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Exploring Consumer Use of Digital Product Passports for Secondary Luxury Consumption: A Conceptual Study

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Abstract

The purpose of this conceptual paper is to propose a means to investigate the consumer values that influence the adoption of DPPs within the secondary luxury market. Guided by the theory of consumption values, the authors investigate the adoption of DPPs among consumers while considering the influence of conditional, emotional, function, and social values. As this study is conceptual, future research is needed to test the proposed hypotheses constructed. This paper provides a thorough review of DPPs, propose how can the values incorporated in the theory of consumption values apply to the adoption of DPPs within the secondary luxury market, and communicate future research on this phenomenon. The use of DPPs is an excellent investment for brands, as it creates a unique opportunity to address any concerns related to the authenticity of secondary luxury goods while offering unparalleled new customer experiences and marketing innovations. DPPs also encourages a more circular economic model as they support the repurchase of luxury products, enabling more sustainable and responsible practices

Keywords: consumption values, secondary luxury, consumer risks, consumer adoption, circular model

INTRODUCTION

The global secondary luxury market was valued at 33 billion U.S. dollars in 2021. It is estimated that the overall luxury resale market is expected to reach sales of US $47 billion by 2025, representing a compound annual growth rate of 9.6% (Statista Research Department, 2023). Interestingly, the secondary luxury market is growing four times faster than the traditional luxury market (Beauloye, 2023). Four factors are driving the secondary luxury market including: (1) online access to purchasing second-hand luxury items; (2) the consumer desire for environmental sustainability and the focus on a circular economy; (3) popularity of limited collections; and (4) the timeless and durable nature of luxury items (Beauloye, 2023). The secondary luxury market outlook shows increased interest from consumers as resale platforms are developing strategies to position themselves as a sustainable alternative to traditional retail, offer a luxury experience, and change the consumer's attitude on product ownership.

The circular economy is "an economy based on a spiral-loop system that minimizes matter, energy-flow and environmental deterioration without restricting economic growth or social and technical progress" (Stahel, 1982). According to the Ellen Macarthur Foundation (2012), in a circular economy, products cycle through use, maintenance, reuse, redistribution, refurbishment, remanufacturing, and recycling. For products to be able to withstand this closed looped strategy, it must be designed to be durable and of high quality particularly with high service levels and premium pricing (Bocken at el., 2016). Thus, luxury products are a perfect candidate for such economy, particularly secondary the secondary luxury market, as supported by Bundgaard and Huulgaard (2019) who found "luxury products have characteristics of importance in a circular economy. There are clear links between the high price and premium quality and durability of the luxury products and the inner circles (maintenance, reuse, and repair) of the circular economy" (p. 706).

Secondary luxury is defined as luxury products that were previously owned but sold to another consumer through secondary channels (Turunen & Leipamaa-Leskinen, 2015). Furthermore, the secondary luxury market allows for buying and selling of luxury or designer goods through secondary online platforms (Beauloye, 2023). These luxury items can be used by one consumer and then sold for a lesser price (or on some occasions, a higher price) to another consumer through a luxury consignment company (e.g., Fashionphile, Rebag, Vestiaire Collective, The RealReal, The Outnet, Collector Square, and The Luxury Closet) (Beauloye, 2023). Price and product lifecycle are the main differentiators between traditional and secondary luxury items (Cervellon et al., 2012).

Authenticity and history tracking are becoming more important as the resale sector grows, especially for luxury products sold on the secondary market. Authentication in the secondary luxury market is costly (Lazazzera, 2023). The use of product passports has been suggested to ease the operational processes of the secondary luxury market, support the need for authentication, and minimize costs. Product passports, or digital product passports (DPPs), are QR codes or hardware tags (i.e., NFC, RFID, or Bluetooth) that are attached to garments by a label and provide detailed information about the individual product. DPPs provide valuable information that may be of interest to consumers and secondary luxury retailers, including the brand and manufacturing practices, material composition, product care, ownership and repair history, and marketing and pricing guidance (McKinsey, 2022). The primary motivation behind the use of this technology is to assist secondary luxury retailers tackle issues like counterfeiting, transparency, and sustainability, thereby increasing awareness and available information to the secondary luxury retailer and consumer (Guinebault, 2023). Furthermore, DPPs may help with pricing for the secondary market by providing information about previous owners, repair history, and marketing advice (McKinsey, 2022).

DPPs is a digital asset, or an intangible goods that exist in a digital format. Digital assets can include ebooks, music, digital art, software, online courses, and virtual goods in video games. DPPs is a type of non-fungible token (NFT) and is "considered an 'identity card' for each consumer product, printed as a QR code tag (or NFC chip) on each consumer product that can link to online information about the product's supply chain details, provenance, and attest to its authenticity" ("The Digital Future", 2024, para. 3). While NFTs can take many forms, most commonly a true digital product on the blockchain with a unique identifier, DDPs is a digital card that provides information for various products including digital and physical products. For this paper, the DDP will be applied to physical luxury products being sold on the secondary market.

DPPs are support many functions throughout the supply chain and the retail industry (see Figure 1). Specificality for this research, DPPs can support authentication and valuation that will streamline processes that are typically performed manually and are sometimes inaccurate. Furthermore, the use of DPPs may elicit trust and perceptions of good value among consumers (McKinsey, 2022), but it remains to be seen whether consumers will be willing to adopt this technology. The target market of the secondary luxury includes millennial and generation Z consumers who are interested in digital innovation and are digitally savvy (Lissitsa & Kol, 2016) suggesting the potential for success in using DPPs when shopping for second-hand luxury items. However, to date, no research on DPPs themselves or on the intent to adopt this technology has been conducted. Given that DPPs may disrupt the secondary luxury market by providing digital authentication and fostering more trust among consumers of second-hand luxury goods and collectibles, it is imperative that use of DPPs is examined holistically. Therefore, the purpose of this conceptual paper is to propose a means with which to investigate the consumer values that may influence the adoption of DPPs within the secondary luxury market. The following research questions will be addressed:

1. How can DPPs be defined in the secondary luxury industry?
2. How can the values incorporated in the theory of consumption values apply to the adoption of DPPs within the secondary luxury market?
3. What is the future research direction or agenda for future scholars?

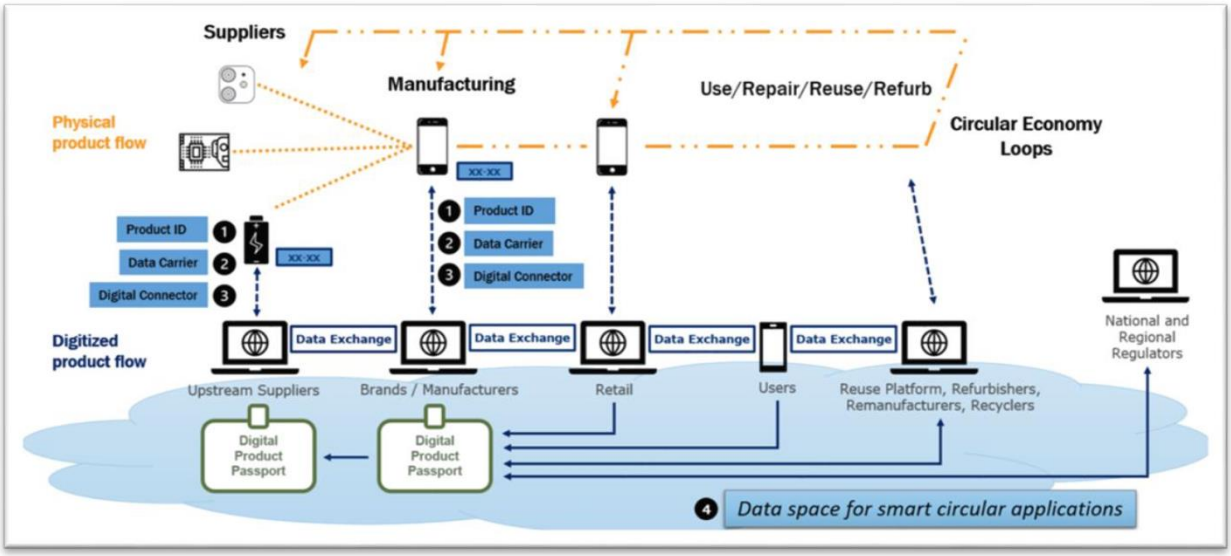

Figure 1. Functions of DPPs.
Source.https://cirpassproject.eu/wp-content/uploads/2023/03/CIRPASS_Benchmark-of-existing-DPP-oriented-reference-architectures.pdf

Academic literature includes literature focusing mainly on NFTs (i.e., Colicev, 2022; Vega and Camarero, 2024; Yilmaz et al., 2023) and a few studies that examine the secondary luxury phenomenon (i.e., Cervellon et al., 2012; Slaton & Pookulangara, 2022b; Turunen et al., 2020; Turunen & Leipamaa-Leskinen, 2015). No past studies have investigated DPPs, a type of NFT, in the secondary luxury industry. Therefore, the study being proposed here may serve as a valuable addition to academic literature. DPP technology is still in its infancy and is rarely used by both retailers and consumers (Guinebault, 2023). However, the use of this digital technology may benefit the secondary luxury market. Therefore, the authors provide a thorough review of DPPs, propose investigating consumer adoption of DPPs guided by the theory of consumption values (Sheth et al., 1991), and communicate future research on this phenomenon. This conceptual paper includes a review of the literature, proposed hypotheses and their justification, proposed study implications, and future research.

LITERATURE REVIEW

Secondary Luxury Fashion

The secondary luxury market is a type of collaborative consumption model or a peer-to-peer commerce and sharing activity that includes trading, renting, or purchasing luxury goods (Chu & Liao, 2007). The advancement of digital platforms and systems for peer-to-peer communications has stimulated growth within the secondary luxury market (Frenken et al., 2015). Secondary luxury consumption has been found to be a cross between the act of thrifting and traditional luxury consumption (Cervellon et al., 2012). Prior research has addressed consumer's perception of value (Turunen et al., 2020), motivations (Kessous & Valette-Florence, 2019), and decision-making processes when purchasing second-hand luxury products (Turunen & Poyry, 2019). Beliefs about environmental friendliness, frugality, online retailing, and fashion consciousness had a positive effect on consumers' attitudes and subsequent purchase intentions for second-hand luxury products through online secondary retailers (Slaton & Pookulanagara, 2022b). Turunen and Leipamaa-Leskinen (2015, p. 62) found that consumers attribute the concept of "sustainability, the real deal, pre-loved, risk investment, and unique find" as well as value, luxury, and authenticity to secondary luxury products.

Past research has not examined digital innovation in the context of the secondary luxury market. Instead, the common theme of this research has been the investigation of consumer behaviour with secondary online platforms (Bae et al., 2022; Slaton & Pookulangara, 2022b). Since no prior research has focused on the implementation of digital strategies to improve the operational processes of the secondary luxury market, the current study is proposed to address this gap in the available academic literature.

Digital Product Passports (DPPs)

Digital Product Passports (DPPs) are defined as "structured collection of product-related data across a product's lifecycle" (Boston Consulting Group, 2023, p. 4). Thus, these passports enable firms and consumers to gather information about the product throughout the value chain. Once accessed, DPPs provide details on the production of the product, material makeup, its journey through the supply chain, care, authentication, and recyclability. Ultimately, the most prominent features are traceability, transparency, and authenticity (Raghavan, 2024).

This technology is highly supported by the European Commission as it is tool to positively impact the circular challenge that is seen in the fashion industry today. According to a World Business Council for Sustainable Development (WBCSD) Report (Boston Consulting Group, 2023) "DPPs have the potential to make the environmental impact of products visible, traceable, and easily accessible to relevant actors. This will increase transparency and circular collaboration that facilitate circular designs (e.g., designs for recyclability) and closed-loop activities (e.g., repair, refurbishment, recycling) … It will significantly impact global value chains, obliging suppliers and producers around the world to collect and report the required DPP data. Furthermore, this could potentially trigger other international regulators to adopt DPPs in the future" (p. 4).

While application of this technology has great potential, there are many elements to consider such as application levels, technology access including data storage, the carrier, and access, data requitements, and governance. Quick response, or QR codes, are favourable as the data carrier are they are affordable and widely used by consumers. Other data carriers, while more expensive options include digital watermark, near-field communication (NFC), Bluetooth tags, barcodes, and radio-frequency identification (RFID) (Boston Consulting Group, 2023).

The blockchain has emerged as a means to store data for DPPs. Blockchain technologies, or distributed ledger technologies, are "a peer-to-peer database that can be shared across a network and can validate, record, and distribute transactions in immutable, encrypted ledgers" (Swan, 2015). According to MyLime (2023), the block chain can provide the trust value and states "blockchain's advanced cryptographic techniques, such as zero-knowledge proofs, ensure that sensitive data remains protected. Thus, blockchain adeptly marries the dual needs of transparency and privacy, enhancing the overall integrity and authenticity of digital product passports" (para. 9).

Currently, there are a few brands engaging with DPPs. For example, ASKET, a Swedish clothing brand, has adopted DPPs and while these are not attached to the clothing itself, detailed information on carbon emissions, water usage, and energy usage is provided on

the consumer's receipt. Additionally, Pangaia, another fashion brand, has begun to use QR codes on products within their resale program called Pangaia ReWear. The information provides details the condition and original value that helps the firm with pricing of the used garments. Like Pangaia, clothing brand Nobody's Child, is using QR codes to communicate information on the product's carbon footprint and detailed care advice (Hestad, 2023).

With the current adoption of DPPs in the industry, along with the overarching goals of these DPPs (e.g., transparency, sustainability, traceability, product quality and safety, circular economy, and innovation), DPPs can transform the secondary luxury industry by implementing this technology. DPPs enables consumers and businesses the ability to make informed purchasing decisions based on the detailed product information that can be obtained in real-time from this digital innovation (see Figure 2). Furthermore, it is communicated that DPPs can "facilitate repairs and recycling and improve transparency about products' environmental impact during production and throughout their entire lifecycle" (Langley et al., 2023, p. 1). However, DPPs have not been implemented on a wide scale and there is limited and contradictory research findings among many industries (Hofstetter et al., 2021). Currently, research focused on DPPs and its potential positive impact on the circular economy and loop-closing pathways (Berger et al., 2022; Cetin et al., 2022; Gligoric et al., 2019), the negative impact with information asymmetry and non-transparency (Berg et al., 2022), and the potential for identifying inefficiencies (Kristoffersen et al., 2020). Langley et al. (2023) provided a conceptual, yet critical review through the adoption of a transdisciplinary innovation approach to provide guiding principles for the 'orchestration' of DPPs.

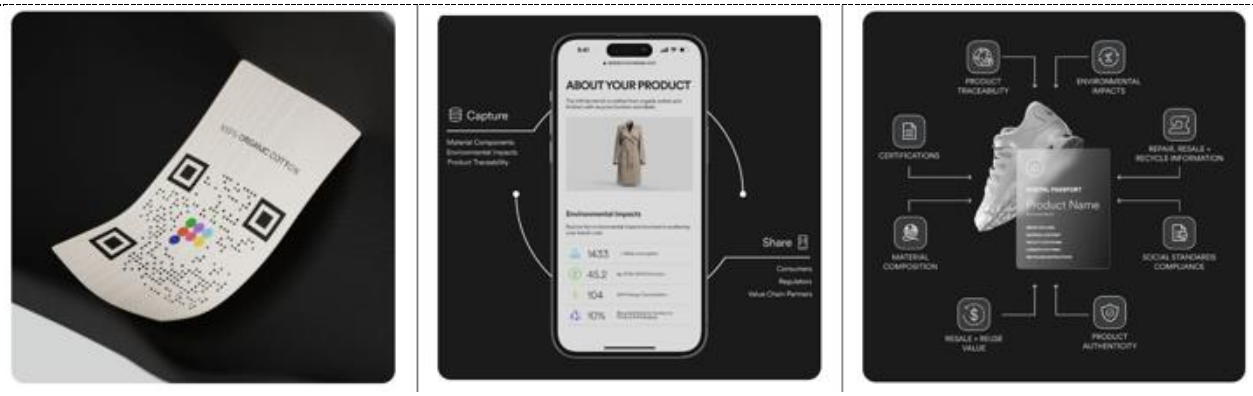

Figure 2. Example of DPPs.
Source. https://www.eon.xyz/digital-product-passports?utm_term=eon%20digital%20product%20passport&utm_campaign=US_spin_search_ownbrand&utm_source=adwords&utm_medium=ppc&hsa_acc=1110814439&hsa_cam=19857231964&hsa_grp=146798638723&hsa_ad=654738398342&hsa_src=g&hsa_tgt=kwd-2020981775929&hsa_kw=eon%20digital%20product%20passport&hsa_mt=b&hsa_net=adwords&hsa_ver=3&gad_source=1&gclid=Cj0KCQjwqpSwBhClARIsADlZ_Tnx5uzWCuQBgTySMT3HzYUNkdn8x-YGbZCWpiq8M4e8R2oOiy_WEcIaAqX9EALw_wcB

There is current research regarding other digital assets such as NFTs. According to Vega and Camarero (2024), who used the theory of acceptance and use of technology 2 (UTAUT2) framework, found that motivations including perceived risks, hedonic value, and social influences influenced purchase intention. The same study also found that firms were more willing to invest in NFTs due to profitability and economic returns (Vega & Camarero, 2024). Utilizing the marketing funnel, Colicev (2022) found that NFTs can improve brand awareness and brand engagement. Yilmaz et al. (2023), using the consumer-based value theory, found that the four values outlined by the theory, monetary, functional, emotional, and social, influenced consumers liking, purchasing, and holding NFTs.

Based on a thorough review of literature on the circular economy, the secondary luxury market, and digital product passports (see Table 1), there is a need for more research in this area. Thus, justifying the current study. The authors also suggest that the benefits of DPPs can only be obtained if the requirements, design, knowledge engineering, implementation, and impact of DPPs is well-orchestrated in the context of the respective industry. Thus, it is important to understand the consumption values of consumers in the secondary luxury market to ensure the usefulness and potential impact of adopting and implementing DPPs in this market.

Table 1. Summary of Related Studies.

Theme	Reference	Study Type
Circular Economy	Bocken at el., 2016	Conceptual
	Bundgaard and Huulgaard, 2019	
Secondary Luxury	Turunen and Leipamaa-Leskinen, 2015	Qualitative
	Cervellon et al., 2012;	Quantitative

	Slaton & Pookulangara, 2022b	Quantitative
	Turunen et al., 2020	Qualitative
	Kessous and Valette-Florence, 2019	Mixed Methods
Digital Product Passports	Langley et al., 2023	Conceptual
	Berger et al., 2022	Conceptual
	Cetin et al., 2022	Conceptual
	Gligoric et al., 2019	Quantitative
	Kristoffersen et al., 2020	Theory- and Practice-Based Review

Theory of Consumption Values

Consumers are more likely to behave in a positive way when they perceive the value to be high (Kotler & Armstrong, 2021). Perceived value "is the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given" (Zeitham, 1988, p. 14). When deciding to purchase a secondary luxury item, it is believed that consumers will perceive secondary luxury products as being of higher value when these items come with a product passport that contains all the necessary information needed to make the best decision. The way in which secondary luxury consumer can be provided all the necessary information is using DPPs. To investigate this idea, the theory of consumption values can be applied to test how well consumer values can predict consumer adoption of product passports within the secondary luxury market. This theory suggests various motivators and values to help guide and investigate the consumer decision making process as it is multi-faceted. There are many considerations to adopt DPPs as a secondary luxury consumer, thus, justifying the use of this theory in this conceptual paper.

The theory of consumption values was developed to determine an individual's consumption choices based on various values (Sheth et al., 1991). Furthermore, it is a multi-dimensional approach that examines consumption values from a behavioural perceptive and provides "perceived-value typologies" (Boksberger & Melson, 2011). A variety of disciplines were used to develop this theory, including marketing, economics, consumer behaviour, psychology, and sociology. This framework has been used to understand the consumption of apparel, food, education, and tourism services, thus providing a multidisciplinary view. Furthermore, with the advancement of digital technology, the theory of consumption values has been utilized to investigate "digital-based consumption behaviour" (i.e., online gaming, social media) (Tanrikulu, 2021 p. 1,176) and is well-suited to the research proposed in this paper.

The framework consists of multiple consumer values, including functional, social, emotional, and conditional. This approached allows for the achievement of three main "axiomatic proposition." These include: (1) "Consumer choice is a function of multiple consumption values;" (2) "The consumption values make a differential contribution in any given choice situation;" and (3) "the consumption values are independent" (Sheth et al. 1991 p., 160). The theory of consumption values can be applied to many consumer behaviour situations (Sheth et al., 1991). Thus, the theory of consumption values can be applied to consumer adoption of DPPs within the secondary luxury market and provides an in-depth investigation of the various values that consumers consider when deciding to use a new and innovative technology. Thus, providing information on the feasibility of orchestrating the implementation of DPPs (Langley et al., 2023) in the secondary market.

Proposed Hypotheses Development

Intention to Adopt DPP

The outcome variable suggested for the proposed study is the intention to adopt DPPs. Consumer adoption is defined in this study as the consumer's acceptance and use of DPPs within the secondary luxury market. It is important to investigate consumers' intentions of adopting DPPs to understand the interest of the consumer and the relevancy of this digital technology in the secondary luxury market. Consumer adoption is driven by how consumers think and feel about a new product or digital innovation (Valor et al., 2022). Although no prior research has examined the adoption of DPPs, several studies have focused on the adoption of other digital innovations.

New technology is embraced for many reasons, including perceived ease of use and perceived usefulness. Conversely, new technologies are rejected due to high costs and poor performance (Antioco & Kleijnen, 2010; Venkatesh et al., 2012). Additionally, Zimmermann et al., 2019) found that convenience and time-saving factors were a main drivers of consumer adoption of smart products. Assisting in better consumption decisions was also a motivator in adopting recommendation systems (Xiao & Benbasat, 2007). In a study by Antioco and Kleijnen (2010), value, image, and financial risk had a negative impact on consumer adoption of technological innovations. In the same study, value was found to be the greatest barrier to adoption. Therefore, the authors of this conceptual paper suggest investigating consumer values to further understand how these values can positively or negatively impact consumer adoption. Guided by the theory of consumption values, the proposed study may provide further information regarding which consumer values contribute to the adoption of a technological innovation such as DPPs within the secondary luxury market while reducing the barriers to adoption.

Conditional Value

Conditional value is defined as "the perceived utility acquired by an alternative as the result of the specific situation or set of circumstances facing the choice maker. An alternative acquires conditional value in the presence of antecedent physical or social contingencies that enhance its functional or social value. Conditional value is measured on a profile of choice contingencies" Sheth et al., 1991, pp. 160-162), In the proposed study, the authors suggest the variable of risk assessment. Because DPPs can assess authenticity and product history and contain anti-counterfeiting measures (McKinsey, 2022), this digital technology may lessen the risk of purchasing a fake or even a damaged second-hand item. Thus, this tool assists in optimal risk assessment and decision making by providing assurance that the product is authentic and is in good quality.

Risk assessment refers to the process of identifying, analysing, and evaluating risks to determine the likelihood and impact of those risks (Aven, 2018). Risk assessment is determined by the consumer's assessment of perceived consequences (Gerber et al., 2014). Risk assessment influences the consumer adoption of NFTs (Vega & Camarero, 2024), digital technologies when online shopping (Pentz et al., 2020), including when purchasing groceries online (Habib & Hamadneh, 2021). The target consumers for the secondary luxury market actively seek information to ensure they are making the best purchase decisions. When consumers feel like they have all the necessary information, they are more likely to engage in a behaviour (Slaton & Pookulangara, 2022b). It is suggested that enhanced risk assessment will positively affect consumer adoption of DPPs used within the secondary luxury market. Thus, the authors propose the following:

Proposition 1. Risk assessment will motivate the consumer to adopt DPP.

It is important to note that social and cultural factors influence risk and thus risk assessment (Knox, 2000). Hence, this study will examine the following antecedents of risk assessment: counterfeit risk, privacy risk, aesthetic risk, and psychological risk. These antecedents will be examined as they relate to the use of DPPs and eventual purchase intention.

Counterfeit Risk

Counterfeit goods are a huge industry, especially in the luxury market. The value of the market has increased to $3 trillion in 2022, triple the amount of 2013 (Chen, 2022). Counterfeit luxury goods are a form of outright intellectual property theft (Dupes vs Counterfeit, n.d.). In this study, counterfeit risk is defined as the "probability that counterfeit goods or services will be purchased, used, or relied upon, resulting in financial loss, reputational damage, or other adverse consequences" (The Economic Impact, 2007). In the context of the online secondary luxury market, counterfeit risk can be described as the risk involved in purchasing a pre-owned product without having the ability to authenticate the luxury item. In the secondary luxury market, authenticity is a major concern, especially as high-quality counterfeit products become increasingly common. DPPs enable brands to authenticate products with the use of technology such as block-chain, hence reducing counterfeit risk. Thus, it can be inferred that counterfeit risk in the secondary luxury market will positively impact risk assessment. The authors propose the following:

Proposition 2a. Counterfeit risk will influence the consumer's assessment by using DPPs.

Privacy Risk

Privacy risk is defined as the potential loss of personal information that may result in identity theft while making a purchase online (Pavlou, 2003). DPPs allow a consumer to follow the entire supply chain including quality, properties, and content of a product as well as sourcing (Daphne & Stretton, 2023). Additionally, data related to past and current owners of a product is also collected, including detailed breakdowns of ownership duration and a specific event audit trail (Digital Product Passport, n.d.). Previous research on consumers who favour information transparency (e.g., DPPs) has demonstrated that they are less willing than other consumers to share their information online due to privacy concerns (Awad & Krishnan, 2006). Furthermore, users' decisions to divulge privacy information are generally driven by two considerations: (1) risk-benefit evaluation and (2) risk assessment deemed to be none or negligible (Barth and De Jong, 2017). Thus, the key assumption related to privacy risk is that every individual has a limit of tolerance in terms of risk perception determined by personal characteristics (Blackwell et. al., 2001). In this study, it is assumed that consumers' feelings of privacy risk associated with DPPs may be high, as it is still a relatively new concept. Hence, privacy risk may negatively influence the risk assessment of DPPs. The authors propose the following:

Proposition 2b. Privacy risk will influence the consumer's assessment by using DPPs.

Aesthetic Risk

Aesthetic risk is an important factor to consider while purchasing second-hand goods online. Aesthetic risk is related to consumers' perceptions of second-hand fashion and whether the product matches well with the consumer's image (Kim et al., 2021). Aesthetic risk can negatively influence the intention-behaviour relationship (Rausch & Kopplin, 2021). On the other hand, the secondary luxury market provides an opportunity for consumers to purchase luxury goods without paying full price, prices that may be unaffordable for some (Liu et. al., 2013). DPPs have been touted as a technology that provides transparency and visibility from end to end in the production process, enabling consumers to obtain transparent and detailed information about the products they buy (European Digital Product, 2023; Sabur, 2023). Thus, it can be inferred that consumers will not be concerned about aesthetics as they will have all the relevant information

regarding their purchase. Therefore, consumers' beliefs about aesthetic risk while using DPPs will positively influence risk assessment. The authors propose the following:

Proposition 2c. Aesthetic risk will influence the consumer's assessment by using DPPs.

Psychological Risk

Psychological risk is defined as the dissatisfaction or mental stress caused by the purchase of a product (Jacoby & Kaplan, 1972). It is important to note that consumers may contemplate the potential loss of self-esteem or ego caused by engaging in a behaviour (Lang, 2018). In this study, psychological risk is defined as the risk associated with buying a second-hand luxury product that is associated with DPPs. Previous research highlights the negative influence of psychological risk on attitude and enjoyment toward fashion rentals (Kang & Kim, 2013; Lang, 2018) and purchase intentions of second-hand clothing (Koay et. al, 2023). DPPs are based on blockchain technology that provides immutable records of ownership, origin, and usage, thus increasing trust and transparency in the supply chain (Brown & Daphne, 2023). Providing assurance of product authenticity directly influences the psychological risk associated with online purchases, especially while purchasing secondary luxury products online (Montecchi et al., 2019). Thus, it can be assumed that the psychological risk associated with purchasing secondary luxury products using DPPs will be low. Therefore, this form of risk will positively influence risk assessment. The authors propose the following:

Proposition 2d. Ppsychological risk will influence the consumer's assessment by using DPPs.

Emotional Value

The emotional value is defined as "the perceived utility acquired from an alternative's capacity to arouse feelings or affective states. An alternative acquires emotional value when associated with specific feelings or when precipitating or perpetuating those feelings. Emotional value is measured on a profile of feelings associated with the alternative" (Sheth et al., 1991 pp. 160–162). Emotional value has been investigated with NFTs and was found to be a significant motivator in adoption (Yilmaz et al., 2023). The form of emotional value that will be included in this study is trust. While there are many applications of DPPs, authenticity, product history tracking, and anticounterfeiting measures are among the most important (McKinsey, 2022). These factors are embedded in digital technology to ensure that the product is not a fake, but rather an exclusive designer product. Furthermore, while this item is considered second-hand, the exclusivity of the product is still valued by the consumer. Consumers may attribute value, luxury, authenticity, exclusivity, and uniqueness to the luxury item (Turunen & Leipamaa-Leskinen, 2015). DPPs provide consumers with the necessary information about second-hand luxury products to ensure that the product is authentic, and, in turn, an exclusive designer product valued by the second-hand luxury consumer.

Prior research has highlighted the positive influence of trust on consumer adoption of digital technologies. For example, in a study on blockchain adoption by Shrestha et al. (2021), trust was found to positively influence consumer adoption of blockchain technology. This relationship was also supported by Bhattacherjee (2002) when investigating trust within online firms. Therefore, it is suggested that consumer trust will positively affect consumer adoption of DPPs used within the secondary luxury market. Thus, the authors propose the following: Proposition 3. Trust will motivate the consumer to adopt DPP.

In addition to trust, the variable of brand trust and its influence on overall consumer trust of DPPs should also be investigated.

Brand Trust

The concept of brand trust has been widely investigated and defined in many different terms. For example, brand trust is said to exist "when one party has confidence in an exchange partner's reliability and integrity" (Morgan & Hunt, 1994, p. 23). Brand trust has also been defined as the consumer's ability to depend on the brand's ability to deliver on a promise (Chauduri & Holbrook, 2001). Furthermore, brand trust is seen as a multidimensional concept (Johnson & Greyson, 2005; Park et al., 2012). It is thought that if a consumer has a higher level of trust toward a particular brand, they are more likely to trust the features of DPPs. Thus, it is suggested that brand trust will positively affect consumer trust of DPPs. The authors propose the following:

Proposition 4. Brand trust will influence consumer trust.

Functional Value

Functional value is defined as "the perceived utility acquired from an alternative's capacity for functional, utilitarian, or physical performance. An alternative acquires functional value through the possession of salient functional, utilitarian, or physical at-tributes. Functional value is measured on a profile of choice attributes" (Sheth et al., 1991 pp. 160–162). The forms of functional value in the proposed study are perceived ease of use and perceived usefulness. Perceived ease of use evaluates an individual's use of a technology and determines the extent of the necessary physical and mental effort (Ghazali et al., 2018; Thakur & Srivastava, 2014). Perceived usefulness is defined as "the extent to which an individual perceives the technology system used is able to enhance the efficiency and productivity of his/her task performance or daily activities in a timely manner" (McLean et al., 2020) Thus, perceived ease of use relates to the ability to use the technology, and perceived usefulness refers to the convenience associated with using the technology. The idea of using DPPs within the secondary luxury market is intended to improve the required operational processes (McKinsey,

2022). In the proposed study, perceived ease of use is a measurement of consumers' perceptions of the use of DPPs within their consumption of secondary luxury products. Furthermore, perceived usefulness is a measurement of consumers' beliefs that DPPs can enhance the experience of consuming second-hand luxury products through the increased availability of information about the second-hand product. This can be measured through the user experience with the product passport technology along with the heightened focus on the market's operational processes.

Currently, there are no studies that investigate the effects of perceived ease of use or perceived usefulness of DPPs on behavioural intention. However, prior research has investigated the effects of perceived ease of use and perceived usefulness of other digital technologies (e.g., NFTs) on behavioural intention as well as on consumer adoption (i.e., Vega & Camarero, 2024; Yilmaz et al., 2023). For example, Chan et al. (2022) found that perceived ease of use and perceived usefulness positively affected consumer adoption of mobile shopping during the COVID-19 pandemic. Additionally, perceived ease of use and perceived usefulness with online shopping were found to positively influence consumer adoption (Saleem et al., 2022). In keeping with the results of this prior research, it is likely that consumers who have a heightened sense of perceived ease of use and perceived usefulness of DPPs will be more likely to adopt the digital technology. Therefore, it is suggested that perceived ease of use and perceived usefulness will positively affect consumer adoption of DPPs within the secondary luxury market. In addition, perceived ease of use will positively affect perceived usefulness of DPPs. Thus, the authors propose the following:

Proposition 5a. Perceived ease of use will motivate the consumer to adopt DPP.
Proposition 5b. Perceived ease of use will motivate the consumer to adopt DPP.
Proposition 6. Perceived usefulness will motivate the consumer to adopt DPP.

Social Value

Social value is defined as "the perceived utility acquired from an alternative's as-sociation with one or more specific social groups. An alternative acquires social value through association with positively or negatively stereo-typed demographic, socioeconomic, and cultural-ethnic groups. Social value is measured on a profile of choice imagery" (Sheth et al., 1991 pp. 160-162). The target market of second-hand luxury goods includes millennial and generation Z consumers, as these two consumer groups have adopted shopping for secondary luxury items four times faster than any other generational cohort (Trotman, 2022). These consumers are interested in purchasing luxury items, but also have a focus on environmental sustainability in their consumption and are typically price conscious (Wang et al., 2020). Furthermore, these consumers are heavily influenced by their peers and reference groups and tend to consider social influences when making decisions (Slaton & Pookulangara, 2022a). Thus, these consumers value their peers and the information they gain from them. This as also be investigated with NFTs finding that social influence has a significant influence on adoption (Yilmaz et al. 2023). Based on this, the proposed study should consider the social aspects that may contribute to the adoption of DPPs.

Subjective norms are defined as social influence or pressure to behave in a certain way. A positive relationship between subjective norms and behavioural intention has been found in prior research (Chang & Watchravesringkan, 2018; Jain, 2020; Slaton & Pookulangara, 2022a; b). Consumers tend to look to their peers or social influencers to "to decide the most effective course of action when the situation is novel, ambiguous, and uncertain" (Chen & Tung, 2014; Cialdini & Trost, 1998, p. 155). DPPs are a somewhat novel form of digital technology. It is suggested that consumers' social value will positively affect their adoption of DPPs used within the secondary luxury market. Therefore, the authors propose the following:

Proposition 7. Social value will motivate the consumer to adopt DPP.

Figure 3 depicts the proposed framework for the study, while Table 2 summarized the proposed hypotheses.

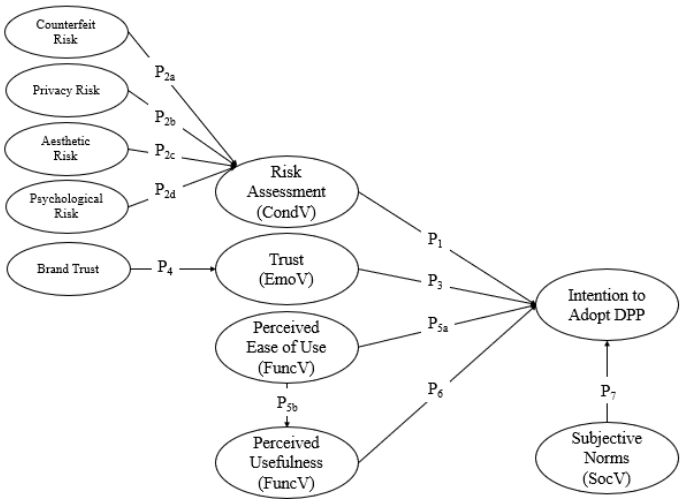

Figure 3. Proposed Framework.

Table 2. Summary of Proposed Hypotheses.

P#	Proposed Hypothesis
P1	Risk assessment will positively influence consumer intention to adopt DPP.
P2a	Counterfeit risk will positively influence the risk assessment of DPP.
P2b	Privacy risk will negatively influence the risk assessment of DPP.
P2c	Aesthetic risk will positively influence the risk assessment of DPP.
P2d	Psychological risk will positively influence the risk assessment of DPP.
P3	Trust will positively influence consumer intention to adopt DPP.

P4	Brand trust will positively influence the trust assessment of DPP.
P5a	Perceived ease of use will positively influence consumer intention to adopt DPP.
P5b	Perceived ease of use will positively influence perceived usefulness of DPP.
P6	Perceived usefulness will positively influence consumer intention to adopt DPP.
P7	Social value will positively influence consumer intention to adopt DPP.

Conclusions and Future Research

The purpose of this conceptual paper study with which to investigate consumer values that influence the adoption of DPPs used within the secondary luxury market. These values include conditional, emotional, function, and social values. In addition, three research questions were posed:

1. How can DPPs be defined in the secondary luxury industry?
2. How can the values incorporated in the theory of consumption values apply to the adoption of DPPs within the secondary luxury market?
3. What is the future research direction or agenda for future scholars?

It has been found that luxury products are well suited for a circular strategy (Bundgaard & Huulgaard, 2019). Additionally, the secondary luxury market is growing rapidly, outpacing the growth of the traditional luxury market by four times (Beauloye, 2023). Research is needed to further understand this market and what strategies can be implemented to reduce pain points for both consumers and retailers. Digital product passports are an innovation that may ease these pain points. This helps address the first research question. DPPs provide valuable information on secondary luxury products that may include its brand and manufacturing practices, material composition, product care, history, and marketing and pricing guidance (McKinsey, 2022). Thus, providing both the firm and the consumers the benefit of traceability, transparency, authenticity, and environmental sustainability. Overall, it is found that DPPs can streamline and improve the operational processes of the secondary luxury market.

Based on a thorough review of academic and industry literature, along with the guidance of the theory of consumption values, it is found that consumers may be motivated by several factors to adopt DPPs when consuming secondary luxury goods. The findings of previous literature show that overarching values include conditional, emotional, function, and social values. Specifically, the authors of this study suggest the investigation of risks such as counterfeit, privacy, aesthetic, and psychological, trust, specifically brand trust, perceived ease of use, perceived usefulness, and subjective norms. Each variable should be considered in future research to thoroughly understand the consumer perception and motivations to adopt DPPs when shopping for luxury in the secondary market. It is argued that consumer decision making is multifaceted and with the added complexity of used goods, these elements should be examined and considered, addressing the second research question.

As the current study is conceptual and future research is needed to test the proposed hypotheses constructed in this article. A future study should focus on recruiting consumers who are knowledgeable on DPPs for an online survey with developed for adopting scales representing the proposed variables in this conceptual study. Reliability and validity of the measures should be tested through the analysis of Cronbach's alpha, an exploratory factor analysis, AVE, and CR. Furthermore, structural equation modelling is recommended to conduct a confirmatory factor analysis and path analysis to test the proposed hypotheses developed from this conceptual paper. Theoretical and managerial implications can be recorded based on the results adding to the academic literature.

Many other theories and frameworks can be applied to research in the future including many behavioural theories (i.e., theory of reasoned action) as well as the technology acceptance model, the triadic framework, and the theory of innovation. Each can be applied to research studies to explore this phenomenon through different perspectives and established variables. Many other theories and frameworks can be applied to research in the future including many behavioural theories (i.e., theory of reasoned action) as well as the technology acceptance model, the triadic framework, and the theory of innovation. Furthermore, the UTAUT2 framework can also be applied to explore DPPs much like it was used to examine NFTs in research conducted by Vega and Camarero (2022). Exploring this phenomenon through different perspectives and established variables will bring valuable information to the academic literature.

It would also be of interest to investigate the supplier and firm perspective. The adoption of DPPs is also the choice of retail and brand executives. It would be interesting to explore the adoption choice of supplier and firms while also investigating barriers to adopt. Furthermore, a future study could also develop a prototype of DPP for secondary luxury products based on the findings of an empirical study to access the design element proposed by Langley et al. (2023). Overall, these future research outcomes could include overall improvements to DPPs in the secondary luxury market. This addresses the third research question in this conceptual study.

The main limitation of this study is the newness of DPPs and the fact that many secondary consumers may not be educated on how this digital technology works. It is also noted that the information may not be consistently updated, or misinformation may occur based on user error or lack of transparency. Furthermore, there is a risk of the technology not working. Thus, these limitations should be considered for this proposed conceptual study

as well as should be taken into consideration in future empirical studies.

Proposed Academic Implications

DPPs will undoubtedly become the norm in the coming years, especially as they allow brands to pursue sustainability initiatives. This technology is beneficial to organizations as it can be used to increase customer satisfaction and loyalty, boost brand reputation, and tap into the growing demand for sustainable products (Brown & Daphne, 2023). In the context of the secondary luxury market, DPPs deliver higher perceived value to consumers, as they provide a vast amount of necessary information when making a purchase (McKinsey, 2022). In other words, the more information the consumer has, the better they will feel about making a purchase (Slaton & Pookulangara, 2022b). Furthermore, the conceptual framework proposed in this study provides insight into the consumer values that can predict the adoption of DPPs within the secondary luxury market. This study also introduces new antecedents to risk assessment, including counterfeit, aesthetic, privacy, and psychological risks, thus expanding the use of the theory of consumption values. In addition, the study will assess the functional values of DPPs, including ease of use and perceived usefulness, as well as social value through the assessment of social norms.

Investigating the proposed relationships will allow for the assessment of consumer interest, adoption intention, and insights into the impact of DPPs in the secondary luxury market. The theory of consumption values thoroughly summarizes the elements that are considered by consumers when purchasing from the secondary market. The analysis of the potential risks, trust, use, and social aspects will tap into the consumer and their consumption journey. Thus, outlining what is important to them as they embark on using DPPs when shopping for secondary luxury items and engaging in this market.

Previous research does not provide any insight into the use of technology by consumers. Given the European Commission's proposal under the new Eco-design for Sustainable Products Regulation (ESPR) that requires all products placed on the EU market, whether produced inside or outside the EU, to be embedded with a DPP (Douglass, 2023), it is hoped that this study will serve as the foundation for future empirical research as this may be adopted in by other agencies throughout the world.

Proposed Marketing Implications

The use of DPPs may be an excellent investment, as it allows brands the unique opportunity to address any concerns related to the authenticity of secondary luxury goods while offering unparalleled new customer experiences and marketing innovations (Stöcker, 2023). The conceptual model provides information that brands may use to better understand consumer values related to DPPs, as well as which factors reduce consumers' perceptions of risk, including counterfeit, privacy, aesthetic, and psychological risks, when purchasing second-hand luxury products. Consumer values may enable brands to create personalized marketing plans, with DPPs serving as a platform on which to enhance interactions with their consumers. The adoption of DPPs will ultimately contribute to greater success for secondary luxury retailers such as The RealReal and Vestiaire Collective. Increased competition in this market will force these retailers to innovate. Finally, DPPs will encourage the development of a more circular economy, as their use encourages the repurchase of luxury products- a victory for both brands and consumers.

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