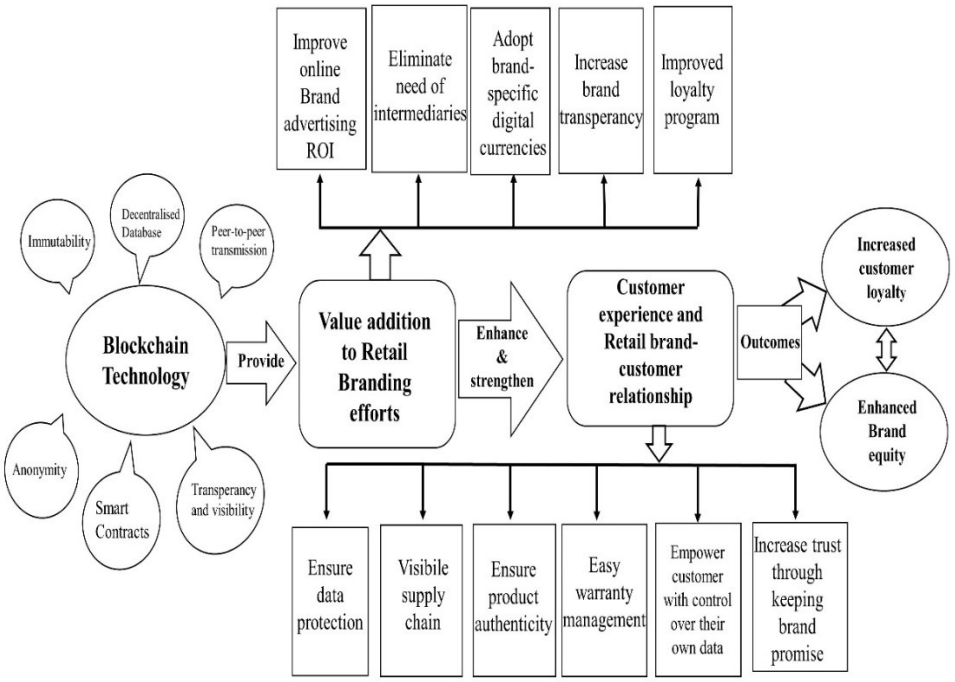

Figure 6: A conceptual framework for adding value to retail branding efforts and enhancing customer experience and strengthening retail brand-customer relationship through implementation of Blockchain technology

The model depicts that the unique features of blockchain technology such as immutability, decentralised database, peer-to-peer transmission system, anonymity, use of smart contracts, transparency and visibility can be useful in retail branding efforts for increasing their customer loyalty and enhancing brand loyalty if effectively implemented. The outcomes of the process are increased customer loyalty and enhanced brand loyalty which can be achieved through value addition process in the retail branding and through strengthening the brand-customer relationship and enhancing customer experiences.

This model is focusing on two interrelated aspects, firstly the value addition for retailers branding effort and secondly, the contribution for enhancing customer experience and strengthening the relationship with retailers.

In the value addition part, firstly, the blockchain technology enables retailers to improve their online advertisement return on investment. Both Tan (2019) and Boukis (2019) identified that Blockchain enables the advertiser to detect and monitor the location of their advertisement placed. They could also monitor the audience of the advertising and determine whether the advertisement reached to the correct audience or not and take measures based on that information. This mechanism increases the efficiency and effectiveness of promotional activities and provides a clear picture of potential customers. Furthermore, this technology would help retailers to communicate directly with their customers by eliminating the layer of third parties like, Google or Facebook and can contribute a lot to save the promotional cost of the marketing and can pay the little amount directly to potential consumers for their attention. This model will encourage the consumers to pay attention to blockchain-enabled advertising as they will have an opportunity to earn as well as to control their profiles.

Buokis (2019) pointed that blockchain technology will enable the retail brand to issue their brand-specific digital currencies and added that these digital currencies have the potentiality of taking place of the monetary exchanges and national currencies for firm-customer transactions and build a new form of brand image. Moreover, through the adoption of blockchain technology in the retail chain, retailers will also be able to provide more transparent information about the products and brand and can eliminate suspicion from the mind of the customers can replace that with trust and confidence.

In the lower part of the model shows how customers will get benefited and how that will result in increased experience and build a strong bond with the retailers.

Furthermore, Blockchain technology can be leveraged for ensuring the protection of personal data, diminish data vulnerability and allow the customer to gain more control over their data and manage it on their preferences. The blockchain-enabled system will ensure visibility and transparency in the product's supply chain. This transparency can eliminate all the concern of the customers related to the product authenticity and they can check if the product is truly organic or traded fairly or not as labelled. It will improve experiences and will increase their trust for the retail brand.

Additionally, the blockchain-enabled system provides customers with an easy way to track, maintain, transfer, and make claims for their warranties and for that they don't need to keep copies of the sales receipts. Brands could also easily verify the ownership of the warranty and can ensure better customer experience and relationship by reducing complexities in warranty management. All these factors could facilitate customer loyalty and thus could lead to the increased brand equity of the retailers in the long run.

6 CHAPTER: METHODOLOGY

This chapter of the thesis illustrates the research design and research methods to conduct the study, as well as a clear explanation of the data collection and analysis process. This chapter also presents logical explanations behind choosing research philosophy and data collection methods.

6.1 Research methodology

This study adopted a qualitative research approach because the nature of the research question does not require quantitative analysis and justified the need for qualitative study over quantitative study. Frankel and Devers (2020) compared the qualitative research process with an empty sketch which can get a shape by applying a researcher's skills during the entire research process. According to Berg and Bruce (2001), Qualitative research investigates and find answers of when, why and how a specific situation appears. As the research questions also seek the answers of how blockchain can be used to enhance the brand image of the retail chain by increasing consumer trust which can result in gaining loyalty. Furthermore, As qualitative analysis greatly contributes in theory development to provide in-depth insights of dynamic nature of marketing issues and enhance the understanding of different phenomena, different researchers and scholars put emphasize on the qualitative approach of collecting data and analysis (Vasina, 1999; Rae, 2001). The importance of qualitative research also emphasized by Patton (2005) as it provides with the scope of studying non-numeric data and allows to gather a naturalistic description of a specific real-life problem through taking open-ended, detailed interviews and collecting data from direct fact-finding observation. This study also focuses on understanding the customer perception on implementing blockchain which will provide them with access to the authentic information about the product they are buying or intend to buy. And qualitative study fits perfectly to achieve this objective as qualitative research is extensively used in understanding human psychology and behaviour (Berg & Bruce, 2001).

6.2 Research philosophy

Research philosophy is about the nature, sources, and the method of collecting and analysing data about a phenomenon for developing knowledge for that phenomenon (Bajpai, 2011). According to Saunders, Mark & Lewis and Thornhill (2009), Research philosophy stands for beliefs and assumption related to the development of knowledge for an issue in a specific field. Burrell and Morgan (1979) via Saunders et al (2009) added that every stage of research requires several assumptions including epistemological assumptions, ontological assumptions, axiological assumption etc. And these assumptions shape the research design which is the process of analysis and interpretation the findings of the research (Crotty, 1998 via Saunders et al, 2009).

There are five major research philosophies in business and management which are widely in use including positivism, critical realism, interpretivism, postmodernism and pragmatism. From these philosophies, the qualitative study may embrace positivist, critical or interpretive philosophical perspective, whereas Myers (2008) and Galliers (1993) emphasized on positivism and interpretivism.

This thesis is incorporating interpretivism as it allows creating new, richer understanding and interpretation of social world and context (Saunders et al, 2009) and it will help to infer a logical meaning to the research subject. Interpretive research involves interpreting the elements, data, and the result of the study by the researcher as it promotes the researcher's interest in the actual study and requires data collection through in-depth interviews and observations.

Critical realism focuses on explaining our experiences in terms of the underlying structure of reality that shapes the observable event and treat reality as external and independent which is not directly accessible through observation (Saunders et al, 2009). This research philosophy is not being widely used by the researchers because of its nature of treating the real world a totality of social, economic, cultural, historical, and political domination which limits the scope of the researchers. Myer (2008) argued that people's ability to consciously change and shape their environment and circumstances can be influenced by culture, society, politics etc.

On the other hand, positivism is a widely adopted research philosophy which assumes reality as a given matter and explains facts in a measurable manner. This philosophy is opposite of critical realism where the researcher is independent and knowledge is formed through trustworthy observation and measurement without the involvement of human interest in the subject (Wilson, 2010, p. 10, 306; Bajpai, 2011).

Researchers who adopt positivism philosophy, start with existing theory and attempts to remain neutral and detached from the research and data to avoid the influences of the researcher's own thought process (Saunders et al. ,2009; Crotty, 1998 via Saunders et al., 2009). The emphasise of this philosophy is on highly structured methodology by excluding researcher own endeavours which lead them to quantifiable observation and statistical analysis. Atkinson and Delamont, 2010; Myers, 2008 postulated that the positivist approach requires a quantitative approach to collect, analyse data, and interpret findings.

Upon analysing the both positivist philosophical perspective and critical realism perspective, both philosophical perspectives do not fit with the requirement of this study and do not serve the purpose of the thesis. The interpretive philosophical view takes a naturalistic view of data collection into account in the forms of detailed and focused interviews and observations and at the same time allows researchers embroil in the social context for data collection and immerse himself in the social world where the research is going to take place (Wilson, 2010, p.11).

In other words, it eliminates the limitations of both positivism and critical realism by fusing human interest with the components of the study for resulting in a reliable interpretation of the study. Thus, the interpretive philosophy is adopted to infer logical, coherent, and consistent interpretation of the study.

6.3 Research approach

Research approach can be referred to a researcher's comprehensive plan including wide-ranging assumptions and reasoning related to the data collection methods, analysing and interpreting process and defines the place of the theory. Depending on

the nature of the problem and the inherent purpose of the study, a researcher can adopt inductive, deductive, or abductive approaches (Chetty, 2016).

The objective of an inductive research approach is to develop a new theory whereas the objective of deductive research approach is to examine a theory. In the inductive approach, researchers collect data and based on observations, they formulated theory. The deductive approach starts with a hypothesis and decides research for testing that hypothesis (Wilson, 2010, p. 7). A quantitative approach is widely using the deductive approach whereas qualitative approach often embraces the inductive approach (Gabriel, 2013). While comparing the deductive approach with "waterfall" and inductive approach with "hill-climbing", Tunnainen (2018) defined abductive approach as the blend of both inductive and deductive approach.

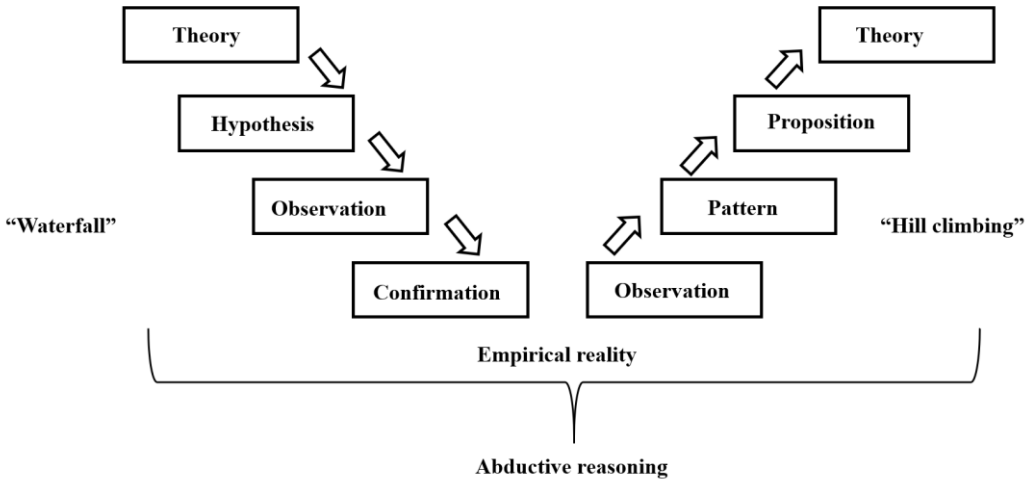

Figure 7: Deductive, inductive, and abductive research process (adapted from Tuunainen, 2018)

As the abductive approach starts with theoretical understanding for collecting and observing data, it fits more for the qualitative study. The objective of the abductive approach is both developing theory and modification of theory as researchers may start with the existing theory and based on the observations need to modify old theories or generate new theories. Abductive research approach provides flexibility whereas deductive or inductive approach may limit the scope throughout the research process (Saunders, 2011).

The nature of this thesis is qualitative which starts with developing a theoretical framework based on existing literature and includes the process of data collection through interviews and after analysing the data the result can be developing a new conceptual framework on the research phenomena incorporate with the previous theories in the research area which justifies the use of the abductive approach for this research.

6.4 Data collection

This thesis followed data collection through interviews. The data collection process has been discussed in the following sections thoroughly. The thesis qualitative in nature and thus the data collection process includes written or spoken words instead of the data collection through measurable terms or numbers. There are few types of a data collection method in qualitative research consisting of interviews, observations or focus group discussion (FDG). A combination of these methods can also be utilized in some cases (Polkinghorne, 2005). There are two types of data: primary and secondary. The primary data is some types of data which is new and raw and have never used in other studies. Primary data can be of different types such as images, written words, recorded audios etc. However, primary data needs to be converted into well written documents so that it becomes easier for the researcher to understand and to analyse those data. Wilson (2010, p. 136) and Hox and Boeije (2015) addressed that a researcher should be unbiased and should keep notes for his/her direct fieldwork to ensure the collection of a well-documented primary data sets.

The thesis adopted a semi-structured interview for collecting primary data in the aim of getting a wide range of data for serving the purpose of the thesis. In the semi-structured interview, the interviewer usually asks the similar questions to all the respondents though there is scope for the interviewer to modify or change the order of the questions or ask additional questions depending on the answers of the respondents to gain deep insights (Fielding & Thomas, 2016, p. 282). Thus, this type of interviews facilitates not only open discussion but also standardised questions and support the continuation of the study for all the interviewees. This collection method would assist the researcher to investigate the customer's perspective on using blockchain

technology retail branding and for strengthening their relationship with the brand through enhancing their experience.

6.5 Sample

The sampling technique used for this thesis is 'purposive' which is different from the random sampling technique. In random sampling techniques, the population or respondents for data collection is usually be chosen on a random basis, whereas purposive sampling technique select population or respondents by selecting a target population who can provide rich information and whose opinion suits best the research purpose and can provide acumen answers to the research questions (Devers & Frankel, 2000). The participants of the interviews are a combination of students and service holders and consists of male and female from different nationalities and fall into the age group of 25-40. The age-group and gender of the participants have been chosen with the purpose of achieving the most peerless insights from the research questions and to achieve a comprehensive view. The selected participants belong to generation Y or Millennial group whose birth year is between 1978 to 2000 (Petroulas et al., 2010; Lyons, 2016).

According to a recent report by Garoia (2018), millennials (generation Y) more frequent buyers than other generations, also they always search for inexpensive options for making their purchases. The research by Sullivan and Heitmeyer (2008) states that generation Y is concerned about society, environment, and sustainability but simultaneously, meeting their own choices and preferences are very important for them. The aim of the thesis is to understand the customer perspective on contemporary technology which can revolutionise different sectors and our life. This Y generation is usually more concern about the sustainability issue, data protection, privacy and so on which can be eliminated through the implementation of this technology in the retail sector. Thus, it is logical to implement a purposive sampling technique for this thesis.

According to Ramesdan (2006), Semi-structured interviews requires a great moderator's efforts and time because the interviews are usually conducted manually, and then transcribed and codified by hand. But a moderator should not spend several

weeks or months to gather, analyse, and interpret the data (Ramesden, 2006). Thus, the moderator should aim at reaching 'point of saturation' (Glaser & Strauss, 1967).

A point of saturation refers to the point where enough information has already been gathered and further interviews would not reveal new data. In most of the cases, the point of saturation is usually reached after 7 to 10 interviews. This thesis has conducted seven semi-structured in-depth interviews as the point of saturation has been reached after seven interviews.

6.6 Interviews

The most common method for collecting primary data for performing qualitative research interviews which provide researcher/interviewer to explore and gain a deeper understanding on the subject matter through the views, thoughts, ideas, beliefs, perceptions, experiences, motivation and verbal and non-verbal responses of the individual participant taken part in the interview (Wilson, 2010, p. 138; Gill, Stewart, Treasure & Chadwick, 2008). According to Gill et al. (2008) and Adler and Adler (2012), the collected data through interviews represent participants' point of views and the maximum number of interviews should not exceed 30 participants.

Structured, semi-structured and unstructured are the three most usual in-depth interview methods aiming for data collection (Gill et al., 2008; Wilson, 2010, p. 146). Furthermore, he explained the characteristics and nature of all these three types of interview methods. A structured interview is very rigid in nature where questions are predetermined and unstructured is very flexible in nature with no question formulated beforehand which can be very time consuming for the interviewer to get the desired data. In the unstructured method, the interviewer first starts with a general question and depending on the answers follow up question were asked by the interviewer. A semi-structured interview is the middle way of these two methods which combines elements from both structured and unstructured methods. The questions are organised and formulated beforehand but the interviewer can change or add more questions based on the answers of the respondents to get comprehensive and rich data from the participants. Gill et al (2018) demonstrated that semi-structured interviews follow open-ended questions enabling respondents to respond in a flexible manner and allow

the researcher /interviewer for modifying questions on situational demand. In line with his thought, the semi-structured interview method has been adopted in this thesis for ensuring smooth and flexible data collection process.

Due to the situation affected by the Coronavirus, the interviews taken over the phone and through video call for ensuring social distancing and safety. The length of the interviews is approximately 50 minutes to 1 hour 15 minutes. The names of the interviewees have been kept anonymous in the aim of ensuring the absence of social-desirability bias. Depending on the consent of the interviewees, the interview sessions were recorded using a mobile phone at the beginning of each interview session and the research purpose and clear knowledge about the research topic were presented to clear the idea to the interviewees. (Gill et al., 2008; Wilson, 2010, pp. 138-141.)

The necessary details about the interviewees have been presented in the following table:

Table 1: Details of the interview participants

Interviewees	Nationality	Age	Gender	Occupation	Interview dates	Duration of the interview
I1	Bangladesh	28	Female	Service holder	14.04.20	1 hours 13 minutes
I2	Uganda	26	Female	Student	15.04.20	56 minutes
I3	Finland	30	Female	Service holder	15.04.20	51 minutes
I4	Italy	29	Female	PhD Student	18.04.20	1 hour 5 minutes
I5	Italy	36	Male	Service Holder	18.04.20	1 hour
I6	Bangladesh	30	Male	Service Holder	19.04.20	1 hour 7 minutes
I7	India	27	Male	Student	20.04.20	53 minutes

***I represent the interviewees.**

Gill et al. (2008) have suggested that the participants should be well-versed in a detailed manner and should be assured about anonymity and confidentiality before conducting the interview. Thus, the interview session was started after confirming that the interviewees gained enough knowledge about the research subject and understood the purpose of the research. For ensuring this, the researcher started the conversation for relaxing the environment and to for inducing motivation of the interviewee through explaining some important topics related to blockchain technology as the interviewees might get difficult to understand some issue related to blockchain as it is a very contemporary technology and not widely known to everybody.

The interviews were recorded in the form of audio recordings using a cell phone. Therefore, it is worth noting here, the informal parts (motivating the participant for the interview, the explaining research questions, familiarizing topic, and making understand research purpose by the interviewer to the interviewees etc.) of the interviews were not recorded. Thus, durations presented in the Table represent the durations of question-answer sessions of the interviews.

Carson et al (2001) suggested that the comfortability of the interviewees should be ascertained to minimize the distraction of their attention. Thus, it was given the utmost importance that the interviewees can share their thoughts without any disturbance during the recording process. Upon successful completion of the interview session, the recorded audio was transcribed carefully into a written form. The written interview transcripts were reviewed thoroughly to avoid the chance of missing information or fragmented information. After that, those transcripts were used for further evaluation and analysis for finding the outcomes of the study.

6.7 Data analysis process

Upon successful completion of all the semi-structured interviews, the audio recordings were transcribed into written forms for further interpretation. The researched ended up with seven interview transcripts for further analysis and interpretation.

The data analysis process adopted Braun and Clarke (2006) six phase of thematic analysis which consists of familiarization, coding, search for themes, reviewing

themes, defining, and naming themes and writing the report. These six phased thematic analyses for data processing is a recurring process which helps researcher make rich sense from the data through going back and forth between the phases until the researcher is satisfied with the outcomes (Braun & Clarke, 2006). In this study, the researcher read through the research transcripts several times, searching for meanings and patterns in the transcripts relating to the research questions. First, potential codes and short phrases had been developed based on the initial understanding from the reading of the interview transcripts because coding cannot be done in one attempt (Braun & Clarke, 2006). The codes were refined over and over through the continuation of reading of the transcripts and identified patterns for validating the research outcome.

The 'codification technique' has been used in this thesis for analysis purpose for ensuring to meet the research objectives in the best possible way. Though the qualitative data analysis has been criticized by a few researchers, the 'coding' method significantly eliminate that criticism. According to Chowdhury (2015), to enhance the reliability, validity and trustworthiness, qualitative research should embrace data analysis techniques like coding, sorting, and organizing the collected data for qualitative analysis.

Gill (2007) define coding as the process of grouping texts for identifying thematic idea and for developing a conceptual framework containing those ideas. Specifically, the method of identifying the most relevant and useful paragraphs from the transcripts and analysis of those paragraphs in accordance of the research purpose for finding out the relevancy and relations between the paragraphs and the research purpose can be termed as the coding process (Gill, 2007; Cessda, 2018). The generation of codes in thematic data analysis requires labelling relevant ideas into short phrases and this is accepted as a scientific way of analysing qualitative research data by most of the researchers (Braun & Clarke, 2006).

This thesis followed a thematic concept-driving coding, a method for analysing paragraphs in the transcript for identifying relevant ideas in the text that matched with and serve the research objective (Cessada, 2018). In this regard, the transcripts of the conducted interview were read thoroughly for identifying relevant text from the

passaged and classified under some codes related to the research objectives. For further analysis, data were assembled, reduced, and prepared through ignoring the codes which were found irrelevant to the research subject and put forward the relevant quotation which was repeated by several respondents for further analysis.

7 FINDINGS OF THE RESEARCH:

This chapter describes the findings from empirical research. The researcher divided the questions of interviews into two interdependent segments: (1) Value addition through blockchain technology in retail branding efforts, (2) role of blockchain technology in enhancing customer experience and strengthening the brand-customer relationship. Under each segment, several questions were asked to participants. Based on the answers obtained from the participants, this chapter draws the findings of this thesis. The results of this chapter serve as the foundation for further analysis of this research. The terms 'interviewer' has been addressed by the term 'interviewer' while 'participants' address the interview participants.

7.1 Value addition through blockchain technology in retail branding efforts

After performing the introductory conversation and confirming the circumstance that the participants were comfortable enough for starting the core part of the discussion, the interviewer asked the participants to share their general knowledge or idea about blockchain technology to find out how familiar they are to this contemporary technology. Most of the participants confidently shared what they know about blockchain technology. Most of them know this technology because of Bitcoin. All the seven participants at least heard about this technology and some of them encountered with this technology while trading Bitcoin. Their familiarities to blockchain technology were visible in their answers.

> *"I study Financial technology, so I know this technology pretty much. This is a technology that supports the development of crypto currencies like bitcoins, lite coins, Ethereum etc. Satoshi is believed to be the founder of bitcoins and blockchain technology in 2008 and since then it has evolved." (I2)*

> *"I am pretty familiar with the blockchain technology and I've had a bitcoin and other cryptos in my portfolio, for trading purposes. I think that, just like many technologies it can both be used for good or bad purposes, such as buying drugs and illegal services in the black market due to the anonymous nature of this technology, to proper legal purposes such as crypto trading and so on." (I5)*

> *"Yes. Blockchain is an immutable transaction ledger which is maintained within a distributed network of peer nodes. The first and most widely recognized application of blockchain is the Bitcoin cryptocurrency." (I7)*

> *"Yes, I am familiar with this because my husband trade bitcoin and I have learned about it from him. [.....]" (I1)*

Then the interviewer followed up by asking a question about their opinion on retailers implementing this technology to their system. Most of the participant expressed their concern for the utilization of blockchain technology in the retail industry. Firstly, because they know this technology for only financial transaction purpose and think it is suitable for financial industry only and secondly as this technology involved complexities and need more resources, the retailers might be able to best use this technology and thus might not get the acceptance.

> *"I do not think retailers are ready for the blockchain technology because of its complexity. Blockchain technology needs a lot of space because it is energy consuming. Secondly, this technology is still new, and research is still being carried out to ensure its safety and simplicity in usage." (I2)*

> *"I think implementing blockchain in retail industry could be a good idea but can proved to be a time consuming one. I am not sure how much retailers are ready for adopting this technology. If they can utilize and have enough resources, then it might bring very good results." (I5)*

> *"I have no idea how they can use it. As I have heard it is being used for financial transaction and banks and other financial institution might use it. But retailer? not sure!" (I6)*

> *"I think, it will not get wide acceptance immediately, gradually maybe. But if they implement it for money transfer option or for transaction then maybe it will affect negatively." (I7)*

Then the interviewer asked them about their choosing criteria based on which they decide on a retailer from whom they purchase. This question was asked to get a general view and get important factors for the retailer to attract customer to choose them for purchasing. From their views, availability of varieties of products, reliability and quality of the products offered, price and the location proximity are the important factors for choosing a retailer.

"For me, variety of products under one roof, affordable Price, sells genuine products discount offer and location convenience is important. If a retailer meets these then I became regular to them." (I1)

"If I go to the actual store, I find the location important so that it is easy to reach. It is important for me that I can trust on the retailer and its service and products. In some cases, the price level also may effect on my choice." (I3)

"The varieties of the products offered, especially because I am lactose intolerant, and some places tend to have fewer options than others. To me is also important the price: so, I am more willing to choose a retailer that offers a good variety with affordable prices." (I4)

Product availability, price, discounts, location. But for me I really like those retailers where I can get all things I need. I do not like to move from one shop to other shop for buying things because it is stressful and time consuming. So, if any retailer providing such opportunities with varieties of products with good quality even if it is far from my home, I prefer to go there. (I6)

Gradually, the interviewer then asked about the branding efforts of the retailers through online advertisement and followed up with questions related to blockchain-enabled advertising system which offers advertisement without the involvement of intermediaries like, Google and Facebook, also offer a secure and reliable source of advertisement directly from the authorized retailer. Almost all the participants showed their dissatisfaction in online push advertisement through pop/up adverts or email advert which they find annoying and hold a negative impression for those retailers who pushed advertisement frequently.

"I feel like my privacy is being invaded. I do not feel safe because some adverts are sent by hackers who just want to use your personal information for their gain." (I2)

"I found it pretty annoying, but I understand that most of websites out there need ads to survive." (I5)

"Actually, in internet you are never safe. I had such experience where if you click in some advertisement it takes you to some really bad webpages which I hate and also I feel that this can hack my computer. So, I try to avoid such advertisements." (I6)

"I find them not useful and irrelevant sometimes. And try to ignore and avoid those advertisements." (I7)

For blockchain-enabled advertising system, the responses were mixed. Some showed quite an interest in the targeted advertising system and the rewarding policy while others showed concern and suspicion for such activities. But almost all the participants expressed if that verified advertisement comes from the brand they know, there is a high possibility that they will give attention to those advertisements and will participate in the rewarding system as well.

> *"May be a good idea but if it is a very renowned brand and if I know that brand... Maybe I will click to see the offers if the advertising is coming from a renowned and knowing brand." (I2)*

> *"Even though you specified that it is from a verified site, the first thought is fear. So, it would be not probable that I click on it. When I get rewarded, I feel like it can be a honey trap. It makes me feel unsafe, even if it is from a verified site. As they say: no one get nothing for nothing!" (I4)*

> *Good luck with that! Facebook ads and Google ads are the standard platform for advertising! And if you think about newsletters and so on, most of the people out there use Gmail as main email account, so I think they rather prefer trusting big companies such as Facebook and Google instead of little unknown realities. And about the rewarding system, it depends by the entity of the reward. If its about discounts, I might be interested." (I5)*

> *"If the advertisement is from some brands whom I am familiar with, I might like it. But without google and Facebook? I have no idea! We became used to see advertisement using this platform, so I trust those media. And with the new system, if I get the assurance that it is not stealing my data or hacking my system, then definitely I will share my information with them." (I6)*

> *"That will be great, the instant redirection to the official site will increase customer base and its more user friendly too. Definitely will check the authenticity and transparency of the procedure and then only try to follow up." (I7)*

Then the interviewer asked a few questions about loyalty card which brands issue to retain their customers and for motivating customers to increase purchase frequency. Those questions were then followed by blockchain-enabled loyalty programs which might enable retailers to provide improved and customised loyalty program for ensuring better customer experience. Most of the participants use loyalty card but especially for getting discounts and avail the special offer and few of them expressed the complexity of managing too many loyalty cards from the brands and the problem

of getting offers with a loyalty card for purchasing some products which they do not want which they find negative. But for customised loyalty card with an improved loyalty program, most of the participant showed enough interest which is visible in their comments.

> *"Definitely a very good idea. I will love if I get discounts on the products I need to buy." (I1)*

> *"Of course, if it is customized, there are higher chances I can decide to make it, but right off the bat, I have the idea that a customized card would be very difficult to make for a retailer store." (I4)*

> *"Good idea! If that card can be used to buy my necessary items in discounts offer, then I will love it." (I6)*

> *"What a customer really wants is feeling valued and appreciated. If I get customized offer, I will feel special and will definitely increase my purchase from them and I might tell others as well about this." (I5)*

The interviewer then placed a question about retail brands adopting their digital currency for transactions. The question started with finding their understanding of cryptocurrencies or digital currencies and then followed by asking some related questions through probing to identify their perception of the retail brand's cryptocurrency. Almost all the participants showed a negative impression on this idea and they are happy with the present method of monetary transactions. I2 and I7 showed concern about the governance or the controlling authority for such currency. I4 showed concern for illegal use of crypto currencies because of the anonymity feature of this technology.

> *"Crypto currency is a digital asset that can be used as a means of exchange. It is does not have any government influence for example bitcoins, lite coins while digital currency is a state back currency with legal tender status and can be used as a means of exchange for goods or services. Both crypto currencies and digital currencies use blockchain technology or distributed ledger technology. I will not accept the digital currency because it is not issued by the state and I could easily lose my money [.....]*

> *[....] I would use it if it is issued by the central bank and carries the legal tender status. I would be willing to use a digital currency like central bank digital currency because it is not volatile, and its value is stable." (I2)*

"I have heard about the cryptocurrency, but I do not really have an opinion. I think it could have been used more than it is. I have the feeling it did not get as popular as expected. Unfortunately, if I think of a relatively common use of cryptocurrency, the first though that came to my mind is the deep web and the illegal stuff." (I4)

"The most widely recognized application of blockchain is the Bitcoin cryptocurrency. People who investing on cryptocurrency are being monitored and for common people it's still confusing about the safety and all [.....].

[.....] Nowadays there are many legal confusions regarding such businesses so people will step back initially. When Google introduced this initially it made a huge discussion. And now also there are common people who are confused about Google pay even though its little popular nowadays." (I7)

Then the interviewer moved to the questions related to brand transparency for getting a deep understanding of the perception of the participants by asking their feeling on the information provided by retailers currently. Most of the participants agreed that the retailers are not providing sufficient information and showed a sceptic impression of the data being shared.

"I think companies are nowadays offering a lot that kind of information. Is it only about greenwashing or are they really caring about those issues?" (I3)

"I think they are hiding a lot of information and sometimes I even feel that they are manipulating information to deceit our eyes." (I2)

"No, till now I have not seen any retailer to disclose much information. And in many cases information is not genuine too." (I7)

Upon asking about a blockchain-enabled system which can provide transparent and valuable information about products and services, almost all the participant showed their interest positively and presented the probability to foster a better perception and image for the retail brand with such transparency. They also revealed that they might change the current retailer and moved to the retailer with more transparency.

"I will look at them as transparent because they care to let us know about the whole process of how the products reach the final consumer." (I2)

"I would choose this retail shop over another with fewer information." (I4)

"Product origin details really matters and for food or such services the transportation also. Such retailers will get more reach and will be retain more customers, I think." (I7)

7.2 Enhancing customer experience and strengthening retail brand/customer relationship through blockchain

As the first segment of questioning concluded, the interviewer gradually headed towards investigating the possible ways to enhance customer's experience with a retailer and to strengthen their relationship with the retailer. The interviewer started the questioning by asking the participants what could be done from retailers' side to enhance their shopping experience. This part of the discussion took a long time as all the participants were responsive to this question. According to the participants, companies can make the situation far better if they want to do so. It seemed from the participants' responses that they considered that the retailer provides more genuine information about their product so that it becomes easier for the customer to choose a sustainable option. The participants added that giving consumers proper access to enough information is in the hand of the retail organization. Furthermore, the participants opined that companies could improve their service by ensuring more availability of good quality products, setting the price in an affordable stage, offer more discounts etc.

"I can make an informed decision. Depending on the information I get, I am happy to buy that product, or I have enough details to decide to avoid that other product." (I4)

"[……] First and foremost, giving consumers access to adequate information. The labelling and packing should be done appropriately." (I7)

"All we expect from them is transparency! Transparency in production, distribution, I mean, I want to know about whole manufacturing and supply chain system. Clear information on the product's label. That's it." (I5)

To get a solid view, the interviewer then asked the participants about a retail brand with information transparency. All the participants seemed happy and expressed a positive feeling. Participants' added that the transparent system will influence their purchasing decision and will increase trust for that brand. Some also added their concern that transparency should not be manipulative.

"I will be able to make my purchase decision more responsibly but still it depends on the authenticity of those information. How I will know that that information is not just for eye washing." (I6)

"[……] but still such details of course improve the impression and will increase purchases frequency and will get more trust." (I7)

"I usually read the label of the products and try to learn about the products before I make a purchase. Therefore, if I get valuable information it will be easier for me to make purchase decision. For example, as a Muslim I prefer to buy halal meat. If I get to know how and where the meat was processed, it will help me for buying meat or not. I will definitely love that retailer who provide me such information." (I1)

"It is important for me to be aware of the origin. Sometimes I find it too superimposed that reminds me of greenwashing (if the company is highlighting it too much).

[……] If I get authentic information about the origin of the product, I will be able to play more decisive role while purchasing and my trust will increase." (I3)

Then the interviewer asked some follow-up question about their concern on product authenticity, sustainability, and fair-trade issues. All the participants expressed their concern about sustainability and product authenticity which was quite visible. They were also asked about their concern for food safety and perception about organic food. Most of the participants' opined that they prefer organic food but due to lack of evidence about the organicity about the product they usually do not buy organic food. Some also expressed their concern for the high price of that organic food which they either can't afford, or they feel it is just a marketing gimmick.

"If it were possible to buy anything at the same price, I would always buy eco-friendly and fair-trade products. In the real world, I choose from the cheaper options the one eco-friendlier and if possible fair-trade products". (I3)

"Yeah, I am pretty concern about these but sometimes we have no choice and become used to the way we buy our things because there is no exception available. Unfortunately, due to the lack of information I can't keep those ideas while I buy products. And also, usually the products labelled with these concept cost higher." (I5)

"When I see a product labelled organic, all I think of is lies because they are just marketing the products. As long as you are not the person that grew the plant then it's not organic". (I2)

"Yes, I always prefer to buy organic food but those are costly and as I am a student, I can't afford that and also, I do not know if those are really organic or not." (I1)

"For me product authenticity depends on the country. I know some countries has strict protocols, so if I see a label like that, I know I can trust. Some other places have fewer restrictions, and in that case, I would not buy these products, as I would regard it as a honey trap." (I4)

The interviewer then moved to the questions regarding data sharing tendency of the participants. Every organization seek information about their customers to improve their branding programs and attract more customers towards them. All the participants told that they are not willing to share their information with anybody and they shared their fear being in online because marketers nowadays perform many unethical activities to gain their data which create a negative perception towards them. However, they might get interested to share their data if the protection of their data is being ensured.

"I do not like sharing my data with retailers so I will not be in support of them storing my data because it could fall into the wrong hands. Technology has proved to be a big threat to information." (I2)

"I think it is normal nowadays that retailers know my purchasing history when using for instance loyalty cards. I am willing to share that kind of data. But if the information too personal information about me and my family then I will not share anything." (I3)

"I am not very willing to share information, or rather, it depends on the kind of data I am requested to share: as for my data and my purchase behaviour, it is something that does not bother me at all." (I4)

"I do not agree to share any information about me but if it can ensure data protection and not selling my information to others then maybe I can think about it." (I1)

"If I have such system that will ensure the protection of my data, I will feel safe and happy, but the management and protection policies should be revealed and reviewed." (I7)

While asking them about blockchain-enabled secure data management system where they can avail compensation for the information they will share, the participants' showed some interest but some still showed concern for the very personal information. Only I4 expressed that the compensation from the information will give a sense of suspicion.

Additionally, All the participants asked to have more control over their data and if they get such facilities from the retailers, they expressed that it will create a positive impression and increase their trust on that retailer.

> *"I will not share any personal information or information about me buying any intimate products or alcohol. If it is just the general purchasing information like groceries then yes, I will share.*
>
> *[……] even if I am getting compensation, I will not share any too personal or intimate information. If it is something general, then I will share." (I1)*
>
> *"Well I think that would be okay only if the system works follows the General Data Protection Regulation (GDPR) which ensures consumer data protection and privacy [……].*
>
> *[……] depends what kind f information you are giving out. If it is sensitive, then it is not worth the money." (I2)*
>
> *"[……] I think it might work. And, we already share our data, so, I will not mind." (I5)*
>
> *"Well, maybe I can think then but depends on what type of information they want me to share." (I7)*

After that, the interviewer asked the participants to share their experiences regarding warranty issues. Few participants shared that they didn't face any significant issue regarding warranty claim. However, most of the participants showed their annoying expression for keeping the sales receipts safely for claiming warranty. They find this very difficult when they purchase a different product from a different store and upon losing the receipts, they failed to claim warranty for those products. Then the interviewer introduced about blockchain-enabled warranty system using smart contracts where users or customers do not need receipts for claiming warranty. They

can access it through the blockchain app or with their unique ID stored in the retailer's database. And most of the participants shared that they will be happy with such a warranty management system.

> *"I had no problem in claiming if I have the sales receipt. But if I lost it then I can't get any claim." (I6)*

> *"A receipt is very important for claiming a warranty, if you lost it then you will be in trouble. You can forget about getting anything." (I2)*

> *"I would be totally happy if I do not need to have the headache of keeping the receipts safely. And also, because of this much less paper will be wasted, and an easier and more practical solution for the customers." (I4)*

7.3 Empirically validated conceptual framework

The following model/framework extends and enhances the initial conceptual framework presented previously by incorporating all the possible constructs and sub-components. The model builds on the theoretical discussion of this thesis and has been further developed based on the participants' responses in interviews sessions. The model represents customers' perspective of how the unique attributes of blockchain technology can add value to the retailers' branding efforts and enhance the customer experience and strengthen the retail brand-customer relationship and can result in increased customer loyalty and enhanced brand equity. The model was attributed with (-), (+) and (++) signs to picturise the findings from the interview sessions. Based on the participants' contribution to the discussion and upon considering their perspective, the model was revised and change few factors in retail branding efforts and in the role of enhancing customer experiences and strengthening the retail brand-customer relationship.

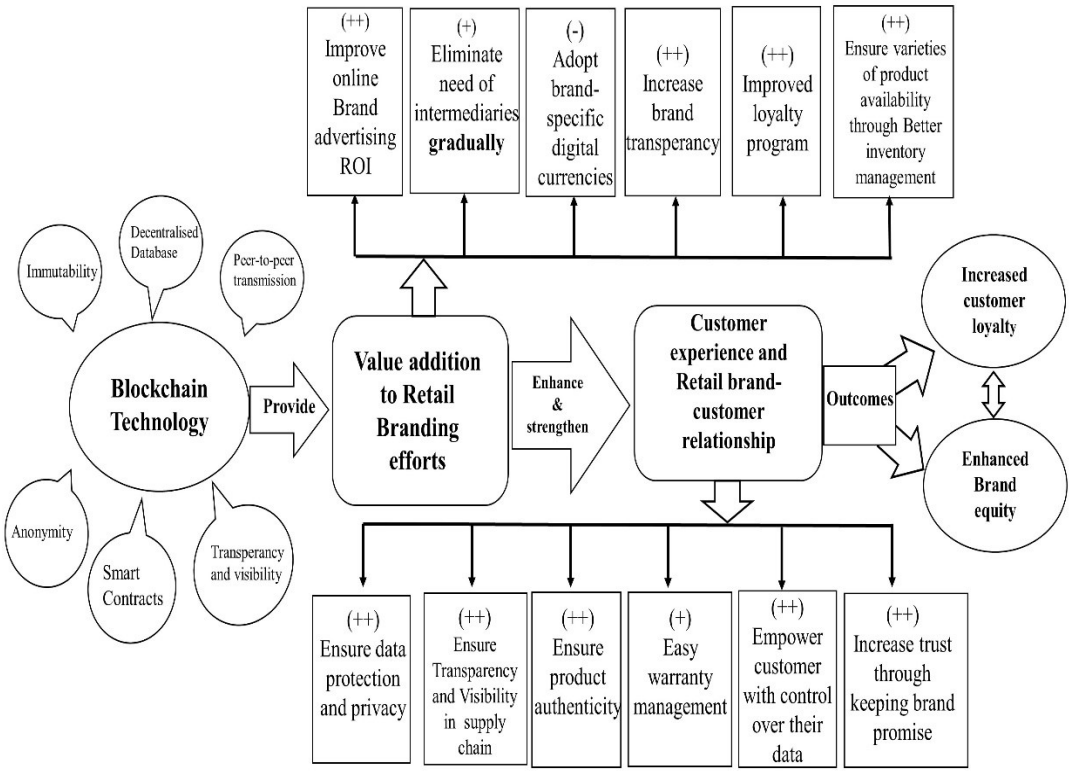

Figure 8: The empirically validated conceptual framework for adding value to retail branding efforts and enhancing customer experience and strengthening retail brand-customer relationship through implementation of Blockchain technology

In the empirically validated framework, the boxes with (-) sign represent that this factor was negatively perceived by the participants and retailer should not implement this practice immediately. There is only one factor, brand-specific digital currency, which gained a negative response from the participants and it can be proved to be a threat for the retailers' brand image. But maybe through enough educating the customer about this currency can eliminate this negative impression gradually. The factors with (+) sign represent that not all participants were agreed with this term. Few participants showed different interest. In the value addition part, only one factor, Elimination the need of intermediaries got this plus sign because whereas some participants agreed on the effectiveness or benefits of direct advertising from the retailers, some put questions and showed concern of getting advertisement without any intermediaries. They expressed their suspicion on the possibility of doing that. All the other factors attributed with (++) sign depicts that, all the participants emphasize on these factors.

This validated framework has a new element in the value addition part which is an assurance of varieties of product availability through better inventory management. All the participants addressed that they choose retailers based on how much variety they can offer and on product availability. For ensuring this, blockchain-enabled inventory management has the potentiality to maintain an error-free and timely inventory management with the tracking system for eliminating counterfeit products to inject in the system.

The lower part of the framework presents the factors representing the role of blockchain in enhancing customer relationship and strengthening the retail brand-customer relationship. Participants mostly emphasized on the transparency and the delivery of adequate authentic information about the product and services. Moreover, they stressed on maintain their privacy and the protection of their data and demanded to gain more control over their data. If the brands can keep their promise through ensuring this, the trust for that brand will be skyrocketed. Thus, the factors with (++) sign represent the participants' expectation from a brand. The factors were slightly modified based on their perspective. The only factors with (+) sign are related to the warranty management because few participants expressed that they are happy with the current system as long as they have the documents while other expressed the

complexity of containing too many documents for availing warranty and asked for an automated system without receipts.

7.4 Discussion

In this section, the findings from primary research would be connected to the theoretical discussion, and the theoretical synthesizing model (the amended conceptual framework of the thesis) presented in the literature review section of this thesis. The structure of this section and all the subheads are indistinguishable to the findings chapter of this thesis.

7.4.1 Value addition through blockchain technology in retail branding efforts

The participants' responses in the first segment of the questioning session proved that they are well-known with Blockchain technology. They also showed their concern for blockchain technology being used in retail brand management and added that it might not get the popularity at first but gradually maybe it will bring success to the retailers. They opined that they consider few factors, such as availability of the product, availability of a wide range of option products, reliability of the products, quality, price and location before choosing a store to make a purchase (Wahl, 1992 via Laine 2014). While asking about the online push advertisement, all the participants expressed negative perception about those push adverts from the retailers. However, some of the participants deliver their interest in the target advertising policy facilitated by blockchain technology and the compensation mechanism (Boukis, 2019; Tan, 2019) where the participants will be willing to receive and click on the advertisement which can be proved to be a very useful attempt for the retail branding to improve their advertisement ROI (Boukis, 2019). Consequently, the elimination of the intermediaries (Iansiti & Lakhani, 2017; Ksetri & Voas, 2019 via Boukis, 2019) like Facebook and Google, they expressed that sudden elimination may raise suspicion as all the people became used to get advertisement via these intermediaries and few participants trust these intermediaries. Thus, the elimination process of intermediaries for advertisement can be implemented through step by step gradually (Mougayar,

2016) through building trust on the direct advertisement published from the verified retailers not radically, as every new thing take time to get acceptance.

Participants claimed that they use loyalty card for availing discounts or special offer and sometimes to get some rebate from the points accumulated through their purchase. Most of the participants are enough interested and delight to use customised loyalty cards based on their needs. They added that stores do not necessarily always give offers or discounts for every product they need and sometimes they see offers for products which they do not need and thus, cannot avail that discount and their loyalty card become un-useful (Wendlandt & Schrader, 2007). Retailers can take advantage of these customise loyalty cards to provide improved loyalty programs for engaging and retaining more customers (Boukis, 2019).

All the participants agree that they are not ready for the retail brands' digital currency or cryptocurrency for use in transactions. Bitcoin is in the market for a few years now, but it didn't get enough popularity because of the trust, authority and volatility issue (Kwok & Koh, 2018 via Boukis 2019) and thus issuing brands' cryptocurrencies can result in failure (Pieters & Vivanco, 2017) and impact on the brand's image due to the negative perception of the customers. All the participant emphasised on brand transparency (Boukis, 2019) through revealing enough information about their products and the supply chain (Kshetri, 2018; Francisco & Swanson, 2018) of the products for the assurance of quality and authenticity of the product as well to meet the sustainability concerns and prove the social responsibilities. This transparency has the potentiality to build trust among customers (Bengtsson et al., 2010) for the brand and converting them to loyal customers and can also attract new customers.

7.4.2 Enhancing customer experience and strengthening retail brand/customer relationship through blockchain

Tan (2019) argued that blockchain has a huge potentiality in increasing customers' experience through ensuring transparency for the products they buy or intends to buy. Customers can easily check authentic information about the product and can track the supply chain in a few seconds just by scanning the item. Most of the participants

emphasize on their expectation of adequate and authentic information from the retailer. They desired that the retailers should ensure transparency to improve their service and attract more customers. They also highlighted that information transparency has the ability to gain their trust and loyalty toward the retail brand. The effect of the absence of adequate information was quite evident in their purchasing decision on organic food. They agreed that that want to make the sustainable choice and try to move towards organic food, but lack of information and susceptibility hinder their decision-making process and they carry on with their usual behaviour.

Additionally, they put emphasis on the high price of organic food or sustainable products which is also refraining themselves from buying sustainably. However, some respondents expressed that they are ready to buy organic or sustainable products if the retailers can ensure the originality of the product and the high price is worth it.

Customers' data is very crucial for any business organization and to maintain and preserving the privacy of the customer data became and challenging task for the firms (Wu et al., 2012; Plangger & Watson, 2015 via Boukis, 2019). Martin et al. (2017) argued that if a firm fails to ensure the data protection of its customers, it will decrease the trust of the customer over the brand. All the participants also showed their concern about the protection of their data which discourages from sharing their data with the retailer and any other business firms. (Lee & Pilkington, 2017) addressed that blockchain technology can be leveraged for ensuring the protection of personal data, diminish data vulnerability and allow the customer to gain more control over their data and manage it on their own preferences. The participants demanded more control over their data and if it is ensured by the retailers, they are willing to share their behavioural data about their purchases. However, few participants still showed an unwillingness to share too personal or private information with the retailers. Most of the participants also showed positive impression toward the power of monetizing their personal data (Lee, 2017). At the verge of the interview session, the participants also showed interest in automated warranty management system without keeping the receipts for claiming warranty through the use of smart contracts.

8 CONCLUSION

This chapter presents the summarized answers of the two sub-research questions based on the findings of the study. Furthermore, this chapter will discuss managerial implications and theoretical contributions of the thesis. Readers can also know about the limitations and evaluation of the research. Finally, suggestions for future research avenues are presented.

8.1 Summary of Results

Sub-RQ-1: How the adoption of blockchain technology by retailers add value to their branding efforts?

All the business organization, as well as the retailers, are involved in activities for developing a brand and thrives to improve the brand image in the aim of gaining more loyal customer and ensure more reach to enhance their brand equity. The study was focused on examining the scope of blockchain technology in the retail sector and providing some guidelines for the retailers to improve their branding efforts for gaining a more positive image. Through the discussion in the interview and from the literature review by different scholars, it was found that the unique attributes of blockchain technology have significant potentiality in improving retails pursuit of branding. The adoption of blockchain technology could increase the effectiveness and efficiency of their activities to a large extent.

Through the implementation of the blockchain-enabled inventory management system, a retailer can ensure enough product availability with a great variation which is an important factor for attracting customers to the store and fostering a positive image for the brand. The direct advertisement through blockchain also has potentiality in gaining customer attraction as the customer will only receive advertising based on their preference and also get compensation. This system will also help the brand to target customer with more accuracy and might substantially increase the ROI of the advertisement expenses. However, the elimination of the intermediaries for advertising placement might not be possible immediately but in the long run, the retail brands would be able to reduce the cost of intermediaries to a great extent.

Through the blockchain-enabled trackable supply chain, the retail brand would be able to ensure transparency and provide more accurate and details information about the products and services. This transparency would be a great factor for improving and strengthening the brand image through differentiation. Last but not the least value addition can be done through an improved loyalty program. Blockchain-enabled loyalty programmes providing customers with the facility to monetize loyalty points and allow various redemption option which would most likely motivate more consumers to participate in these types of loyalty programs backed by blockchain technology and increase the possibility of being the more frequent buyer.

Sub-RQ-2: What role(s) will the implementation of blockchain technology play in enhancing and strengthening retail-customer brand relationship and experience?

From the discussion of the participants in the interview session, the interviewer got some key points from the customers perspective and their expectation from the retailers to enhance their shopping experience with the retail brand and to strengthen their relationship with the retail brand. First and foremost, the participants asked for more transparency and adequate information from the brands about their offerings. This transparency and information adequacy can be achieved through the implementation of the blockchain technology in the brands' supply chain which will enable the customer to check and verify the information and claim about the products and certainly increase their trust and improve their experience as that information will be helpful for them to make a purchase decision in a right way.

Additionally, the more the brands could prove the authenticity of the product, the more they would gain the trust of the customers and would compel the customer to perceive that brand positively. Through the implementation of blockchain technology, the retail brands will be able to track their supply chain and can avoid counterfeit products to inject with their supplies which will reduce the cost of the brand as well as ensure the quality of the product. Through this, the brands will be able to keep their promise of providing the best quality and authentic product delivery to the customers and will raise the trust towards the brand and will result in improved brand equity.

Participants also emphasize the privacy and data protection of the customer and require enough control over data which blockchain-enabled system can easily ensure because of its inherent characteristics. In the digital world, people are more afraid of losing their data and the invasion of their privacy. Thus, by confirming data protection and empowering them with control over their data might result in increasing trust and willingness to share more behavioural data for the brand, retail brands can achieve a positive image in the mind of the customers which can convert into loyalty over time. By answering the two questions above, the main research question can be answered clearly.

"Does the implementation of blockchain technology by retailers having a meaningful impact on customers in adding value to retailers' branding efforts and for enhancing customer experience and retail-brand customer relationship?"

Yes, the findings of this research indicate that customer perceives that there are substantial potentialities of blockchain technology that can enhance their experiences with the retail brand and may lead to foster a positive image for the retail brand and their offerings. Thus, it can be concluded that the implementation of blockchain technology has ample potentiality for retailers in their promotional and branding activities for improving their branding efforts for acquiring a more positive brand image. Moreover, leveraging this technology have the scope of attaining increased loyalty and enhanced brand equity through enhancement of customer experience and developing a strong brand-customer relationship in the long run.

8.2 Managerial implications

In this study, the researcher identified different factors that will add values to retailers branding efforts. It is hoped by the researcher that retail organisations can use the outcomes of this research to conceptualise and understand how they can use blockchain technologies to build positive brand image, enhance consumer perception and increase customers' trust.

The model represents factors for which the participants expressed positive attitude as well as the negative factor for which the participants expressed a negative attitude. Thus, a manager can take those factors into account while developing their branding strategy through the adoption of blockchain technology.

By implementing blockchain technology, retail organisations will be able to track their supply chain, authenticate product quality, manage supplies procurement processes better and ensure that defective, contraband, and questionable products do not find their ways into their procurement system. By so doing, retail organisations will maintain their credibility by keeping their brand promise of offering only authenticated high-quality products to customers.

Also, by implementing blockchain technology across retail outlets, managers will be able to enhance customer experience and thus strengthen the relationship with the customers by enabling them to check the history and authenticity of the products customer purchased, providing adequate and credible information about products, allowing customers to share and control their data, protecting customer's privacy. These will reduce the rate of customer complaints and will increase customer satisfaction and in the long run, the retail brand will be able to achieve more customer trust.

Furthermore, blockchain offers retail organisations the ability to formulate improved branding strategies. By allowing potential and existing customers to express their views, interests and desires for authenticated quality products, retail organisations will gain access to more reliable information that will be useful in formulating more effective branding strategies.

The implementation of blockchain technology by retail organisations will not only benefit retailers by ensuring seamless procurement processes of authenticated high quality products, it will also bequeath their customers the opportunity to check the history, origin, authenticity, safety, age and environmental sustainability of products they are evaluating for purchase. Also, because blockchain technology offers customers full control of their procurement data and privacy, the relationships between retail organisations that adopt blockchain technology and their customers will be greatly enhanced.

8.3 Theoretical Contribution

Far and beyond providing a deep understanding of relevant theories on blockchain technology, such as its mechanism (Corsby et al., 2016), its applications in business and marketing (Harvey et al, 2018; Reiff, 2020), this thesis also provides some measures of insight into understanding how the concept blockchain adds value to branding in general and its impact on strategic retail brand management.

By combining knowledge gained from existing literature on the phenomenon of this study and empirically validated research questions, this research add value to the theories of brand equity (Aaker, 1991) and brand loyalty (Dick & Basu, 1994), by postulating that retail organisations that adopt blockchain technology will gain better customer-experience, higher trust, improved brand loyalty and ultimately, enhanced brand equity.

Also, this thesis adds value to existing literature on marketing communication (Kusumawati et al., 2014) and promotion (Kotler & Keller, 2009; Kotler & Armstrong, 2016), by revealing that blockchain technology can be used to track advertisement placements and reach. Thus, help retail organisations to be more effective and efficient in their marketing communication.

In addition to the above, by proving that the implementation of blockchain technology will help retailers to ensure product authenticity, supply chain visibility, credibility of product information and protection of customer data, the empirically validated framework of this thesis contributes to the theory of customer experience and customer

relationship management (Buttle & Maklan, 2019). This framework can also be used for branding by implementing blockchain technology in other industries with few adjustments.

Furthermore, this thesis reveals that Generation Y has improved knowledge base and higher concerns about sustainability, the authenticity of the products and adequate genuine information about their purchases. This result of the study could be served as a basis for further researches with different sample-sets and in the different academic-research environment.

8.4 Evaluation of the Study

The evaluation of the study can be done through the analysis of the study from three perspectives: generalizability, reliability, and validity.

When the conclusions of the research can be generalized based on the target sample to the rest of the other people in society, then the research achieves generalizability (Smith, 2018). The usual purpose of any qualitative study is delivering in-depth explanation instead of generalizing the findings (Carminati, 2018). The conclusions of this study have been drawn based on the target population and thus the outcomes of this thesis are not generalizable. Furthermore, the thesis adopted a qualitative approach with very small sample size and based on a targeted sample from different nationalities. All these factors are against the principles of generalizability and thus the result cannot be generalized for the rest of the population. The outcomes of the study drawn based on a specific industry, retail industry, which might vary in a different industry setting and therefore, cannot be generalized.

The reliability of research represents the fact that the research would generate consistent outcomes each time if conducted again by other researchers (Golafshani, 2003) which means the constant repeatability of the research. The target population of this thesis comprises service holders and students from different nationalities and all of them are well-educated. If the research would be conducted with different sample sets, it might come up with different outcomes. For instance, if the same research is performed with older generations, the outcomes would be completely different.

Similarly, the same results would not be attained if the target population is selected from a specific country. Thus, the reliability of this research is uncertain.

Validity refers to the accuracy of research and realities of participants' responses in a social context (Creswell & Miller, 2000). According to Golafshani (2003), validity evaluates then the accuracy of the research and measures if the research served its initial purposes. This thesis followed valid methods for collecting, analysing, and interpreting data in a real-world setting. The readers can observe a connection between literature reviews, conceptual framework, analyses, and results of the study. The outcomes of the thesis have been vindicated by literature review and participants' real responses which also stipulate that the thesis has justified its purpose. Therefore, it can be concluded that the research is valid.

8.5 Limitations

The research topic is quite broad and aims to cover two-fold objectives; the value addition in retail branding through the adoption of blockchain technology and roles of blockchain technology in enhancing customer experiences and strengthening the retail brand-customer relationship. As the research topic is broad and extensive, the findings and analyses do not cover each identified factor deeply and thoroughly which is obviously a limitation of the study. Considering the research model, it determines few values that can be added to retail branding still, there is a possibility that there may exist additional factors as the unique characteristics of blockchain technology is evolving and creating new avenues for the businesses and the brands. Furthermore, the outcomes of this research are drawn based on the target population and cannot be generalized to other consumers because consumer perception, behaviour and psychology vary a lot person to person.

All the participants took part in the interview are mostly service holder or student and all of them are well educated. The education level of the participants may generate biased outcomes. The participants are not experts, and they are not much knowledgeable about many technical terms which could be useful if a representative from the retail organization can be interviewed. Hence, they could not generate

profound, and knowledge-based discussions rather they just shared their general view about the use of this technology in retail.

Another important limitation was lack of scientific articles by the scholars on the subject matter because of which the researcher had to rely on web-blogs, new-articles, web-articles etc. for theoretical contribution.

8.6 Future Research Suggestions

As illustrated earlier, the prior researches are mostly focused on blockchain technology for the financial industry, marketing, and branding on how blockchain can leverage marketing and branding. But there was no study found on blockchain technology for retail branding purpose. This thesis identifies multiple values that can be added to retail branding through the adoption of blockchain technology. Future researches should devote their research-attention in studying the values more deeply to investigate the real effectiveness of those value individually. Also, an attempt to explore more value to the retail branding as the unique attributes of the blockchain technology opening new doors constantly for different business and industry. This study also found some factors for enhancing customer experience which can be investigated further in a more specific context, for example, fashion retailer, beauty care retailer or grocery retailer.

To generalize the finding of this thesis, future research attempts could be made to quantify each factor identified in the research model of this thesis. Another interesting approach would be to test the model developed in this thesis with a different target population and in different research-setting. This study considers consumers' perspective, and the target population comprises of consumers of the retail industry. A research avenue is still open for future researchers to consider retail companies' perspective and to select the target population from the retail industry's professionals.

REFERENCES

Aaker, D. A. (1991). *Managing brand Equity.* Free press.

Adler, P.A., & Adler, P. (2012). Keynote address tales from the field: Reflections on four decades of ethnography. *Qualitative Sociology Review*, 8(1), 10-32.

Aguirre, E., Mahr, D., Grewal, D., de Ruyter, K. and Wetzels, M. (2015), "Unraveling the personalization paradox: The effect of information collection and trust-building strategies on online advertisement effectiveness", *Journal of Retailing*, Vol. 91 No. 1, pp. 34-49.

Aich, S., Chakraborty, S., Sain, M., Lee, H. I., & Kim, H. C. (2019, February). A review on benefits of IoT integrated Blockchain based supply chain management implementations across different sectors with case study. In 2019 21st International Conference on Advanced Communication Technology (ICACT) (pp. 138-141). *IEEE.*

Amazon. (2020). *Amazon Managed Blockchain*. Amazon web services, Inc. Available at: https://aws.amazon.com/managed-blockchain/. Cited on 21.04.2020.

Anwar, A., Gulzar, A., Sohail, F.B. & Akram, S.N., 2011. Impact of Brand Image, Trust and Affect on Consumer Brand Extension Attitude: The Mediating Role of Brand Loyalty, 1(5), *International Journal of Economics and Management Sciences.* pp.73-79.

Atkinson, P., & Delamont, S. (Eds.). (2010). *Qualitative Research Methods*. Sage.

Bajpai, N. (2011) "*Business Research Methods*" Pearson Education, India

Basden, J. and Cottrell, M. (2017), "How utilities are using blockchain to modernize the grid", *Harvard Business Review*, Vol. 3.

Baumann, C., Hamin, H. and Chong, A. (2015), "The role of brand exposure and experience on brand recall—Product durables vis-à-vis FMCG", *Journal of Retailing and Consumer Services*, Vol. 23 No. 4, pp. 21-31.

Becerra, E.P. and Korgaonkar, P.K. (2011), "Effects of trust beliefs on consumers" online intentions", *European Journal of Marketing*, Vol. 45 No. 6, pp. 936-962.

Bengtsson, A., Bardhi, F. and Venkatraman, M. (2010), "How global brands travel with consumers: An examination of the relationship between brand consistency and meaning across national boundaries", *International Marketing Review*, Vol. 27 No. 5, pp. 519-540.

Bilgihan, A. (2016), "Gen Y customer loyalty in online shopping: An integrated model of trust, user experience and branding" *Computers in Human Behavior*, Vol. 61 No. 1, pp. 103-113.

Bivainiene, L. & Sliburyte, L., 2008. The Brand Image as an Element of Brand Equity. *Social Research*, 2(12), pp.22-31.

Boukis, A. (2019). Exploring the implications of blockchain technology for brand-consumer relationships: A future research agenda. *Journal of Product & Brand Management*. 10.1108/JPBM-03-2018-1780.

Boukis, A. and Christodoulides, G. (2018), "Investigating Key Antecedents and Outcomes of Employee-based Brand Equity", *European Management Review*, Vol. 4 No. 2, pp. 1-15.

Boukis, A. and Magrizos, S. (2018), "Managing brands in the blockchain era", in *Annual Macromarketing Conference proceedings*, Leipzig, Germany, 2018, pp. 2-4.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology,* 3(2), 77-101.

Buttle, F., & Maklan, S. (2019). Customer relationship management: concepts and technologies. *Routledge*.

Carminati, L. (2018). Generalizability in qualitative research: A tale of two traditions. *Qualitative health research*, 28(13), 2094-2101.

Carson, D., Gilmore, A., Perry, C., & Gronhaug, K. (2001). *Qualitative Marketing Research.* London: SAGE Publication.

Casino, F., Dasaklis, T.K. and Patsakis, C. (2018), "A systematic literature review of blockchain-based applications: current status, classification and open issues", *Telematics and Informatics*, Vol. 36, pp. 55-81.

Castaldo, S., Perrini, F., Misani, N. and Tencati, A. (2009), "The missing link between corporate social responsibility and consumer trust: The case of fair trade products", *Journal of Business Ethics*, Vol. 84 No. 1, pp. 1-15.

Cessda, T. (2019). *Qualitative coding*. Available at: https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/3.-Process/Qualitative-coding Cited 3.4.2020

Chatzipanagiotou, K., Veloutsou, C. and Christodoulides, G. (2016), "Decoding the complexity of the consumer-based brand equity process", *Journal of Business Research*, Vol. 69 No. 11, pp. 5479-5486.

Chetty, P. (2016). Importance of research approach in a research. Available at: <https://www.projectguru.in/publications/selecting-research-approach-business-studies/> Cited 20.03.2020

Cho, E., 2011. Development of a brand image scale and the impact of lovemarks on brand equity. Graduate Theses and Dissertations.

Chowdhury, M. F. (2015). Coding, sorting and sifting of qualitative data analysis: debates and discussion. *Quality and Quantity*; Dordrecht, 49(3), 1135–1143.

Christodoulides, G. (2009), "Branding in the post-internet era", *Marketing Theory*, Vol. 9 No 1, pp. 141-144.

Clarke, V., Braun, V., & Hayfield, N. (2015*). Thematic analysis. Qualitative psychology: A practical guide to research methods*, 222-248.

Clemons, E.K., Wilson, J., Matt, C., Hess, T., Ren, F., Jin, F. and Koh, N.S. (2016), "Global differences in online shopping behavior: Understanding factors leading to trust", *Journal of Management Information Systems*, Vol. 33 No. 4, pp. 1117-1148.

Cocco, L., Concas, G. and Marchesi, M. (2017), "Using an artificial financial market for studying a cryptocurrency market", *Journal of Economic Interaction and Coordination*, Vol. 12 No. 2, pp. 345-365.

Cognizant. (2017). *Retail: Opening the doors for Blockchain.* Cognizant reports. Available at <https://www.cognizant.com/whitepapers/retail-opening-the-doors-to-blockchain-codex2879.pdf> Cited 21.04.2020

Co-Op, T. S. (2018). Greenwashing: The Secret of the Food Industry. The sustainability co-operative.net Available at: https://thesustainabilitycooperative.net/2017/02/09/greenwashing-the-secret-of-the-food-industry/.

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into practice*, 39(3), 124-130.

Crosby, M., Pattanayak, P., Verma, S. and Kalyanaraman, V. (2016), "Blockchain technology: Beyond bitcoin", *Applied Innovation*, Vol. 2 Iss. 2, pp. 6-10.

Dacko, S.G. (2017), "Enabling smart retail settings via mobile augmented reality shopping apps", *Technological Forecasting and Social Change*, Vol. 124, pp. 243-256.

Delerm, E. (2020) *From trust to truth: leveraging blockchain technology for food traceability,* Carrefour France. Available at: <https://seafood.azureedge.net/4a4477/globalassets/aktuelt/konferansekalender/vedlegg/emmanuel-delerm---carrefour-france.pdf > Cited: 22.04.2020

Delgado-Ballester, E. and Luis Munuera-Alemán, J. (2005). "Does brand trust matter to brand equity?", *Journal of Product and Brand Management*, Vol. 14 No. 3, pp. 187-196.

Dessart, L., Veloutsou, C. and Morgan-Thomas, A. (2015). "Consumer engagement in online brand communities: a social media perspective", *Journal of Product and Brand Management*, Vol. 24 No. 1, pp. 28-42.

Dick, A.S., Basu, K. (1994). Customer loyalty: Toward an integrated conceptual framework. *JAMS* 22, 99–113. https://doi.org/10.1177/0092070394222001

El-Amir, A. M. R. (2004). Retail brand management: towards modelling the grocery retailer brand from an ethnographic perspective. Doctoral Dissertation. University of Stirling, Scotland.

Essamri, A., McKechnie, S. and Winklhofer, H. (2019), "Co-creating corporate brand identity with online brand communities: A managerial perspective", *Journal of Business Research,* Vol. 96 No. 1, pp. 366-375.

Essays, UK. (2018). *Theories and relevant models about branding*. Available at https://www.ukessays.com/essays/marketing/theories-and-relevant-models-about-branding-marketing-essay.php?vref=1. Cited 25.04.2020

Fielding, N. & Thomas, H.: *Qualitative Interviewing.* Chapter 15 in Gilbert, N. & Stoneman, P. (eds.) Researching Social Life (4th ed.). Sage 2016.

Francisco, K. and Swanson, D. (2018), "The supply chain has no clothes: Technology adoption of blockchain for supply chain transparency", *Logistics,* Vol. 2 No. 1, pp. 2.

Frankel, R. M., & Devers, K. (2000). Qualitative research: A consumer's guide. *Education for Health*, 13(1), 113-123.

Fuchs, C. and Diamantopoulos, A. (2010), "Evaluating the effectiveness of brand-positioning strategies from a consumer perspective", *European Journal of Marketing*, Vol. 44 Iss. 11/12, pp. 1763-1786.

Gabriel, D. (2013). *Inductive and deductive approaches to research*. Available at: https://deborahgabriel.com/2013/03/17/inductive-and-deductive-approaches-to-research/. Cited 13 February 2020.

Galliers, R. D. (1993). Research issues in information systems. *Journal of information technology*, 8(2), 92-98.

Gammoh, B.S., Koh, A.C., and Okoroafo, S.C. (2011), "Consumer culture brand positioning strategies: an experimental investigation", *Journal of Product and Brand Management*, Vol. 20 No. 1, pp. 48-57.

Garoia, K (2018). Millenials make more apparel purchases than other generations. Available at: https://www.emarketer.com/content/millennials-make-more-apparel-purchases-than-other-generations. Cited 18.04.200

Ghose, A. (2018), "What blockchain could mean for marketing", *Harvard Business Review*.

Gielens, K. and Steenkamp, J.B.E. (2019), "Branding in the era of digital (dis) intermediation", *International Journal of Research in Marketing*, in press.

Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: interviews and focus groups. *British Dental Journal*, 204(6), 291-295.

Giovanis, A.N. and Athanasopoulou, P. (2018), "Consumer-brand relationships and brand loyalty in technology-mediated services*", Journal of Retailing and Consumer Services*, Vol. 40 No. 2, pp. 287-294.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The qualitative report*, 8(4), 597-606.

Haddadi, H. (2010), "Fighting online click-fraud using bluff ads", ACM SIGCOMM, *Computer Communication Review*, Vol. 40 No. 2, pp. 21-25.

Harvey, C. R., Moorman, C., Toledo, M. (2018). How Blockchain Will Change Marketing As We Know It. *SSRN Electronic Journal*. 10.2139/ssrn.3257511.

Hawlitschek, F., Notheisen, B. and Teubner, T. (2018), "The limits of trust-free systems: A literature review on blockchain technology and trust in the sharing economy", *Electronic Commerce Research and Applications*, Vol. 29, pp. 50-63.

Hayes, A. (2019, May 3). *What You Need to Know About Brand Equity*.. Available at: https://www.investopedia.com/terms/b/brandequity.asp. Cited: 15.05.2020

Higginson, M., Hilal, A., & Yugac, E. (2019). *Blockchain and retail banking: Making the connection.* McKinsey & Company.

Ho, C., Jones, R., King, S., Murray, L., & Spence, C. (2013, May). Multisensory augmented reality in the context of a retail clothing application. In (((ABA))) *Audio Branding Academy Yearbook* 2012/2013 (pp. 167-175). Nomos Verlagsgesellschaft mbH & Co. KG.

Hong, I.B. and Cho, H. (2011), "The impact of consumer trust on attitudinal loyalty and purchase intentions in B2C e-marketplaces: Intermediary trust vs. seller trust", *International Journal of Information Management*, Vol. 31 No. 5, pp. 469-479.

Hox, J. J., & Boeije, H. R. (2005). Data collection, primary versus secondary. *Encyclopedia of Social Measurement*, vol.1, 593-599.

Hu, B., Xie, H., Ma, Y., Wang, J., & Zhang, L. J. (2018, June). A Robust Retail POS System Based on Blockchain and Edge Computing. In International Conference on *Edge Computing* (pp. 99-110). Springer, Cham.

Hughes, A., Park, A., Kietzmann, J. and Archer-Brown, C. (2019), "Beyond Bitcoin: What blockchain and distributed ledger technologies mean for firms", *Business Horizons*, in press.

Iansiti, M. and Lakhani, K.R. (2017), "The truth about blockchain", *Harvard Business Review*, Vol. 95 No. 1, pp. 118-127

Jagati, S. (2019, September 3). Walmart's Foray Into Blockchain, How Is the Technology Used? Available at: https://cointelegraph.com/news/walmarts-foray-into-blockchain-how-is-the-technology-used Cited: 13.04.2020.

Juneja, P. (2020). *Brand image.* MSG Management Study Guide. Available at: https://www.managementstudyguide.com/brand-image.htm. Cited: 12.04.2020

Kang, J. and Hustvedt, G. (2014), "Building trust between consumers and corporations: The role of consumer perceptions of transparency and social responsibility". *Journal of Business Ethics*, Vol. 125 No. 2, pp. 253-265.

Karakaya, F. and Ganim Barnes, N. (2010), "Impact of online reviews of customer care experience on brand or company selection", *Journal of Consumer Marketing*, Vol. 27 No. 5, pp. 447-457.

Keller, K.L. (2017), "Managing the growth trade-off: Challenges and opportunities in luxury branding", In Advances in *Luxury Brand Management* (pp. 179-198). Palgrave Macmillan, Cham.

Keller, KL (2013*). Strategic brand management: Building, measuring, and managing brand equity* (4th edition. Global edition.). Harlow, Essex: Pearson Education.

Kim, A.J. and Johnson, K.K. (2016), "Power of consumers using social media: Examining the influences of brand-related user-generated content on Facebook", *Computers in Human Behavior*, Vol. 58 No. 3, pp. 98-108.

Kohli, C., Suri, R., and Kapoor, A. (2015), "Will social media kill branding?", *Business Horizons*, Vol. 58 No. 1, pp. 35-44.

Kokina, J., Mancha, R. and Pachamanova, D. (2017), "Blockchain: Emergent industry adoption and implications for accounting," *Journal of Emerging Technologies in Accounting,* Vol. 14 No. 2, pp. 91-100.

Komulainen, H., Mainela, T. and Tähtinen, J. (2016), "Intermediary roles in local mobile advertising: Findings from a Finnish study", *Journal of Marketing Communications*, Vol. 22 No. 2, pp. 155-169.

Kosba, A., Miller, A., Shi, E., Wen, Z. and Papamanthou, C. (2016), "Hawk: The blockchain model of cryptography and privacy-preserving smart contracts", In *Security and Privacy* (SP), 2016 IEEE Symposium on pp. 839-858, IEEE.

Kotler, P. & Armstrong, G. (2016). Principles of marketing (Sixteenth edition, global edition.). Harlow: Pearson Education

Kotler, P. & Keller, K. L. (2009). Marketing management (13. ed.). Upper Saddle River (N.J.): Pearson/Prentice Hall.

Kshetri, N. (2018), "Blockchain's roles in meeting key supply chain management objectives". *International Journal of Information Management*, Vol. 39 No. 2, pp. 80-89.

Kshetri, N. and Voas, J. (2019). "Online Advertising Fraud", *Computer*, Vol. 52 No. 1, pp. 58-61.

Kusumawati, R. D., Oswari, T., Utomo, R. B., & Kumar, V. (2014). The Influence of 7P's of Marketing Mix on Buying Intention of Music Product in Indonesia. *Procedia Engineering*, 97, 1765-1771

L Berg, Bruce (2001). *Qualitative research methods for the social sciences*. Boston: Allyn & Bacon, 4th ed., 101-157

Laine, K. (2014). The Factors Influencing the Choice of Grocery Store among Finnish Consumers. Master's Thesis. Metropolia University of Applied Sciences, Helsinki.

Laroche, M., Habibi, M.R. and Richard, M.O. (2013), "To be or not to be in social media: How brand loyalty is affected by social media?", *International Journal of Information Management*, Vol. 33 No. 1, pp. 76-82.

Lee, I. (2017), "Big data: Dimensions, evolution, impacts, and challenges", *Business Horizons,* Vol. 60 No. 3, pp. 293-303.

Lee, J.H. and Pilkington, M. (2017), "How the Blockchain Revolution Will Reshape the Consumer Electronics Industry [Future Directions]", *IEEE Consumer Electronics Magazine,* Vol. 6 No. 3, pp. 19-23.

Lee, S.C., Barker, S. and Kandampully, J. (2003), "Technology, service quality, and customer loyalty in hotels: Australian managerial perspectives", *Managing Service Quality: An International Journal*, Vol. 13 No. 5, pp. 423-432.

Lemon, K.N. and Verhoef, P.C. (2016), "Understanding customer experience throughout the customer journey", *Journal of Marketing*, Vol. 80 No. 6, pp. 69-96.

Lundqvist, A., Liljander, V., Gummerus, J. and Van Riel, A. (2013), "The impact of storytelling on the consumer brand experience: The case of a firm-originated story", *Journal of Brand Management*, Vol. 20 No. 4, pp. 283-297.

Lwin, M., Wirtz, J. and Williams, J.D. (2007), "Consumer online privacy concerns and responses: a power–responsibility equilibrium perspective", *Journal of the Academy of Marketing Science*, Vol. 35 No. 4, pp. 572-585.

Lyons, K. (2016). *Generation Y: A guide to a much-maligned demographic. The Guardian.* Available at: https://www.theguardian.com/world/2016/mar/07/millennials-generation-y-guide-to-much-maligned-demographic. Cited 14.04.2020.

Martin, K.D., Borah, A. and Palmatier, R.W. (2017), "Data privacy: Effects on customer and firm performance", *Journal of Marketing*, Vol. 81 No. 1, pp. 36-58.

Mattila, A.S., and Wirtz, J. (2002), "The impact of knowledge types on the consumer search process: An investigation in the context of credence services", *International Journal of Service Industry Management*, Vol. 13 No. 3, pp. 214-230.

Mattila, J. (2016), "The Blockchain Phenomenon–The Disruptive Potential of Distributed Consensus Architectures", *The Research Institute of the Finnish Economy*, Vol. 38.

Medium. (2018). *How to Apply Blockchain to Supply-Chain Management.* Available at: https://medium.com/applicature/how-to-apply-blockchain-to-supply-chain-mement-8cc673c66c4c. Cited 28.04.2020.

Medium. 2017. *"Blockchain Evolution: from 1.0 to 4.0."* Medium. Available at: medium.com/@UnibrightIO/blockchain-evolution-from-1-0-to-4-0-3fbdbccfc666. Cited 27.04.2020.

Medium. 2018. *"Knowing the Blockchain 1.0, Blockchain 2.0, Blockchain 3.0, and Blockchain 4.0."* Medium. Available at: medium.com/@intervalueproject/todays-blockchain-technology-has-undergone-several-iterations-50e7a0e037e3. Cited 27.04.2020.

Meenaghan, T., 1995. The role of advertising in brand image development. *Journal of Product & Brand Management*, 4(4), pp.23-34.

Melnyk, V. and Bijmolt, T. (2015), "The effects of introducing and terminating loyalty programs", *European Journal of Marketing*, Vol. 49 No. 3/4, pp. 398-419.

Metzger, M.J. (2007), "Making sense of credibility on the Web: Models for evaluating online information and recommendations for future research", *Journal of the Association for Information Science and Technology,* Vol. 58 No. 13, pp. 2078-2091.

Miraz, M. H., Hassan, M. G., & Sharif, K. I. M. (2020). Factors Affecting Implementation of Blockchain in Retail Market in Malaysia. *International Journal of Supply Chain*. Management, 9(1), 385-391.

Montecchi, M., Plangger, K. and Etter, M. (2019), "It"s real, trust me! Establishing supply chain provenance using blockchain", *Business Horizons*, Vol. 62 No. 3, pp. 283-293.

Morkunas, V.J., Paschen, J. and Boon, E. (2019), "How blockchain technologies impact your business model", *Business Horizons*, Vol. 62 No. 3, pp. 295-306.

Mougayar, W. (2016). *"The business blockchain: promise, practice, and application of the next Internet technology",* John Wiley and Sons.

Myers, M.D. (2008). *Qualitative research in business & management*. SAGE Publications.

Neo, P. and Koe, T. (2019). *Trace what matters: Is Blockchain the solution to food safety, quality, and brand reputation?* Foodnavigator-Asia.com. Available at: https://www.foodnavigator-asia.com/Article/2019/03/20/Trace-what-matters-Is-Blockchain-the-solution-to-food-safety-quality-and-brand-reputation. Cited 23.04.2020.

Nofer, M., Gomber, P., Hinz, O. and Schiereck, D. (2017), "Blockchain", *Business and Information Systems Engineering*, Vol. 59 No. 3, pp. 183-187.

Odoom, R. (2016), "Brand marketing programs and consumer loyalty–evidence from mobile phone users in an emerging market", *Journal of Product and Brand Management,* Vol. 25 No. 7, pp. 651-662.

Okazaki, S. and Taylor, C.R. (2013), "Social media and international advertising: theoretical challenges and future directions", *International Marketing Review*, Vol. 30 No. 1, pp. 56-71.

O'Neal, S. (2019*). Blockchain for Food, How the Industry Makes Use of the Technology.* Available at: https://cointelegraph.com/news/blockchain-for-the-food-how-industry-makes-use-of-the-technology. Cited 14.04.2020.

Opatha, Malki. (2015). Definitions of Brand Image. *Journal of Brand Image*.

Patton, M. Q. (2005). *Qualitative research*. Encyclopedia of Statistics in Behavioral Science (eds B. S. Everitt and D. C. Howell).

Pera, R. and Viglia, G. (2016), "Exploring how video digital storytelling builds relationship experiences", *Psychology and Marketing*, Vol. 33 No. 12, pp. 1142-1150.

Petroulas, E., Brown, D., & Sundin, H. (2010). Generational characteristics and their impact on preference for management control systems. *Australian Accounting Review*, 20(3), 221-240.

Pfeiffer, M., and Zinnbauer, M. (2010), "Can Old Media Enhance New Media?: How Traditional Advertising Pays off for an Online Social Network", *Journal of Advertising Research,* Vol. 50 No. 1, pp. 42-49.

Phau, I. and Teah, M. (2009), "Devil wears (counterfeit) Prada: a study of antecedents and outcomes of attitudes towards counterfeits of luxury brands". *Journal of Consumer Marketing,* Vol. 26 No. 1, pp. 15-27.

Pieters, G. and Vivanco, S. (2017), "Financial regulations and price inconsistencies across Bitcoin markets", *Information Economics and Policy*, Vol. 39, pp. 1-14.

Pieters, G. C. and Vivanco, S. (2016). Financial Regulations and Price Inconsistencies across Bitcoin Markets. Available at SSRN: https://ssrn.com/abstract=2576452 or http://dx.doi.org/10.2139/ssrn.2576452'

Pilkington, M. (2016), "11 Blockchain technology: principles and applications", *Research handbook on digital transformations*, pp. 225-231.

Pitti, A. (2018*). Blockchain in retail is change the way we buy*. Express Computer. Available at: https://www.expresscomputer.in/columns/blockchain-in-retail-is-changing-the-way-we-buy/31274/ Cited 12.04.2020.

Polkinghorne, D. E. (2005). Language and meaning: Data collection in qualitative research. *Journal of Counselling Psychology*, 52(2), 137-145.

Rae, D. (2001). *Qualitative Methods in Management Research,* 2nd edition, Evert Gummesson, Sage, London, 2000, 240 pp, ISBN 0-7619-2013-7, ?50.00. Strategic Change, 10(3), 181–182. doi: 10.1002/jsc.512.

Ramaswamy, V. and Ozcan, K. (2016), "Brand value co-creation in a digitalized world: An integrative framework and research implications", *International Journal of Research in Marketing,* Vol. 33 No. 1, pp. 93-106.

Randhawa, P., Calantone, R.J. and Voorhees, C.M. (2015), "The pursuit of counterfeited luxury: An examination of the negative side effects of close consumer–brand connections", *Journal of Business Research*, Vol. 68 No. 11, pp. 2395-2403.

Raphael, R. (2018). *"Blockchain: 4 Ways It Benefits Consumers." Business 2 Community.* Available at: <www.business2community.com/strategy/blockchain-4-ways-benefits-consumers-02018517>. Cited 25.04.2020.

Reiff, N. (2020). *"Blockchain Explained."* Investopedia. Available at: <www.investopedia.com/terms/b/blockchain.asp>. Cited 19.04.2020.

Reiff, N. (2020). *"Blockchain Technology's Three Generations."* Investopedia. Available at: <www.investopedia.com/tech/blockchain-technologys-three-generations/>. Cited 19.04.2020.

Risius, M. and Spohrer, K. (2017), "A blockchain research framework", *Business and Information Systems Engineering*, Vol. 59 No. 6, pp. 385-409.

Sammut-Bonnici, Tanya. (2015). Brand and Branding. *Strategic Management.* Vol.12, https://doi.org/10.1002/9781118785317.weom120161

Saunders, M. N. (2011). *Research methods for business students*, 5/e. Pearson Education India.

Saunders, Mark & Lewis, P. & Thornhill, A.. (2009). Understanding research philosophies and approaches. *Research Methods for Business Students*. 4. 106-135.

Scholz, J. and Duffy, K. (2018), "We Are at home: How augmented reality reshapes mobile marketing and consumer-brand relationships", *Journal of Retailing and Consumer Services,* Vol. 44 Vol. 3, pp. 11-23.

Seebacher, S. and Schüritz, R. (2017), "Blockchain technology as an enabler of service systems: A structured literature review", In International Conference on Exploring Services Science, pp. 12-23. Springer, Cham.

Sharma, A. (2019). *20% of world's top grocery stores will use blockchain for food safety by 2025*. Available at:https://www.thenational.ae/business/technology/20-of-world-s-top-grocery-stores-will-use-blockchain-for-food-safety-by-2025-1.857887. Cited: 29.04.2020

Smith, B. (2018). Generalizability in qualitative research: Misunderstandings, opportunities and recommendations for the sport and exercise sciences. *Qualitative Research in Sport, Exercise and Health*, 10(1), 137-149.

Soppe, A., Schauten, M., Soppe, J. and Kaymak, U. (2011), "Corporate social responsibility reputation (CSRR): do companies comply with their raised CSR expectations?", *Corporate Reputation Review*, Vol. 14 No. 4, pp. 300-323.

Subramanian, H. (2018), "Decentralized blockchain-based electronic marketplaces", *Communications of the ACM*, Vol. 61 No 1, pp.78-84.

Sullivan, P. & Heitmeyer, J. (2008). Looking at Gen Y shopping Preferences and Intentions: Exploring the role of experience and apparel involvement. *International Journal of Consumer Studies*, 32 (3), pp. 285-295. doi: 10.1111 / j.1470-6431.2008.00680.x

Sunny, S. (2018). *Blockchain in Retail: 7 ways blockchain technology benefits the retail sector.* Smartereum. Available at: < https://smartereum.com/39152/blockchain-in-retail-7-ways-blockchain-technology-benefits-the-retail-sector/>. Cited 23.05.2020.

Takyar, A. (2020). *"Blockchain in Retail: Ensuring Product's Authenticity."* Software Development Company, Leewayhertz.com. Available at: <www.leewayhertz.com/blockchain-in-retail/>. Cited 21.04.2020

Tan, T. M. (2019). Brainstorming of Blockchain -based approach in Branding. Class Lecture. Oulu Business School, University of Oulu.

Tanase, G. C., 2011. "An Overview of Retail Branding and Positioning as Marketing Management Concepts. The Advantages of Establishing a Strong Brand Image for Retailers," Romanian Distribution Committee Magazine, *Romanian Distribution Committee*, vol. 2(1), pages 35-39, June.

Tapscott, D. and Tapscott, A. (2016), *"Blockchain revolution: how the technology behind bitcoin is changing money, business, and the world",* Penguin.

Tapscott, D. and Tapscott, A. (2017), "How blockchain will change organizations". *MIT Sloan Management Review*, Vol. 58 No. 2, pp. 10.

Tuunainen, J. (2018). Overview of research process. Available at: https://optima.oulu.fi/learning/id77/bin/user Cited 20 January 2019.

Vansina, L. (1999). Greenwood, Davydd J. and Levin, Morton. 1998. Introduction to Action Research: Social Research for Social Change. Concepts and Transformation. *International Journal of Action Research and Organizational Renewal Concepts and Transformation*, 4(3), 319–328. doi: 10.1075/cat.4.3.06van

Varghese, Blesson & Villari, Massimo & Rana, Omer & James, Philip & Shah, Tejal & Fazio, Maria & Ranjan, R. (2018). Realizing Edge Marketplaces: Challenges and Opportunities. *IEEE Cloud Computing*. 5. 9-20. 10.1109/MCC.2018.064181115.

Veloutsou, C. (2015), "Brand evaluation, satisfaction and trust as predictors of brand loyalty: the mediator-moderator effect of brand relationships", *Journal of Consumer Marketing,* Vol. 32 No. 6, pp. 405-421.

Veloutsou, C. and Guzman, F. (2017). "The evolution of brand management thinking over the last 25 years as recorded in the Journal of Product and Brand Management, *Journal of Product and Brand Management*, Vol. 26 No. 1, pp. 2-12.

Veloutsou, C. and Moutinho, L. (2009), "Brand relationships through brand reputation and brand tribalism", *Journal of Business Research*, Vol. 62 No .3, pp. 314-322.

Wendlandt, M. and Schrader, U. (2007), "Consumer reactance against loyalty programs", *Journal of Consumer Marketing*, Vol. 24 No. 5, pp. 293-304.

Wikipedia. (2020). *Brand*.Wikipedia.Available at: https://en.wikipedia.org/wiki/Brand. Cited 15.04.2020

Wikipedia. (2020). *Supply chain management*. Wikipedia. Available at: https://en.wikipedia.org/wiki/Supply_chain_management. Cited 15.04.2020

Willemse, L. (2019) "*Retail Giants like Walmart, Carrefour and Auchan Adopting Blockchain Technology".* Hacker Noon. Available at: <hackernoon.com/retail-giants-like-walmart-carrefour-and-auchan-adopting-blockchain-technology-3e7a48460e8e> Cited 15.04.2020.

Wilson, J. (2010*). "Essentials of Business Research: A Guide to Doing Your Research Project".* SAGE Publications.

Wu, K.W., Huang, S.Y., Yen, D.C. and Popova, I. (2012), "The effect of online privacy policy on consumer privacy concern and trust", *Computers in Human Behavior*, Vol. 28 No. 3, pp. 889-897.

Zhu, H., & Zhou, Z. Z. (2016). Analysis and outlook of applications of blockchain technology to equity crowdfunding in China. *Financial innovation*, 2(1), 29.

Zyskind, G. and Nathan, O. (2015), "Decentralizing privacy: Using blockchain to protect personal data", In Security and Privacy Workshops (SPW), (May), *IEEE*, pp. 180-184.

APPENDIX

Interview questions

Introduction:

Name:

Age:

Nationality:

Q1a: Will the adoption of blockchain technology by retailers add value to their branding efforts?

1) Are you familiar with Blockchain technology that Bitcoin uses? What is your view of this blockchain technology?
2) What is your opinion on the adoption of blockchain technology by retailers?
3) How often do you go to a retail shop?
4) What are the factors important for you while choosing a retailer?
5) How do you feel about online advertisement pushed from retailers? like, pop up ads, or email ad?
6) What is the probability that you will click those advertisement?
7) Have you ever felt that clicking on an advertisement can take you to some unsafe sites?
8) What do you think about a secure and reliable advertisement directly from the retailers without any intermediaries like Facebook or Google?
9) If you get some reward for adverts clicks, knowing that the advertisements are from verified sites, what are you likely to do?
10) Do you use any loyalty cards? What are the benefits it gives to you?
11) What is your perspective about a customized loyalty card based on your need and want?
12) Do you know about cryptocurrency or digital currency? What is your perspective on that?

13) If you get assurance through a strong system that the digital money is safe to use and reliable, will you use that?
14) If a retailer introduces their own digital currency for customers to use in purchasing products, what will be your perception?
15) What do you think about 'digital wallet' where your loyalty points will be accumulated which you can redeem through purchase?
16) What do feel about getting customized offers from the retailer just for you according to your need?
17) How willing are you to share information with the retailers? Do you like that they store your data and observe your purchase behaviour? Will you feel safe?
18) What do you think about a system which will ensure the protection of your data?
19) If a retailer provides you that protection and security, how likely you will share your information?
20) If you get any compensation for the information you shared, will you be interested?

Q1b: What role(s) do you think the implementation of blockchain technology by retailers play in enhancing and strengthening retail-customer brand relationship and experience?

1) In your view, how will the adoption of blockchain technology by a retailer impact your relationship with the retail outlet?
2) What services you expect from retailers?
3) What do you think retailers should improve on to enhance customer relationship?
4) How much you are concern about the authenticity of a product, sustainability, or about fair trade?
5) Do you prefer to buy organic food? or it does not really matter to you?
6) When you see a product is labelled as green or organic, what comes to your mind?
7) Do you think retailers are providing enough information about their supply chain (for example, product origin, product transportation methods and arrival at the retail outlets)?

8) How will you perceive and relate with a retail shop that provides more information on product origin and product transportation methods?
9) If you get full information about a product, for example, where it was produced, how it was manufactured, how and when it was transported and when it reached the shop, how will that influence your shopping decision?
10) If any retailers give you that full access of information, how it will influence you? Will you switch to that shop?
11) What is your concern about food safety?
12) If you get reliable information through a system will you want to use it?
13) Are you concerned about the environmental sustainability or fair trade? How these concepts effect your buying behaviour?
14) What information will you like to share with others?
15) Are you concerned about how retailers are going to use your data? Do you want to have more control over your data?
16) What will be your perspective or reaction if you get access and have control over your data (for example, you can control what and how much information others can view)?
17) What do you think about getting compensation or extra benefit from the retailers in return of your shared data? Will you be willing to share your data?
18) How do you file for warranty claim? Did you faced any problem for claiming warranty for a product you purchased?
19) What do you think about a retailer provide you a system where you do not need to keep any receipt or document for claiming warranty?

Thank you for your Participation!