



# A conceptual framework to study the attitude of Gen Z towards Blockchain enabled data marketplaces

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## Abstract

Data companies including data brokers, web trackers, advertisers and marketers in collaboration with product sellers, service providers and many other organizations have been swapping, selling and sharing consumer data for some years now. The concern for privacy and security as well as the idea of data propertization have also gained strength accordingly, leading to the demand for self sovereign identity. Distributed Ledger Technology (for e.g. Blockchain) based data marketplace apps claim to make its users the sole owner of their data and the only one with the ability to grant access to it. The users would be empowered to share or even sell their data. The objective of this study is to propose and discuss a conceptual model for understanding the attitude of the Gen Z population towards data privacy, ownership and data sharing, their level of awareness and trust in Blockchain based digital data marketplaces.

**Keywords:** Blockchain, data marketplace, data ownership, consumer data, Gen Z attitude

## 1. Introduction

There is an increasing penetration by technology into people's private and public lives for not only data collection but also for its identification leading to tracking and profiling of the data sources ([Radomirovic, 2010](#)). The value of data is also increasing as the firms use it to better their relationship marketing strategies. As data collection, collation and dissemination seem to happen stealthily in the background, consumer data propertization, protection, privacy have been a hot topic for some time now ([Schwartz, 2004](#)).

One major attraction of the Distributed Ledger Technology based applications such as Blockchain (BC) is the possibility for realizing secure Self-sovereign identity (SSI). Blockchain-based applications are in the works which claim to make the user the sole owner of their data and the only one with the ability to grant access to it. The users would be empowered to share or even sell their data, for example, Facebook activity or Amazon purchases, upon request from interested parties ([Datawallet, n.d.](#); [Datum, n.d.](#))

The objective of this study is to propose and discuss a conceptual model for understanding the attitude of the Gen Z population towards data privacy, ownership and data selling, their level of awareness and trust in blockchain based digital data marketplaces.

## 2. Literature review

Extensive research has been conducted on consumers' attitude towards their own digital consumer data and its protection. Research indicates that data privacy, and its potential use by third parties is a concern of consumers ([Xu et al., 2011](#)). But it was also found that, even while maintaining a positive attitude towards privacy-protection behavior, many customers rarely put into practise any actual protective behavior ([Joinson et al., 2010](#)). The study of the "privacy paradox" ([Acquisti & Grossklags, 2005](#); [Barnes, 2006](#)) has been going on for a long while now. There has also been studies on consumers' willingness to divulge personal information for a suitable incentive, generally in monetary terms ([Acquisti & Grossklags, 2005](#); [Beresford et al., 2012](#))

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Many studies have concluded that generations differ in their basic social values and consuming habits, (Seckin, 2000: 101) as are determined by the environment and values exposed to, during the growing period. Gen Z (Kapil & Roy, 2014), born around 2000, are the youngest adults of the Digital Native (Prensky, 2001) generations - true DNs. Multiple studies infer that Gen Z are more globally aware, pragmatic, socially conscious (McKinsey, 2018). As potential early adopters of technological innovations, they are now the subjects of many industrial research involving personal digital assets and the related marketing ecosystem.

### 1.1. Blockchain based data marketplaces

Distributed Ledger Technology (DLT) based Blockchain technology has been heralded as the “Internet of value”(Swan, 2017). Several firms are focusing their new products/services research on DLT based applications. The selling proposition for retail consumers has been SSI, personal data protection, ownership and power to share/sell personal data.

In recent months, a lot of research has been happening on various aspects of blockchain based data marketplaces - business models, design (Ha et al., 2019), implementation, ethical and legal aspects and impact (Ishmaev, 2019) etc. Blockchain-based data wallet & market place apps have also been launched in the market, in one instance, expecting to attract college students who may use the app to sell data for beer money (Floyd, n.d., 2019). But empirical research focusing on the consumers’ attitude towards selling data in Blockchain based data marketplaces has been limited.

## 3. Proposed Conceptual Model

“Theory of Reasoned Action” developed by Martin Fishbein underlies this model (Ajzen & Fishbein, 1980). As shown in Figure 1, the model proposes that there are various factors which decide a Gen Z person’s willingness to share data on Blockchain based data marketplaces. The factors are based on the characteristics of the technology itself, attitude of consumers towards the process involved and attitude towards aspects of information such as boundaries, utility etc. The influence of awareness about data privacy risks, inherent privacy concerns and trust have been studied in the context of information sharing via technological innovations such as information systems, social networks, internet banking, e-commerce, cloud computing, cryptocurrency markets etc (Belanger et al., 2002; Dahlberg et al., 2003; Lippert & Michael Swiercz, 2005). In this context, technology trust about providing secure data ownership is studied. Perceived fairness of the process or procedural justice - “the way that the outcomes are achieved”(Thibault & Walker, 1975) has been studied in the marketing context for service transactions and so has the effect of perceived control (Hui & Bateson, 1991). In the current context, control is perceived to be greater when one has the option to share (or not) own data when explicitly requested by an organization as opposed to the belief that personal details are likely to be collected somehow, by somebody unknown and used for unknown purposes.

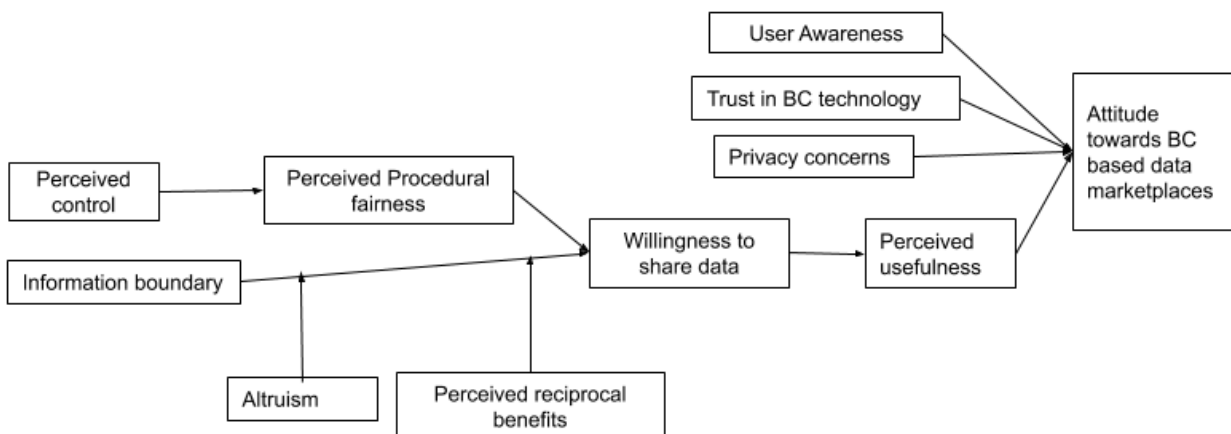


Fig 1: Conceptual Model

The positive impact of Perceived procedural fairness on customer intention and satisfaction has also been studied in different contexts (Carr, 2007; Zhu & Chen, 2012). A (perceived) fair process is expected to

positively influence the willingness to participate. The data marketplace is expected to be relevant and useful only for somebody willing to disclose their own data for a reason.

The nature of information - for example, demographics, location, social media, health, consumer behaviour, web browsing etc will be a factor in the willingness to disclose data and forms the information boundary for an individual. But in certain scenarios the normal boundaries could be extended. For example, the information boundary may be adjusted to disclose unidentified personal health data for a specific clinical trial (altruism). Purchase behaviour data could be shared if special privileges/discounts are promised by a firm (perceived reciprocal benefits). The effects of altruistic behaviour and of perceived reciprocal benefit have been studied in the context of information sharing, especially with the spread of social networks and interorganizational networks (Moghavvemi et al., 2018; Wu et al., 2012)

#### 4. Potential Implications

Gen Z is a powerful consumer segment. In recent years, ICT adoption trends have shown that the younger generations are the earliest adopters, often causing a paradigm shift so that the older generations are forced to adopt. This conceptual model is hoped to serve as a guideline for studies on Gen Z's attitude towards data proprietization in general and specifically in the context of Blockchain based data exchange use cases. For the markets to perform well, there is a need for validated, real data for the sellers (for e.g reviews) and the need for control by the buyers. Blockchain technology is still maturing and data marketplaces are still evolving but data driven decision making will pervade every industry. The governments and industries need to evaluate the benefits of enabling self sovereign identity and obtaining valid information directly from willing sources. It is hoped that studies into what factors encourage willingness to share relevant information will help devise sustainable strategies.

#### 5. Limitations and future research directions

Trust in the vendor organization has not been considered since the market is still maturing with no clear dominant player. Subjective norms and associated social influences will need to be considered by further segregation of Gen Z, for example, on the basis of demographic, education, socio-economic status etc related characteristics. The attitude towards "selling" information for monetary gain may be studied in specific contexts. The constructs proposed for this model need to be empirically validated.

#### 6. Conclusion

Personalized - promotions, purchase options, pricing, services and products have become possible for sellers due to their sophisticated data-driven approaches. A technology that enables people to protect their online data from brokers and sellers and which can further enable them to share information selectively will go a long way in restoring the balance of (information) power between the parties of a transaction - for e.g. the retail buyer and the online seller. Further, availability of real, valid data for the sellers and such information seekers directly from the information sources could remove from the picture, an industry which produces fake online footprints which mislead all other stakeholders (for e.g. paid reviews).

Secure data marketplaces have the potential to disrupt the current relationship marketing - data broking ecosystem, changing business models and roles and replacing traditional institutions. The attitude of Gen Z towards data and trust in Blockchain technology could very well decide the direction in which relationship marketing tactics will evolve.

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