



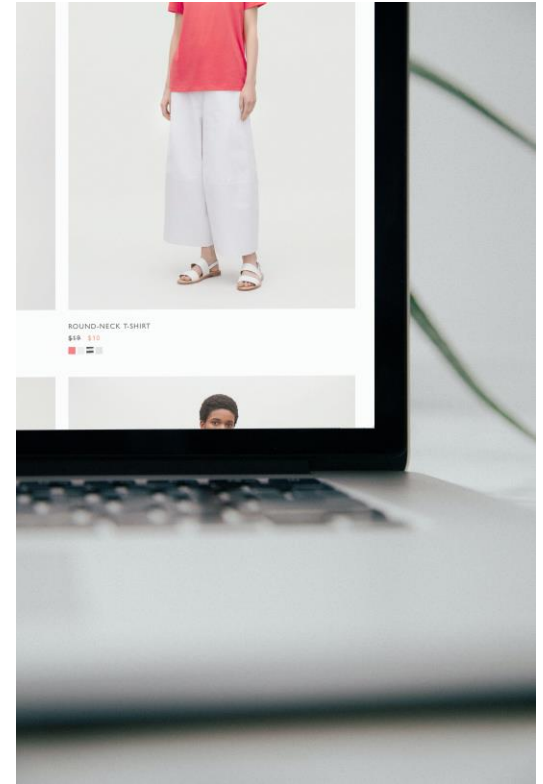
A multidisciplinary framework to map digital vulnerabilities: the case of Buy-Now-Pay Later in the UK

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Buy-Now-Pay-Later (BNPL)

- Defined in the UK as an **unregulated, interest free, short-term loan** to spread and/or delay payment of retail goods enabled by the digital economy and FinTech (FCA, 2021)
- Consumers use BNPL providers to pay a retailer for a good or service in full at the online checkout and then repay the cost of the goods to BNPL in one or more instalments – interest or fees to be paid for missed arranged payments
- Delivery of credit at the point of sale
- Example of ‘democratisation’ of finance enabled through AI and non-credit, non-financial data such as mobile phone payments and social media activity (Aggarwal, 2021)
- Estimated £2.7bn in UK BNPL lending during 2020 (FCA, 2021); globally, BNPL is a US \$100bn market. The scale and number of BNPL offerings increased anywhere from 200% to 350% in 2021-2022. 10% of all e-commerce dollar value by 2024.





Buy-Now-Pay-Later in the UK

Context

Currently unregulated

Risks and algorithmic applications often obfuscated

Consumers may not realise how their data is used while credit products are offered for free

Consumers in their 20s at risk of debt; and 2 in 5 users have struggled to pay for essential items due to BNPL payments

Focus

BNPL platforms in the UK

Digital vulnerability in the context of unsecured consumer credit

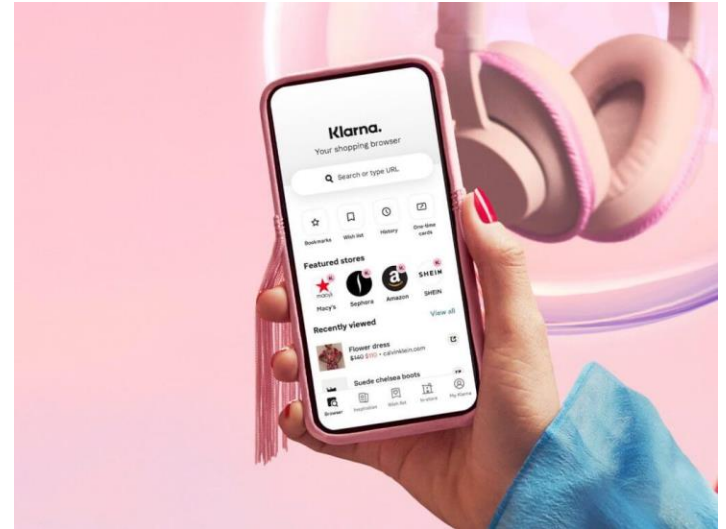
Aim

Multidisciplinary framework to map current and emerging digital vulnerabilities in BNPL in the UK

Contributing to current understandings of digital vulnerability

Data set

- Systematic review of current academic literature around BNPL and digital vulnerabilities (e.g., Fook and McNeill, 2021; Gerrans, 2021; Guttman-Kenney, et al., 2022; Johnson, et al., 2021), then extended to a multidisciplinary approach.
- Analysis of BNPL providers (17 identified; apps, T&Cs, application and registration process, identification verification, gamification, usability)
- 35 policy documents (UK Government, consultancy organisations, charities, and other groups operating within the financial inclusion space)
- News articles and grey literature (over 1200)



Digital vulnerability

“a universal state of defencelessness and susceptibility to (the exploitation of) power imbalances that are the result of increasing automation of commerce, datafied consumer–seller relations, and the very architecture of digital marketplaces” (Helberger et al., 2021: 2).

“...the fact that vulnerability is not (only) an inherent condition but the product of external market or societal circumstances and power structures contains important policy implications. Essentially this means that consumers are not simply vulnerable, but that some market structures and configurations make them vulnerable, or even worse: exploit their vulnerabilities.” (Helberger et al., 2021:18)





The FARE framework: contributions

- We identify current and emerging digital vulnerabilities in the **Financial, Algorithmic, Regulatory, and Ethical (FARE) domains**
 - Separate for analytical purposes only: they **overlap and co-exist** rather than being mutually exclusive
- Building from Helberger et al. (2021)'s definition, the framework allows us to **advance a multidisciplinary definition of digital vulnerability** that takes into account the multifaceted reality of digital consumer markets



Current and emerging Digital Vulnerabilities: the FARE framework

Financial Current	Algorithmic Emerging	Regulatory Current	Ethical Emerging
Marketing and perception of BNPL	Targeted and tailored data and analytics	Defining regulatory boundaries	Surveillance and gamipulation
Digitalisation and lack of transparency	Persuasive design and dark patterns	Regulatory approach towards AI	Transactional convenience and impulse buying
Affordability checks and responsible lending	AI fairness in decision-making processes	Fraud risk	AI ethics and corporate responsibility
Merchant risks	Emerging issues regarding data accumulation	Business as government	Responsible business



Reframing digital vulnerability...

...As **a process** tightly related to a logic of accumulation of capital, of algorithmic capacity, and of data, and to imbalanced power relations amongst social actors.

...As **a volatile state** that is systemic and permeates individual circumstances, societal structures, and organizations. This means that who is vulnerable, when, and to what extent, changes *throughout* BNPL platforms and *because of* how such platforms are organised, operate, and change over time.

...As necessarily **multifaceted, mutable, multi-issue, volatile, and multidisciplinary**; it permeates institutional boundaries as a governmental, societal, financial, and corporate issue at once. Digital vulnerability *can involve any and all societal actors*, be they individuals, communities, governments, or organizations: anyone, regardless of wealth, can become digitally vulnerable.



Moving forward

- Further research and data needed
- **Regulation and algorithmic degrowth**
 - diminishing the extent to which AI and algorithms are applied to unsecured consumer markets and other FinTech systems
 - employing a different algorithmic logic when building more sustainable and responsible financial platforms
- Submission to Research Policy and grant application



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Thank you



Financial vulnerabilities

Marketing and perception of BNPL

BNPL schemes are generally perceived as a way of pay or a money management tool rather than a credit source

Consumers lacking financial knowledge re the risks of paying later

Digitalisation and lack of transparency

BNPL platforms lack substantial product information

T&Cs of BNPL loan schemes only available later in registration process rather than upfront

Most of BNPL schemes reduce payment transparency with a two-click sign up process for consumers to a credit agreement.

Affordability checks and responsible lending

BNPL providers are not required to undertake credit worthiness and affordability checks

Soft credit check and ongoing relationship with consumer shift responsibility on consumers and facilitate debt

Merchant risks

Offering of BNPL transactions to merchants come at a premium that ranges from 1.5 to 7 percent of the purchase value

Use of BNPL can complicate a merchant's returns process, issues with items lost in shipment, fraud losses and negative PR



Algorithmic vulnerabilities

Targeted and tailored data analytics

BNPL personalization enabling spending-without-money or debtification under a veneer of control

Unsolicted personalised offers in precise timely response to emerging or changing circumstances

Persuasive design and dark patterns

Underhand tactics that can nudge people into a particular course of action - subscribing, adding items to cart or unwittingly signing up for additional services

Can involve nagging, obstruction, and enforced action during an online interaction

AI fairness in decision-making processes

probability-of-default modelling and incremental utility of macro-economic factors (age, employment, education, payment history...)

Biasing of decision making for 2nd gen BNPL AI algorithms

Emerging issues re data accumulation

Datafication and data accumulation by BNPL platform; social quantification

BNPL platforms do not disclose how data is used to generate predictive insights about behaviours



Regulatory vulnerabilities

Defining regulatory boundaries

Difficult to define precisely what constitutes a BNPL arrangement - TBD is scope of regulatory controls

Current regulatory framework doomed to playing catch-up with the market reality

Regulatory approaches towards AI

Lack of clarity on transparency, accountability, and explainability in the current regulatory framework

Ongoing debate concerning the current extent of legal requirements under the GDPR

Fraud risk

BNPL schemes were the fastest growing area for customer complaints in 2019 (over 2mil in 2019/20)

Lack of credit checks and lenient controls

Business as government

BNPL providers contributing to defining the very institutional and regulatory environment where they operate

BNPL providers “technology driven” and focused on “easy and speed” (FCA, 2021: 42)

FinTech and BNPL regulation being subject to ‘capture’



Ethical vulnerabilities

Surveillance and gamification

gamified interfaces 7/17 platforms use rewards and gamification techniques to encourage referrals and timely payments

BNPL as gamification of credit - use of game-design elements that impel the user towards undesired behaviors

Transactional convenience and impulse buying

Tailored BNPL experience facilitate impulse buying

BNPL facilitates emotional and impulsive purchasing

Algorithmic ethics and corporate responsibility

BNPL lack of accountability systems regarding potential unethical consequences of algorithms

Challenging to place responsibility as BNPL platforms disclose very little

Responsible business

BNPL providers between FinTech and data companies, market themselves differently depending on the audience

Rhetoric of false balance - BNPL providers claim to be actively contributing to financial wellness

