A Home for Digital Equity: Algorithmic Redlining and Property Technology

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Property technologies (PropTech) are innovations that automate real estate transactions. Automating rental markets amplifies racial discrimination and segregation in housing. Because screening tools rely on data drawn from discriminatory—and often overtly segregationist—historical practices, they replicate those practices' unequal outcomes in the form of algorithmic redlining. In this Article, I focus on one form of PropTech: automated tenant screens. Automated tenant screens operate with machine learning algorithms that process data sources—credit scores, eviction records, and criminal histories—derived from the very institutions that created inequities in housing and wealth. This Article critiques institutional use of data and centers on renters of color, who too often confront sociopolitical, financial, and now digital barriers to housing throughout the home search process. The Fair Housing Act has an underutilized tool that can address algorithmic redlining. I recommend a normative frame of segregative effect theory as a countermeasure to segregation exacerbated by PropTech. This Article

is one of the first to elevate algorithmic redlining by PropTech and prescribe a legal strategy.

<div align="center">INTRODUCTION</div>

In 2021, a Black woman named Mary Louis applied to rent an apartment in Malden, Massachusetts.[1] The same year, a Black woman named Monica Douglas applied to rent an apartment in Canton, Massachusetts.[2] In 2015, a Latina woman named Carmen Arroyo applied for her son to move into her apartment in Willimantic, Connecticut.[3] Despite the unique circumstances surrounding each application, all three were formulaically rejected by an automated tenant-

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     1.   Amended Complaint at 4, 20, Louis v. SafeRent Sols., LLC, No. 1:22-cv-10800 (D. Mass. May 25, 2022).
     2.   *Id.* at 4, 22.
     3.   *Connecticut Fair Housing Center, et al. v. CoreLogic Rental Property Solutions*, COHEN MILSTEIN, https://www.cohenmilstein.com/case-study/connecticut-fair-housing-center-et-al-v-corelogic-rental-property-solutions [https://perma.cc/MR3V-B6YT] (summarizing case details).

screening tool employed by SafeRent Solutions, LLC (SafeRent) based on algorithmically assigned scores and, in one case, a criminal record notation.[4]

Both Massachusetts applicants, Ms. Douglas and Ms. Louis (the *Louis* plaintiffs), were assigned SafeRent scores below their landlords' minimum thresholds.[5] When Ms. Douglas sought safer housing after a shooting at her apartment building, she was turned away based solely on her SafeRent score.[6] Ms. Douglas claims her score was unfairly low because of non-tenancy-related debt and a single past eviction[7] despite twenty-six years of positive rental history with a previous landlord.[8] As a result of the application denial, Ms. Douglas continued to live in a neighborhood where she felt unsafe.[9]

Ms. Louis, in search of more desirable amenities, was similarly screened out on the basis of a low score.[10] She attributes her score to non-tenancy-related debt, despite landlord references that could show that she had paid rent on time for sixteen years.[11] She now lives in a higher-crime area in a more expensive unit with fewer amenities than the apartment that rejected her application.[12] In the Connecticut case, SafeRent's background report prevented Mikhail Arroyo from living with his mother, who became his primary caretaker and conservator after a debilitating accident.[13] Mr. Arroyo claims he was screened out because SafeRent's criminal background report indicated "Records Found," which is the only text that appears to leasing agents when a disqualifying criminal record is identified.[14] In 2014, Mr. Arroyo was arrested in Pennsylvania and charged with retail theft, a low-level misdemeanor that is typically treated as a civil

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4. *See generally id.*; Amended Complaint, *supra* note 1, at 1 (noting company name change). CoreLogic was renamed SafeRent Solutions, LLC. For purposes of clarity, I will refer to the company by its current name, but I will distinguish the two pending cases by referencing CoreLogic for the Arroyo litigation and SafeRent for the Louis et al. litigation.

5. *See* Amended Complaint, *supra* note 1, at 20–23. SafeRent Score uses data from multifamily rental debt, subprime credit, eviction history, and credit reports to predict and manage risks, including unpaid rent, lease termination, and property damage. *SafeRent Score*, SAFERENT SOLS., https://saferentsolutions.com/saferent-score/ [https://perma.cc/4LZW-N9SV].

6. Amended Complaint, *supra* note 1, at 22.

7. *Id.* at 4. The amended complaint details the eviction was a no-fault eviction filed to remove Ms. Douglas to transfer the possessory interest from Ms. Douglas to the landlord's family member. *Id.* at 22–23.

8. *Id.* at 23.

9. *Id.* Court filings dated July 26, 2023, show that a non-party landlord at Millside at Heritage Park rejected her application using a SafeRent Score; however, the non-party landlord reversed course after Ms. Douglas appealed the denial with the help of Community Action Agency of Somerville, Inc.

10. *Id.* at 20.

11. *Id.* at 4, 21.

12. *Id.* at 21–22.

13. Conn. Fair Hous. Ctr. v. CoreLogic Rental Prop. Sols., LLC, 478 F. Supp. 3d 259, 272–73 (D. Conn. 2020) (describing parties and material facts).

14. *Id.* at 274–75 (explaining software functionality and scope). When using the CoreLogic system, landlords choose the disqualifying criteria. It can range anywhere from arrests for civil infractions to felony convictions. *Id.* at 274; *see also id.* at 279 (explaining how WinnResidential suppressed the "Crim Decision" to its leasing agents and only indicated "Records Found").

infraction—and that was eventually dismissed.[15] Mr. Arroyo, severely disabled after his accident, was forced to stay in a nursing home for another year and eventually moved in with his mother while she battled through court proceedings to fight the denial of his rental application.[16]

These three housing experiences gave rise to litigation challenging landlords' reliance on SafeRent scores. In 2017, the Connecticut Fair Housing Center brought a suit on behalf of Ms. Arroyo in *Connecticut Fair Housing Center v. CoreLogic Rental Property Solutions*.[17] In 2022, Ms. Douglas and Ms. Louis brought claims on behalf of themselves and putative class action claims for all similarly situated Black or Hispanic individuals who pay rent using vouchers in *Louis v. SafeRent Solutions*.[18]

The core problem illustrated by all three renters is too familiar. Landlords have long relied on imperfect proxies to turn down prospective tenants, and those proxies—given the United States's social and legal history—very often track race.[19] What makes the *Louis* and *CoreLogic* cases distinctive is that an algorithm sat in the middle of the decision-making process. In *CoreLogic*, the court concluded that the CrimSafe tool, the technology at issue in the case, was primarily used as a filtering system to inform housing providers of criminal records found and was based on parameters determined by housing providers.[20] While algorithms power the tool and inform users, decisions are the housing providers' alone. The use of the CrimSafe tool in *CoreLogic* differs from how the screening technology was used in *Louis* because the algorithms compute evaluative scores as opposed to simple filters. Algorithms give screening tools a false aura of neutrality as if they preclude historically racial markers, when in

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15. *Id.* at 280.

16. *See* Conn. Gen. Assembly, Testimony of Carmen Arroyo 1, https://www.cga.ct.gov/2021/appdata/tmy/2021HB-06439-R000219-Arroyo,%20Carmen-CT%20Fair%20Housing%20Center-TMY.PDF [https://perma.cc/55FL-HMPU]; *see generally supra* note 14. The U.S. District Court for the District of Connecticut issued a ruling on July 20, 2023, against the plaintiffs' Fair Housing Act claims. The court reasoned that plaintiffs did not meet their burden proving that CoreLogic "made unavailable or denied" housing under FHA § 3604(a) because the ultimate decision-maker regarding the denial of housing was the housing provider WinnResidential, a non-party in this case. Conn. Fair Hous. Ctr. v. CoreLogic Rental Prop. Sols., No. 3:18-cv-705-VLB, slip op. at 46 (D. Conn. July 20, 2023). The opinion offered no analysis of disparate impact liability.

17. 478 F. Supp. 3d at 274–75.

18. No. 1:22-cv-10800, 2022 WL 1667663 (D. Mass. May 25, 2022). After an amended complaint was filed on August 26, 2022, SafeRent Solutions filed a motion to dismiss for lack of standing and for failure to state a claim on October 27, 2022. Judge Angel Kelley of the U.S. District Court for the District of Massachusetts recently denied the motion to dismiss. No. 1:22-cv-10800, 2023 WL 4766192, at *1 (D. Mass. July 26, 2023).

19. *See generally* Tex Pasley, Henry Oostrom-Shah & Eric Sirota, Shriver Ctr. on Poverty L., Screened Out: How Tenant Screening Reports Deprive Tenants of Equal Access to Housing (2020), https://www.povertylaw.org/wp-content/uploads/2021/01/tenant-screening-final-report.pdf [https://perma.cc/LL6S-5YYH] (discussing the historical origins of racial bias in tenant screening).

20. *Conn. Fair Hous. Ctr.*, slip op. at 6, 40 (describing the function of the CrimSafe tool as a filtering system not a decision-making tool).

fact, these decision-making technologies measure proxies for race.[21] This dynamic is called "algorithmic redlining."[22]

The *Louis* and *CoreLogic* cases illustrate how algorithms in property technologies can allegedly create disparate outcomes. Overly surveilled, arrested, and evicted people tend to have lower credit scores due to incessant discriminatory practices that disrupt generational wealth-making.[23] Property technology has become yet another disruption. Property technology, or PropTech for short, is a term used to describe technologies that automate workflows within the real estate industry using algorithms and machine learning (ML).[24] PropTech encompasses a wide range of innovations, from the automation of advertisements (and other ways of entry into the real estate

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21.   *See* Natalie Campisi, *From Inherent Racial Bias to Incorrect Data—The Problems With Current Credit Scoring Models*, FORBES (Feb. 26, 2021), https://www.forbes.com/advisor/credit-cards/from-inherent-racial-bias-to-incorrect-data-the-problems-with-current-credit-scoring-models/ [https://perma.cc/EWA4-CS8E] (discussing racial bias in credit scoring systems); *see also* Rebecca Oyama, *Do Not (Re)Enter: the Rise of Criminal Background Tenant Screening as a Violation of the Fair Housing Act*, 15 MICH. J. RACE & L. 181, 184–93 (2009) (discussing criminal histories as a way to screen tenants of color); Statement of Interest of the United States at 12, Louis v. SafeRent Sols., LLC, No. 1:22-cv-10800 (D. Mass. Jan. 9, 2023) (affirming that the FHA liability reaches a broad array of entities providing housing-related services, including companies that offer tenant screening services).

22.   James Allen, *The Color of Algorithms: An Analysis and Proposed Research Agenda Deterring Algorithmic Redlining*, 46 FORDHAM URB. L.J. 219, 230 (2019); *see generally* Sara Safransky, *Geographies of Algorithmic Violence: Redlining the Smart City*, INT'L J. URB. & REG. RSCH. 200 (2019); Colin Koopman, *The Political Theory of Data: Institutions, Algorithms, & Formats in Racial Redlining*, 50 POL. THEORY 337 (2021); Mara Ferreri & Romola Sanyal, *Digital Informalisation: Rental Housing, Platforms, and the Management of Risk*, 37 HOUS. STUD. 1035 (2022).

23.   ELIZABETH HINTON, VERA INST. OF JUST., AN UNJUST BURDEN: THE DISPARATE TREATMENT OF BLACK AMERICANS IN THE CRIMINAL JUSTICE SYSTEM 2–6 (2018), https://www.vera.org/downloads/publications/for-the-record-unjust-burden-racial-disparities.pdf [https://perma.cc/HY7Z-VLKD] (summarizing how concentrated surveillance in Black communities leads to disparities and disrupt wealth-making); *see also* NICK NOEL, DUWAIN PINDER, SHELLEY STEWART III & JASON WRIGHT, MCKINSEY & CO., THE ECONOMIC IMPACT OF CLOSING THE RACIAL WEALTH   GAP   18   (2019), https://www.mckinsey.com/~/media/mckinsey/industries/public%20and%20social%20sector/our%20i nsights/the%20economic%20impact%20of%20closing%20the%20racial%20wealth%20gap/the-economic-impact-of-closing-the-racial-wealth-gap-final.pdf   [https://perma.cc/XXK6-DVH7] (exploring the impact of low-income Black families and risk of eviction); *see generally* SIMONE BROWNE, *Introduction, and Other Dark Matters*, *in* DARK MATTERS: ON THE SURVEILLANCE OF BLACKNESS 1 (2015) (analyzing surveillance as a means to control Black bodies and suggesting the monetization of Blackness leads to marginalization and exploitation of Black communities); ASHLEY GROMIS, PRINCETON UNIV. EVICTION LAB, EVICTION: INTERSECTION OF POVERTY, INEQUALITY, AND HOUSING 2–3 (2019) (describing effects of eviction go beyond initial displacement and compounds economic disadvantage).

24.   Christina Yoh, *What Is "PropTech" and Why Companies Are Developing It*, COMMON (June 23, 2020), https://www.common.com/blog/2019/06/what-is-PropTech-and-why-companies-are-developing-it [https://perma.cc/544Z-5RHW] ("PropTech is an innovative approach to real estate in which technology optimizes how people research, rent, buy, sell, and manage a property.").

market) to optimizing property management systems and utilities for brick-and-mortar sites.[25]

PropTech, such as tenant screening tools, has expansive reach in the housing sector.[26] Automated tenant screening tools rely on data embedded with disparities in credit scores, evictions, and arrest records.[27] These disparities are the result of historically racist practices that perpetuated segregation and disfranchised people of color.[28] PropTech systematizes historical bias at scale[29]

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25. Clik.ai, a PropTech company, created an AI underwriting tool that can automatically analyze data such as rent rolls and property cash flow data, allowing investors to quickly assess the value of their properties without sifting through thousands of documents. CLIK.AI, https://www.clik.ai/ [https://perma.cc/9BMW-VZZ5]. Zillow has published 104 million estimates of home real estate prices using their automated valuation model. *What Is a Zestimate?*, ZILLOW, https://www.zillow.com/z/zestimate/ [https://perma.cc/ZPT9-HW65]. Ascendix offers a customer relationship management tool that simplifies the daily operations of real estate companies by automating reports, listings, and customer history management. *AscendixRE CRM for Commercial Real Estate*, ASCENDIX, https://ascendix.com/ascendixre-commercial-real-estate-crm/ [https://perma.cc/6CS5-7W98]. Shapespark is a 3D/virtual reality tool that can assist architects in modeling designs and allow customers to view real-time rendered models of prospective properties. SHAPESPARK, https://www.shapespark.com/ [https://perma.cc/4CGB-SKEH].

26. TECH, BIAS & HOUS. INITIATIVE, THE PROMISE AND PERILS OF RESIDENTIAL PROPTECH, YEAR 1 RESEARCH SUMMARY REPORT 5–6 (2023), https://techequitycollaborative.org/wp-content/uploads/2023/04/TBHI-Y1-Research-Summary-Report.pdf [https://perma.cc/B9KG-Y68F] (explaining key findings about expanded use of PropTech by residential landlords due to growing capital investment); Ila Corcoran, *PropTech: Everything You Need to Know and How It's Disrupting the Real Estate Industry*, BAY ST. CAP. HOLDINGS (Feb. 15, 2023), https://www.baystreetcapitalholdings.com/proptech-everything-you-need-to-know-and-how-it's-disrupting-the-real-estate-industry [https://perma.cc/9ZD3-5724] (highlighting PropTech's many uses and applications in the real estate industry in the United States); *see generally* Nikolai Siniak, Tom Kauko, Sergey Shavrov & Ninoslav Marina, *The Impact of Proptech on Real Estate Industry Growth*, 869 IOP CONF. SERIES: MATERIALS SCI. & ENG'G (2020) (surveying global impact of PropTech on real market and emerging uses).

27. TECH, BIAS & HOUS. INITIATIVE, *supra* note 26, at 10–11 (discussing concerns of analog screening metrics and processes that get combined into algorithm-backed screening services using predictive models). The findings demonstrate how a bad data point (such as inaccurate or biased data) enters the predictive analysis, "multiplying the effect that one disadvantageous data point can have on someone's overall housing determination." *Id.*

28. Allen, *supra* note 22, at 229–34 (noting how historical redlining greatly influenced modern algorithms generated by massive data sets that consist of decades of information built on exclusion and discrimination in financing, marketing, and housing); Wonyoung So, *Which Information Matters? Measuring Landlord Assessment of Tenant Screening Reports*, HOUS. POL'Y DEBATE, Aug. 30, 2022, at 19 (finding that algorithmic scoring using criminal records is problematic because training data is inaccurate and the outcome variable ("desirable tenants") is unclear).

29. Solon Barocas & Andrew D. Selbst, *Big Data's Disparate Impact*, 104 CALIF. L. REV. 671, 689–90 (2016). Despite its well-known basis in racial animus, decision-makers continue to employ redlining tactics via big data and may justify such practices by pointing to cost efficiency. *Id.* at 689; *see also* Mikella Hurley & Julius Adebayo, *Credit Scoring in the Era of Big Data*, 18 YALE J.L. & TECH. 148, 151, 156, 172 (2016) (arguing that FICO scoring could systematically exclude some populations that have been historically underrepresented or unfairly represented in the credit market). By 2016, ten states had banned the practice of employers using credit scores due to their disproportionate effect on low-income applicants and people of color. CATHY O'NEIL, WEAPONS OF MATH DESTRUCTION: HOW BIG DATA INCREASES INEQUALITY AND THREATEN DEMOCRACY 128–29 (2016); N.Y.C. LOC. LAW No. 37 (2015) (codified at N.Y.C. ADMIN. CODE § 8-107(9)(a)); N.Y.C. COMM'N ON HUM. RTS.,

because PropTech is regularly used by real estate professionals and landlords, as well as by the public sector in affordable housing lotteries.[30]

Fortunately, the Fair Housing Act (FHA) has a rule, called discriminatory effect, that is useful for addressing institutional discrimination. Discriminatory effect law allows plaintiffs to file claims of discrimination in one of two ways: (1) by claiming that a neutral policy or practice harms a legally protected group of people and causes a disparate impact or (2) by claiming a neutral policy or practice harms a community by "creating, increasing, reinforcing, or perpetuating segregated housing patterns."[31] Disparate impact claims concern harm to protected groups of people relative to nonprotected groups, whereas segregative effect claims concern community harm due to segregation. Throughout this Article, I use the term *discriminatory effect* to encompass both disparate impact liability and segregative effect theory.

Disparate impact claims have dominated legal challenges to algorithmic redlining, and *Louis* and *CoreLogic* exemplify the emergent litigation area. Plaintiffs in these cases argue that under the FHA, automated tenant screening tools are unlawful because of the disproportionately negative effects on Black and Brown tenants.[32] In fair housing lawsuits broadly, disparate impact and segregative effect theory have both been valuable litigation strategies. In certain instances, disparate impact is a more appropriate strategy;[33] in other instances, segregative effect is more effective.[34] Often, both theories could be applied to the same set of facts. Some courts have referenced only disparate impact when

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LEGAL ENFORCEMENT GUIDANCE ON THE STOP CREDIT DISCRIMINATION IN EMPLOYMENT ACT 1, https://www.nyc.gov/assets/cchr/downloads/pdf/CreditHistory-InterpretiveGuide-LegalGuidance.pdf [https://perma.cc/BKU6-W58Q] (noting legislative intent to make it unlawful for employers to request or use an applicant's consumer credit history or creditworthiness for employment purposes because it has a disproportionate effect on disadvantaged groups including communities of color).

30.   *See supra* note 25 (outlining expanded use of PropTech in real estate); Allen, *supra* note 22, at 251–52. Algorithms are used by state actors, like prosecutors and the judiciary, in risk assessment tools at custody hearings. Municipalities use algorithms for affordable housing lotteries, which have created bias issues.

31.   Implementation of the Fair Housing Act's Discriminatory Effects Standard, 78 Fed. Reg. 11460 (Feb. 15, 2013) (codified at 24 C.F.R. § 100(a) (2013)). More specifically, segregative effect claims require "'segregated housing patterns because of race [or other protected characteristic]' in the relevant community; and [that] the defendant's challenged practice must, 'create[], increase[], reinforce[], or perpetuate[]'" segregated housing patterns. Robert G. Schwemm, *Segregative-Effect Claims Under the Fair Housing Act*, 20 N.Y.U. J. LEGIS. & PUB. POL'Y 709, 713, 738 (2017).

32.   Amended Complaint, *supra* note 1, at 1–2 (outlining arguments on behalf of plaintiffs); Complaint at 22, Conn. Fair Hous. Ctr. v. CoreLogic Rental Prop. Sols., LLC, 369 F. Supp. 3d 362 (D. Conn. 2019) (No. 3:18-CV-705) (asserting claims on behalf of plaintiffs).

33.   *See supra* note 31 (noting that segregative effect claims are not as applicable in already integrated communities).

34.   *See* United States v. City of Black Jack, 508 F.2d 1179, 1183, 1188 (8th Cir. 1974) (holding that a zoning ordinance barring the construction of new multifamily housing units in a predominantly White area violated the FHA).

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describing what is a combination of both theories.[35] Nevertheless, PropTech litigation has underscored some of the challenges of proving disparate impact claims.[36]

Against this backdrop, I propose that fair housing litigators and regulators consider reaching for the other legal tool in the FHA's discriminatory effect[37] arsenal.[38] Segregative effect theory provides that a neutral policy or practice violates the FHA if it creates, increases, reinforces, or perpetuates segregation.[39] For example, a zoning ordinance would increase segregation and violate the FHA's segregative effect theory if it prohibited construction of affordable multifamily units in a White community and the units were intended for occupancy by low-income families of color.[40] Segregative effect theory has the potential to counter algorithmic redlining in a way that is distinct from disparate impact theory. Disparate impact theory requires an across-the-board policy or practice (more than a one-time decision) and a comparative statistical analysis between majority and minority groups.[41] In contrast, segregative effect theory accepts either an across-the-board policy or a one-time decision, as well as a more narrow statistical analysis focused on geography, allowing for easier data compilation.[42]

Segregative effect theory could particularly strengthen the *Louis*[43] case, which illustrates the complexity of the disparate impact theory.[44] The *Louis*

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35. *See, e.g.*, Mhany Mgmt., Inc. v. Cnty. of Nassau, 819 F.3d 581, 619 (2d Cir. 2016) (referencing both disparate impact and segregative effect rules); Huntington Branch, NAACP v. Town of Huntington, 844 F.2d 926, 938 (2d Cir. 1988) (finding both disproportionate harm to Black residents and the segregative impact on the entire community).

36. In 2007, plaintiffs bringing an FHA disparate impact challenge to cost-increasing zoning regulation failed to present prima facie proof. Reinhart v. Lincoln Cnty., 482 F.3d 1225, 1226, 1230–32 (10th Cir. 2007) (affirming summary judgment dismissal). Between 1971 and June 2013, plaintiffs obtained positive outcomes in only 20 percent of their FHA disparate impact claims considered on appeal. Stacey E. Seics_hnaydre, *Is Disparate Impact Having Any Impact? An Appellate Analysis of Forty Years of Disparate Impact Claims Under the Fair Housing Act*, 63 AM. U. L. REV. 357, 357 (2013). Plaintiffs' positive FHA disparate impact outcomes have been affirmed only 33.3 percent of the time, while defendants' affirmation rate is 83.8 percent. *Id.*

37. Fair Housing Act, 42 U.S.C. §§ 3601–19 (1968).

38. *See supra* note 31 (outlining segregative effect theory).

39. Implementation of the Fair Housing Act's Discriminatory Effects Standard, 78 Fed. Reg. at 11482 (2013) (codified at 24 C.F.R. § 100(a) (2013)) (citing legal standard for segregative effect theory).

40. *See* United States v. City of Black Jack, 508 F.2d 1179, 1183, 1188 (8th Cir. 1974) (holding that a zoning ordinance barring the construction of new multifamily housing units in a predominantly White area violated the FHA).

41. *See infra* Part II.B (discussing disparate impact standard).

42. *Id.* (discussing segregative effect standard).

43. Louis v. SafeRent Sols., LLC, No. 1:22-cv-10800 (D. Mass. May 25, 2022); Conn. Fair Hous. Ctr. v. CoreLogic Rental Prop. Sols., LLC, 478 F. Supp. 3d 259, 279 (D. Conn. 2020). The *Louis* case is being heard in the United States District Court for the District of Massachusetts.

44. The nonprofit organization Connecticut Fair Housing sued SafeRent Solutions (formerly CoreLogic Property Rental Solutions) on behalf of Ms. Arroyo for violating the FHA and alleged that CoreLogic's criminal background reporting system had a disparate impact on Black and Latinx people who are overpoliced and arrested more often than White people. The court noted that "disparities adverse

plaintiffs allege violations of the FHA under disparate impact theory,[45] claiming that SafeRent tenant screening services[46] disproportionately discriminate against Black and Hispanic rental applicants.[47] To prove this claim, the plaintiffs must demonstrate that SafeRent technology had a greater adverse impact on one racial group (Black and Brown people) than another (White people).[48] Prima facie proof would require a comparison between Black and Brown applicants and White applicants that would demonstrate landlords disproportionately excluded Black and Hispanic applicants using SafeRent tenant screens.[49] The difficulty with proving such a claim is the evidence and analysis required to demonstrate a lesser impact on White applicants because statistical analysis alone, while useful, is insufficient.[50] Summary judgement timelines and evidentiary burdens requiring a showing of a sufficient disparity could be challenging. Segregative effect theory faces similar challenges concerning data compilation but provides a more accessible avenue than disparate impact theory provides for finding

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to African Americans and Latinos and in favor of [W]hites exist at all stages of the criminal justice process: in arrest rates, in jail detention rates, and in prison incarceration rates." *Connecticut Fair Housing Center, et al. v. CoreLogic Rental Property Solutions*, *supra* note 3. The case concluded in the U.S. District Court for the District of Connecticut in November 2022. *See* Minute Entry for Proceedings Held Before Judge Vanessa L. Bryant at 2, Conn. Fair Hous. Ctr. v. CoreLogic Rental Prop. Sols., LLC, No. 3:18-cv-00705 (D. Conn. Nov. 8, 2022), ECF No. 305. The final opinion was issued on July 20, 2023, and ruled against the plaintiffs. The opinion offered no analysis concerning the disparate impact claims because the court concluded that the plaintiffs failed to meet their burden that CoreLogic violated the FHA by making housing unavailable. Conn. Fair Hous. Ctr. v. CoreLogic Rental Prop. Sols., No. 3:18-cv-705-VLB, slip op. at 46 (D. Conn. July 20, 2023).

45.   CoreLogic plaintiffs also claim disparate impact concerning the use of criminal arrest history by CoreLogic technology; however, disparate impact theory was the best approach in CoreLogic because the plaintiff, Ms. Arroyo, lived in an integrated community in Connecticut, making segregative effect theory less useful. *See* Artisan/American Corp. v. City of Alvin, 588 F.3d 291, 299 (5th Cir. 2009) (affirming dismissal where plaintiff failed to show that his denial of a subsidized housing permit furthered racial segregation). The theory requires the community at issue be segregated. *See supra* note 31 (identifying court segregation requirement).

46.   SafeRent   Sols.,   https://saferentsolutions.com/   [https://perma.cc/26WC-UD9X] (displaying rental search criteria); *see also SafeRent Score*, *supra* note 5.

47.   Amended Complaint, *supra* note 1, at 29 (listing causes of action). Under count one, plaintiffs state "Defendant SafeRent's policies and practices have a disproportionate adverse impact on Black and Hispanic rental applicants. This disproportionate impact is the direct result of Defendant's SafeRent Score tenant screening report . . . ." Plaintiffs seek to end defendants' discriminatory tenant screening practices and remove barriers imposed by defendants which they claim create an uneven playing field for Black and Hispanic rental applicants. *Id.* at 2. Plaintiffs also filed state claims alleging defendants discriminate on the basis of race and source of income. *Id.* at 32–34.

48.   *See* Metro. Hous. Corp. v. Vill. of Arlington Heights, 558 F.2d 1283, 1290 (7th Cir. 1977); Tex. Dep't of Hous. & Cmty. Affs. v. Inclusive Cmtys. Project, Inc., 576 U.S. 519, 536 (2015) (noting all nine circuits support disparate impact claims as cognizable under the FHA); Implementation of the Fair Housing Act's Discriminatory Effect Standard, 78 Fed. Reg. 11460, 11468 (Feb. 15, 2013) (HUD regulation explaining requirement to show disproportionate impact on burdened group).

49.   Implementation of the Fair Housing Act's Discriminatory Effect Standard, 78 Fed. Reg. at 11468 (discussing requirement to show disproportionate treatment). Statistical analysis can be used to prove disparity among groups; however, the regulation does not formalize the statistical analysis and references the need for a case-by-case inquiry. *Id.*

50.   *Inclusive Cmtys.*, 576 U.S. at 521 (requiring a showing of a neutral policy causing the disparity in addition to statistics).

discriminatory effect.[51] For reasons explained in this Article, elevating the use of segregative effect theory can improve chances of success when challenging PropTech that may perpetuate segregated living patterns.[52]

The U.S. District Court for the District of Connecticut ultimately ruled against the plaintiffs in *CoreLogic*, holding that the plaintiffs failed to meet their burden that CoreLogic violated the FHA because they were not final decision-makers concerning housing.[53] However, *Louis* is still pending, and a successful outcome in *Louis* may result in modified use of SafeRent by landlords or make screening processes more transparent and allow declined tenants to seek redress.[54] A proactive anti-segregation strategy for addressing algorithmic redlining should include segregative effect theory in addition to disparate impact claims.[55] Segregative effect theory can center entire communities and has a track record of being more successful on appeal than disparate impact claims.[56]

A growing body of literature examines inequities resulting from increased use of automated decision-making tools,[57] but there is still a need for scholarship demonstrating how algorithms perpetuate or reinforce segregation. An important doctrinal question asks whether algorithmic redlining fits within the categorical landscape of forces that may cause a segregative effect.[58] I suggest yes, and this Article explores why.

Significant scholarly work in the area of algorithmic bias and disparate impact theory shows how big data is imperfect and results in algorithms inheriting the prejudices of prior decision-makers.[59] Scholars posit that the best "doctrinal hope" for people negatively affected by bias in big data is disparate impact doctrine.[60] The study of disparate impact by big data algorithms in the

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51. Data compilation is required to prove segregative effect; however, once the data is attained, the evidentiary burden is less. *See infra* Part III.A (discussing beneficial application of segregative effect theory).

52. Applying the theory depends on whether the community at issue is racially homogenous. *See infra* Part II.B (outlining three-step framework for segregative effect claims).

53. Conn. Fair Hous. Ctr. v. CoreLogic Rental Prop. Sols., No. 3:18-cv-705-VLB, slip op. at 44 (D. Conn. July 20, 2023) (highlighting non-ultimate-decision-maker liability caused the plaintiffs their case).

54. *See id.*

55. Seicshnaydre, *supra* note 36, at 361 (elucidating remedies for housing barrier cases often concern the removal of barriers that perpetuate racial segregation while housing improvement cases often prevent displacement from housing opportunities where they already exist). Housing barrier cases will generally promote racial integration by removing the barrier, which may not be the case with housing improvement cases where segregation is already concentrated.

56. *Id.* at 400.

57. *See, e.g.*, Rashida Richardson, Jason M. Schultz & Kate Crawford, *Dirty Data, Bad Predictions: How Civil Rights Violations Impact Police Data, Predictive Policing Systems, and Justice*, 94 N.Y.U. L. REV. ONLINE 15, 18–20 (2019); Allen, *supra* note 22, at 222–23; Valerie Schneider, *Locked Out by Big Data: How Big Data, Algorithms and Machine Learning May Undermine Housing Justice*, 52 COLUM. HUM. RTS. L. REV. 251, 254–55 (2020); Ignacio N. Cofone, *Algorithmic Discrimination Is an Information Problem*, 70 HASTINGS L.J. 1389, 1392–94 (2019).

58. *See infra* Part II.B (laying out discriminatory effect evidentiary requirements).

59. Barocas & Selbst, *supra* note 29, at 672.

60. *Id.*

employment context extends into housing.[61] As an extension of this research, scholars are also identifying how PropTech specifically impacts applicants of color.[62] What is missing from the literature is how algorithmic redlining in PropTech affects segregation as a result of prejudice embedded in data generated from decades of discrimination in housing markets. Also missing is an exploration of segregative effect doctrine as a legal strategy to address algorithmic redlining.

I aim to elevate segregative effect theory and intentionally separate it from the umbrella term "disparate impact" as used by many scholars. Building upon the scholarship of algorithmic bias and PropTech, this Article makes two contributions. First, it raises the issue that algorithmic redlining in PropTech may contribute to racial segregation. Second, it applies a novel application of discriminatory effect doctrine by highlighting segregative effect theory as an underutilized legal strategy. While issues concerning algorithmic bias are ever-changing, PropTech, like automation of tenant-screening tools, compounds the effects of segregation by systemizing decision-making algorithms that rely on biased data, a problem that can be mitigated by exercising the full potential of discriminatory effect doctrine.

The Article proceeds as follows. Part I explores the operative force of PropTech on people of color and how automation of tenant-screening tools maintains segregated housing patterns. It also chronicles the evolution of PropTech and illustrates its ubiquity within housing markets and overlapping financial markets. Part II examines discriminatory effect doctrine and highlights critical differences between disparate impact and segregative effect scrutiny. Part III applies segregative effect doctrine in the algorithmic redlining context and examines the theory's potential for broader application to counter PropTech's effects on persistent segregation.

I.
HOUSING SEGREGATION AND ALGORITHMIC REDLINING

Scholars use *scored society* to describe the effect algorithms have on people's lives.[63] James A. Allen explains that we live in a "culture driven by evaluating people based on shadowy metrics and ratings."[64] We see this problem arising in the number of lawsuits brought against companies and state actors that use technology to automate processes such as tenant screens, appraisals, and

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61.   *See generally* Schneider, *supra* note 57; Allen, *supra* note 22.

62.   Erin McElroy, Wonyoung So & Nicole Weber, *Keeping an Eye on Landlord Tech*, SHELTERFORCE (Mar. 25, 2021), https://shelterforce.org/2021/03/25/keeping-an-eye-on-landlord-tech/ [https://perma.cc/H92R-WNT4].

63.   Danielle K. Citron & Frank Pasquale, *The Scored Society: Due Process for Automated Predictions*, 89 WASH. L. REV. 1, 4–5 (2014); *see also* Allen, *supra* note 22, at 229.

64.   Allen, *supra* note 22, at 229.

lending.[65] Allen illustrates how biased algorithms show up in the housing context.[66] For instance, "algorithmic redlining" is a result of segregationist housing policies and "pencil redlining" that generated massive data sets built on racial exclusion.[67] Housing finance was a major hurdle for Black and Brown families shut out of wealth-building opportunities during the housing boom of the 1950s.[68] Algorithms that rely on data sets generated in a time when racial exclusion was the norm in legal, financial, and social institutions necessarily result in algorithmic redlining because they reproduce, reinforce, and perpetuate already existing segregation.[69] In this Section, I give a brief overview of the FHA to illustrate its importance in PropTech governance. Next, I explain how tenant screening tools that use algorithms rely on measures, such as eviction statistics, criminal data, and credit histories, that are shaped by racially discriminatory practices.

A. Significance of the FHA in Tech Governance

At first glance, the reasons for denying the Louis, Douglas, and Arroyo applications appear legitimate because landlords may legally screen prospective

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65. *See* Conn. Fair Hous. Ctr. v. CoreLogic Rental Prop. Sols., LLC, 478 F. Supp. 3d 259, 259 (D. Conn. 2020) (alleging that CoreLogic discriminated against individual plaintiff through use of CrimSafe tenant screening software); *see also* Amended Complaint, *supra* note 1, at 1–2 (alleging SafeRent discriminated against plaintiffs through use of SafeRent Score); Complaint, Nat'l Fair Hous. Alliance v. Redfin Corp., No. 2:20-cv-01586 (W.D. Wash. Oct. 28, 2020) (alleging that Redfin engaged in housing discrimination via their home pricing policy); *Filtering Practices of Social Media Platforms: Hearing Before the H. Comm. on the Judiciary*, 114th Cong. (2018) (statement of Rep. Marsha Blackburn, Chairman, S. Comm. on Commc'ns & Tech.); Amanda Taub & Max Fisher, *Where Countries Are Tinderboxes and Facebook Is a Match*, N.Y. TIMES (Apr. 21, 2018), https://www.nytimes.com/2018/04/21/world/asia/facebook-sri-lanka-riots.html [https://perma.cc/9HY3-L667] (examining how Facebook can influence elections and cause public unrest); Pich v. Lightbourne, 164 Cal. Rptr. 3d 388, 391 (Cal. Ct. App. 2013) (plaintiff challenging a computerized benefit platform that allegedly produced erroneous benefit terminations); Hous. Fed'n of Teachers v. Hous. Indep. Sch. Dist., 251 F. Supp. 3d 1168, 1171 (S.D. Tex. 2017) (teachers alleging they were inappropriately fired due to an algorithm that evaluated performance); *see generally* VIRGINIA EUBANKS, AUTOMATING INEQUALITY (2018) [hereinafter EUBANKS, AUTOMATING INEQUALITY] (conducting an analysis of how automated decisions perpetuate inequality); Tanvi Misra, *When Welfare Decisions Are Left to Algorithms*, ATL. (Feb. 15, 2018), https://www.theatlantic.com/business/archive/2018/02/virginia-eubanks-automating-inequality/553460/ [https://perma.cc/RH3N-QJYV] (reviewing Eubanks's book).

66. *See generally* Allen, *supra* note 22.

67. *Id.* at 232.

68. *Id.* at 233–35. Allen also explains that algorithms used in online housing markets are also marked by biased algorithms and can "act as editors of what options consumers view." *Id.* at 234.

69. Allen argues that the FHA did not go far enough to accomplish the goal of promoting homeownership for Black and Brown people. The FHA only works for people who have accumulated enough wealth to purchase property despite the many oppressive hurdles preventing Black wealth-making. *Id.* at 232. During the period of White flight to the suburbs, White people were able to take advantage of housing policies that excluded Blacks. From racially restrictive covenants to no financing for prime mortgages, Blacks were unable to take advantage of the public investments enjoyed by White people. Allen suggests that the most influential and harmful redlining today stems from the financial sector and automated decision-making used to determine creditworthiness. *Id.*

tenants for a variety of criteria including credit scores, eviction history, and criminal records. Screening standards enable landlords to exercise their fundamental property right to exclude.[70] However, property rights are not absolute.[71] The 1968 FHA (also referred to as Title VIII) limits exclusion considered discriminatory. The FHA makes it illegal to "refuse to sell or rent . . . or to refuse to negotiate for the sale or rental of . . . a dwelling to any person because of race, color, religion, sex, familial status, or national origin."[72] This language prohibits housing providers from intentionally discriminating (a practice known as disparate treatment) against members of a protected class.[73]

Courts have interpreted the FHA to incorporate discriminatory effect theory.[74] Discriminatory effect theory prohibits policies or practices that appear nondiscriminatory on their face but have a disproportionately negative effect on members of legally protected groups or perpetuate segregation.[75] Discriminatory effect theory is a powerful tool for fair housing advocates. This theory—which encompasses both disparate impact and segregative effect—dates back to appellate decisions from the 1970s[76] and was most recently affirmed by the Supreme Court in *Texas Department of Housing & Community Affairs v. Inclusive Communities Project, Inc.* (*ICP*).[77]

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70. *See* Shyamkrishna Balganesh, *Demystifying the Right to Exclude: Of Property, Inviolability, and Automatic Injunctions*, 31 HARV. J.L. & PUB. POL'Y 593, 596 (2008) (describing the foundation of William Blackstone's bundle of property rights and the right to exclude).

71. *Id.* at 602–10 (describing normative approaches to property rights under positivist legal theory).

72. 42 U.S.C. § 3604.

73. *Id.* (indicating that it is unlawful to have "an intention to make any such preference, limitation, or discrimination").

74. Tex. Dep't of Hous. & Cmty. Affs. v. Inclusive Cmtys. Project, Inc., 576 U.S. 519, 545–46 (2015) (affirming disparate impact theory under the FHA); Brian Sawers, *Race and Property After the Civil War: Creating the Right to Exclude*, 87 MISS. L.J. 703, 705–08 (2018) (suggesting the change in American property law to embolden the right to exclude was largely influenced by the desire to control post-bellum Black labor); Elliot Anne Rigsby, *Understanding Exclusionary Zoning and Its Impact on Concentrated Poverty*, CENTURY FOUND. (June 23, 2016), https://tcf.org/content/facts/understanding-exclusionary-zoning-impact-concentrated-poverty/ [https://perma.cc/HAJ8-UC6L]; Zuch v. Hussey, 394 F. Supp. 1028, 1047 (E.D. Mich. 1975) (holding steering is prohibited by § 3604(a) of the Fair Housing Act, which makes it unlawful to "otherwise make unavailable or deny, a dwelling to any person" on the basis of race); Implementation of the Fair Housing Act's Discriminatory Effects Standard, 78 Fed. Reg. 11460, 11461 (Feb. 15, 2013) (to be codified at 24 C.F.R. § 100.500) (explaining how HUD has consistently determined in different settings that the FHA is violated by "facially neutral practices that have an unjustified discriminatory effect on the basis of a protected characteristic").

75. Implementation of the Fair Housing Act's Discriminatory Effects Standard, 78 Fed. Reg. at 11461.

76. Metro. Hous. Corp. v. Vill. of Arlington Heights, 558 F.2d 1283, 1288–94 (7th Cir. 1977); United States v. City of Black Jack, 508 F.2d 1179, 1184–85 (8th Cir. 1974); *see* discussion *infra* Part I.C.1.

77. 576 U.S. at 545 (holding that discriminatory effect theory is a viable claim under the FHA). The Court also acknowledges the FHA's purpose was to prohibit arbitrary barriers that create discriminatory effects or perpetuate segregation. *Id.* at 540. This acknowledgment suggests that segregative effect theory remains unchanged and is consistent with precedent.

The right to exclude others from one's property, a basic principle of property law, is a legal maxim that operated to prohibit people of color from living in White spaces and preserved residential racial segregation through federal and state policies.[78] The civil rights movement confronted state-sanctioned segregation and eventually subjected the home-buying industry to protective legislation and jurisprudence.[79] At the federal level, the FHA[80] purports "to provide, within constitutional limitations, for fair housing throughout the United States,"[81] that is, to realize civil rights in housing. The FHA endeavored to achieve what Dr. Martin Luther King, Jr., referred to as "the promised land" in his "I've Been to the Mountaintop" speech the night before his assassination.[82] In King's Mountaintop speech, the promised land represents a place where all God's children will have equal protection of the laws, as promised in the Constitution, and be treated as equals in life, liberty, and property.[83] The FHA is supposed to ensure that property transfers and ownership rights of protected groups are free from discrimination. The FHA's authors strove to integrate our segregated country, and courts have liberally construed the Act[84] to uphold the Thirteenth Amendment's purpose "to eradicate the last vestiges and incidents of a society half slave and half free"[85] and to help all people, regardless of their identities, reach the promised land.

Without stable housing for individuals and families, the foundation of a government that thrives on democratic participation becomes increasingly tenuous.[86] Socioeconomic and political forces collided in the post-World War II

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78. *See* Sawers, *supra* note 74, at 705–08 (suggesting the change in American property law to embolden the right to exclude was largely influenced by the desire to control post-bellum Black labor); Rigsby, *supra* note 74.

79. *See* U.S. COMM'N ON CIV. RTS., 1961 COMMISSION ON CIVIL RIGHTS REPORT 189 n.16 (1961) (citing N.Y.C. ADMIN. CODE, ch. 41, title X (1957), which was the first among states to prohibit discrimination in a portion of the housing market). Seventeen states followed New York in passing antidiscrimination laws. *Id.*; *see also id.* at 198–99 app. VI tbl.1 (listing state antidiscrimination housing laws); *id.* at 200–01 app. VI tbl.2 (listing city housing ordinances and resolutions).

80. 42 U.S.C. §§ 3601–19; ROBERT G. SCHWEMM, HOUSING DISCRIMINATION: LAW & LITIGATION § 5:2 (2017) (outlining the legislative history of the FHA).

81. 42 U.S.C. § 3601.

82. Martin Luther King, Jr., I've Been to the Mountaintop (Apr. 3, 1968).

83. *Id.*

84. *See, e.g.*, Trafficante v. Metro. Life Ins. Co., 409 U.S. 205, 209 (1972) (holding that Congress intended to define standing broadly).

85. Jones v. Alfred H. Mayer Co., 392 U.S. 409, 441 n.78 (1968); *see id.* at 440–41 (holding that Congress has the authority to enforce the Thirteenth Amendment through legislation).

86. "Residential stability is fundamental to fostering an environment that promotes civic engagement. Stable neighborhoods allow longtime residents to form social ties and invest in shared goals, often leveraging the political system to do so. Unstable neighborhoods, characterized by high levels of residential churn, compromise the emergence of collective efficacy—that combination of neighborhood-based social cohesion and a synergistic investment in the common good." Gillian Slee & Matthew Desmond, *Eviction and Voter Turnout: The Political Consequences of Housing Instability*, 51 POL. & SOC'Y 3, 5 (2023) (citing Robert J. Sampson, Stephen W. Raudenbush & Felton Earls, *Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy*, 277 SCI. 918 (1997)); *see*

era, and federal and state policy began to prioritize housing for working families through amortized mortgages, tax incentives for homeownership, and more.[87] However, federally backed policies incentivizing homeownership were primarily for White people during the suburbanization boom of the 1950s.[88] Fortunately, after enactment of the FHA, explicit "Whites only" policies became illegal. Furthermore, states began to pass fair housing laws that met or exceeded the basic rights required by the FHA.[89]

The culture of inequity in the United States reveals itself in real estate markets, which track an industry where personal life intersects with political life, the economy, and human prejudice at the most granular level. The lasting impact

also Brian J. McCabe, *Are Homeowners Better Citizens? Homeownership and Community Participation in the United States*, 91 SOC. FORCES 929, 941 (2013) (finding that long-term residential stability among renters and homeowners (five years or more) doubles the odds of participation in local and national elections); Benjamin Highton, *Residential Mobility, Community Mobility, and Electoral Participation*, 22 POL. BEHAV. 109, 117 (2000) (finding that moving from one home to another, irrespective of the distance, lowers voter turnout significantly). Slee and Desmond also found that residential eviction contributed to voter demobilization in the 2016 presidential election. Slee & Desmond, *supra*, at 4. Eviction has been shown to decrease voter turnout among both stable and unstable communities, but participation among low-income, Black, and Hispanic communities is likely the most affected given eviction's disproportionate effect on those groups. *Id.*

87.   FHA insured mortgages aimed to "encourage production of new homes for families in income classifications which were not considered as feasible markets for new homes under the previous systems of home financing." FED. HOUS. ADMIN., SEVENTH ANNUAL REPORT OF THE FEDERAL HOUSING ADMINISTRATION 17 (1942). Section 203 of Title II provided single long-term, amortized mortgages at a minimum interest rate, which brought homeownership "within easy reach of moderate and low-income American families." *Id.* at 44. Section 207 of Title II provided long-term amortized mortgages for planned-community, multifamily residential developments. *Id.* at 85. The Department of Veterans Affairs mortgage program of 1944, part of the "G.I. Bill," did not require down payments from veterans on the theory that they were not paid enough to generate savings. Michael S. Carliner, *Development of Federal Homeownership "Policy,"* 9 HOUS. POL'Y DEBATE 299, 308 (1998). In 1948, the FHA increased the maximum mortgage term to thirty years. Richard K. Green & Susan M. Wachter, *The American Mortgage in Historical and International Context*, 19 J. ECON. PERSPS. 93, 96 (2005). In 1950, Congress permitted down payments as low as 5 percent, Housing Act of 1950, Pub. L. No. 81-475, § 104(a), 64 Stat. 48, 51–52 (1950), and to 3 percent by 1957, Housing Act of 1957, Pub. L. No. 85-104, §101, 71 Stat. 294, 295 (1957) (amending Section 203(b) of the National Housing Act of 1934). By 1956, the FHA raised the maximum loan-to-value ratio to 95 percent for financing new homes and to 90 percent for existing homes. *Id.* In the 1950s, the FHA financed the cost of purchasing and clearing land for urban renewal efforts. FRANCESA R. AMMON & WENDELL E. PRITCHETT, THE LONG HISTORY OF UNFAIR HOUSING 23 (2021). City governments were responsible for covering the costs of constructing and finalizing these projects. *Id.*

88.   RICHARD ROTHSTEIN, THE COLOR OF LAW: A FORGOTTEN HISTORY OF HOW OUR GOVERNMENT SEGREGATED AMERICA 70–73 (2017) (discussing Whites-only housing developments such as Oak Forest in Texas, Lakewood in California, and Levittown in New York, which were funded exclusively by the federal government).

89.   The FHA, 42 U.S.C. § 3604, bars discrimination only on the basis of race, color, religion, sex, handicap, and familial status. Several states have expanded fair housing protections to include protected classes in addition to those already protected under the FHA, such as marital status, source of income, sexual orientation, gender identity, age, ancestry, and military service. SCHWEMM, *supra* note 80, § 30:3 (listing current state fair housing statutes); *see also* N.J. STAT. ANN. § 10:5–12 (West 2021) ("domestic partnership status"); 34 R.I. GEN. LAWS § 34-37-2.4 (1956) ("victim of domestic violence"); MASS. GEN. LAWS ch. 151B, § 4.7 (2018) ("genetic information"); MICH. COMP. LAWS § 37.2202 (2009) ("height" and "weight").

of racial exclusion in real estate is evident in the ever-expanding racial wealth gap, exclusionary zoning policies, and not in my backyard ethos (NIMBYism)—trends that result in continued racial segregation.[90] Housing discrimination today manifests differently than in pre-FHA times; it is less explicit, but just as widespread and systemic.[91] Moreover, the invention of digital forms of discrimination is particularly insidious because the illusion of tech neutrality makes it harder to prove and counter inequity despite the prevalence of racism in housing markets.[92] The root cause of segregation derives from the same culture of inequity that underlies current housing policy and real estate practice. This root cause makes the FHA significant in its application to thwart algorithmic redlining and technology bias.

B. *Overview of Algorithmic Redlining and Technology Bias*

To illustrate the connection between segregationist real estate practices, algorithmic redlining, and PropTech, it is helpful to understand how algorithms function. Artificial intelligence (AI) is an umbrella term describing various ML algorithms and predictive technologies.[93] Algorithms are mathematical equations that "define the process through which a decision" (or prediction) is made. Algorithms use data inputs (such as digital footprints on the internet, public data collected by the state, and big data generally[94]) to make decisions.[95]

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90. Conor Dougherty, *Twilight of the NIMBY*, N.Y. TIMES (June 5, 2022), https://www.nytimes.com/2022/06/05/business/economy/california-housing-crisis-nimby.html [https://perma.cc/W3W2-NFVH] (discussing the tension between homeowners and housing advocates seeking higher density housing); Rigsby, *supra* note 74.

91. *See* MARGERY AUSTIN TURNER, ROB SANTOS, DIANE K. LEVY, DOUG WISSOKER, CLAUDIA ARANDA & ROB PITINGOLO, URB. INST., HOUSING DISCRIMINATION AGAINST RACIAL AND ETHNIC MINORITIES 2012 x–xi (2013) (summarizing that explicit discrimination is less common but still persists today despite anti-discrimination laws), https://www.huduser.gov/portal/Publications/pdf/HUD-514_HDS2012.pdf [https://perma.cc/93NU-W364]. Under the Equal Protection Clause of the Fourteenth Amendment, discriminatory intent is required to prove racial discrimination, which is an incredibly difficult standard to prove because discrimination manifests differently today than it did in the 1960s. U.S. CONST., amend. XIV, §1; *see* Vill. of Arlington Heights v. Metro. Hous. Dev. Corp., 429 U.S. 252, 270 (1977) (holding developer failed to show discriminatory intent for zoning policy); Washington v. Davis, 426 U.S. 229, 242 (1976) (holding that intent is required for a violation of equal protection under the Constitution).

92. RUHA BENJAMIN, RACE AFTER TECHNOLOGY: ABOLITIONIST TOOLS FOR THE NEW JIM CODE 7 (2019) (explaining that technology is perceived as objective and free of bias). Benjamin states "the employment of new technologies that reflect and reproduce existing inequities but that are promoted and perceived as more objective or progressive than the discriminatory systems of a previous era" are an issue. *Id.*

93. *See* Sonia M. Gipson Rankin, *Technological Tethereds: Potential Impact of Untrustworthy Artificial Intelligence in Criminal Justice Risk Assessment Instruments*, 78 WASH. & LEE L. REV. 647, 655–57 (2022) (explaining the difficulty of defining the evolving science of AI).

94. *Id.* at 661 (describing major categories of data collection including big data and the Internet of Things).

95. *Id.* at 657. Algorithms are mathematical equations that often use a regression analysis. Amy Gallo, *A Refresher on Regression Analysis*, HARV. BUS. REV. (Nov. 4, 2015), https://hbr.org/2015/11/a-refresher-on-regression-analysis [https://perma.cc/2N9S-D9ND] (reviewing concept of regression analysis).

ML and its subset of deep learning (DL) give computers the ability to learn without being explicitly programmed.[96] ML and DL algorithms are comprised of an interconnected system of layered nodes or neurons, referred to as neural networks, that resemble the human brain.[97] Both ML and DL algorithms "allow software to learn tasks by exposing multi-layered neural networks to copious amounts of data."[98] The data, referred to as training data, teaches algorithms to respond in certain ways.[99]

Neural networks can be supervised, unsupervised, or both, depending on desired functionality.[100] Both models are susceptible to bias if the data used to train them is biased. Supervised learning models require data scientists to look at target data and label the expected outcome when given certain inputs.[101] As a result, bias can be introduced through the labels chosen by data scientists or the biases in the selection of the training data.[102] Accordingly, supervised models are used when data scientists want the AI to take certain things into account and make accurate predictions.[103] In contrast, unsupervised learning models use DL. As the name suggests, unsupervised AI is given free rein to determine data groupings without human intervention.[104] Unsupervised models are beneficial for discovering hidden patterns and exploratory data analysis.[105] While unsupervised AI has a measure of autonomy, bias can still be introduced through the training data or the assumptions made by the algorithm as a result of latent representations that reflect bias inherent in the data.[106] If the training data is flawed or limited, then the AI will also be flawed or limited.

Bias in neural networks could be addressed by carefully selecting and preprocessing data used for training and evaluating a model's performance on a diverse set of data to ensure it is not biased toward specific groups. Techniques such as data augmentation, regularization, and adversarial training can be used to mitigate the impact of biases in both supervised and unsupervised learning

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96. Gipson Rankin, *supra* note 93, at 657.

97. *What Is a Neural Network?*, IBM, https://www.ibm.com/topics/neural-networks [https://perma.cc/H7BF-5NCJ] (describing how neural networks function).

98. Gipson Rankin, *supra* note 93, at 658; *see also id.* at 656 (citing Meenal Dhande, *What Is the Difference Between AI, Machine Learning and Deep Learning?*, GEOSPATIAL WORLD (July 3, 2020), https://www.geospatialworld.net/blogs/difference-between-ai%EF%BB%BF-machine-learning-and-deep-learning/ [https://perma.cc/F4N7-PUJD] (explaining the connection between ML and DL)).

99. Barocas & Selbst, *supra* note 29, at 680–81 (describing the function of training data).

100. *What Is Machine Learning?*, IBM, https://www.ibm.com/topics/machine-learning [https://perma.cc/PN4K-NQJ3] (defining purpose of supervised and unsupervised neural networks).

101. *What Is Supervised Learning?*, IBM, https://www.ibm.com/topics/supervised-learning [https://perma.cc/3HP3-52K4] (summarizing supervised learning).

102. *What Is Machine Learning?*, *supra* note 100.

103. *Id.*

104. *Id.*

105. *Id.*

106. Barocas & Selbst, *supra* note 29, at 680–81 (discussing inferences drawn from training data and faulty labeling that may lead to discrimination).

methods.[107] Whether creators of models engage in these bias countermeasures is an open-ended question. If left unchecked, algorithmic models in ML and DL tools can amplify racial discrimination embedded within dependent variables (factors the AI is trying to predict or understand) and independent variables (factors that may have an impact on predictions).[108] In the lending industry, ML is used to make predictions based on patterns observed in housing-related data such as credit reports.[109] ML algorithms are also used in banking to predict the likelihood of a loan defaulting. ML underwriting models use about ten to one hundred times more data about loan applicants than are used in logistic regression models traditionally employed in lending.[110] With ML, however, enforcing civil rights legislation is difficult because the decision-making process is inaccessible.

The decision-making process is so inaccessible because of the way ML algorithms identify and draw conclusions about correlations found within limitless amounts of data, such as a person's internet browser history, education, favorite clothing store, or ZIP code.[111] ML algorithms can create such complex, subtle correlations that any human, even the model's designer, would struggle to understand the rationale for its conclusion, such as the approval or denial of a specific home loan.[112] When industries use ML for decision-making traditionally done by people, such as mortgage lenders and underwriters, the massive quantity of decision-making pathways characteristic of ML technology makes the process indecipherable. ML is also conceptually complex because decisions can be inconsistent with human intuition (equally qualified candidates of two different races, one White and one Black, may receive different mortgage decisions).[113] The outcomes of decisions generated by ML are clear—loan servicers using ML know if algorithms approve a loan, but they do not know exactly why. With ML,

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107. *See What Is Underfitting?*, IBM, https://www.ibm.com/topics/underfitting [https://perma.cc/A288-XBV8] (explaining regularization); Jenny Yang, Andrew A.S. Soltan, David W. Eyre, Yang Yang & David A. Clifton, *An Adversarial Training Framework for Mitigating Algorithmic Biases in Clinical Machine Learning*, 6 NPJ DIGIT. MED., no. 55, 2023, at 1, 1 (explaining and analyzing how adversarial training can be used to mitigate bias in healthcare); *see generally* Shubham Sharma, Yunfeng Zhang, Jesús M. Ríos Aliaga, Djallel Bouneffouf, Vinod Muthusamy & Kush R. Varshney, *Data Augmentation for Discrimination Prevention and Bias Disambiguation*, 2020 PROC. AAAI/ACM CONF. ON AI, ETHICS & SOC'Y 358 (2020) (introducing techniques to minimize data bias in ML).

108. Cofone, *supra* note 57, at 1394.

109. Bruce Upbin, *How Machine Learning Is (and Isn't) Changing Fair Lending*, ZEST AI (Oct. 22, 2020), https://www.zest.ai/insights/how-machine-learning-is-and-isnt-changing-fair-lending [https://perma.cc/VF3L-ZRVZ].

110. *Id.*

111. Elizabeth Fernandez, *Will Machine Learning Algorithms Erase the Progress of the Fair Housing Act?*, FORBES (Nov. 17, 2019), https://www.forbes.com/sites/fernandezelizabeth/2019/11/17/will-machine-learning-algorithms-erase-the-progress-of-the-fair-housing-act/?sh=798b08ec1d7c [https://perma.cc/5XVQ-X3A9].

112. *Id.*

113. *See* Andrew D. Selbst & Solon Barocas, *The Intuitive Appeal of Explainable Machines*, 87 FORDHAM L. REV. 1085, 1128–29 (2018) (describing how ML often find patterns that go well beyond human intuition and contribute to the problem of explainability).

the "why" behind decision-making is unanswerable. The unknown quality of ML raises concerns given the nature of algorithmic redlining and data. Ignacio N. Cofone explains that algorithmic discrimination can arise in several ways: through bias in the process, bias in the input, and bias in representative data.[114]

First, bias in the process may arise as a result of a data scientist's predispositions getting "translated into the data-processing mechanism."[115] Behavioral bias, such as reporting bias,[116] selection bias,[117] and availability bias,[118] has a well-documented tendency to convert faulty labeling or personalization that may lead to certain blind spots, including incorrectly assuming one variable causes another.[119] Moreover, algorithmic models are often created by a homogeneous group (mostly White, male data scientists) who harbor their own unintentional or intentional biases when designing models.[120]

Second, bias in the input is when the actual data processed by algorithms is embedded with prejudice.[121] Algorithms can then reproduce and amplify that prejudice. The biased data used by algorithms is often compiled through data mining.[122] Data mining often has proprietary ends and is used by companies, the financial sector, and social media giants (among other entities) to identify and commodify consumer patterns and behaviors.[123] For example, the financial sector mines data to determine creditworthiness, a metric defined by an industry

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114.   Cofone, *supra* note 57, at 1394.

115.   *Id.*

116.   Reporting bias is a distortion of presented information from research due to the selective disclosure or withholding of information by parties involved with regard to the topic selected for study and the design, conduct, analysis, or dissemination of study methods, findings, or both. Georgia C. Richards & Igho J. Onakpoya, *Reporting Biases*, CATALOGUE BIAS (2019), https://catalogofbias.org/biases/reporting-biases/ [https://perma.cc/9SWF-QH34]. An example of reporting bias is underreporting a statistical analysis or analytical code.

117.   Selection bias occurs when individuals or groups in a study differ systematically from the population of interest, leading to a systematic error in an association or outcome. David Nunan, Clare Bankhead & Jeffrey K. Aronson, *Selection Bias*, CATALOGUE BIAS (2017), https://catalogofbias.org/biases/selection-bias/ [https://perma.cc/8KUF-VXHA]. An example of selection bias may be when in an observational study, conclusions from a research population may not be representative of or apply to people in the real world.

118.   Availability bias is a distortion that arises from the use of information that is most readily available, rather than that which is necessarily most representative. Amitava Banerjee, *Availability Bias*, CATALOGUE BIAS (2019), https://catalogofbias.org/biases/availability-bias/ [https://perma.cc/JH3Q-JEYF]. An example of availability bias directly related to this Article may be the omission of rental payment history in credit reporting.

119.   Cofone, *supra* note 57, at 1401.

120.   Allen, *supra* note 22, at 229 (citing BRYCE W. GOODMAN, ECONOMIC MODELS OF (ALGORITHMIC) DISCRIMINATION 1–2 (2016)); Citron & Pasquale, *supra* note 63, at 4 ("Because human beings program predictive algorithms, their biases and values are embedded into the software's instructions known as the source code and predictive algorithms. Scoring systems mine datasets containing inaccurate and biased information provided by people.").

121.   Cofone, *supra* note 57, at 1402 (defining bias in the input (referenced as "sample" in the subpart)).

122.   Barocas & Selbst, *supra* note 29, at 672–73 (introducing the practice of big data mining and its implications).

123.   *Id.* Data mining has many uses, including spam and fraud detection.

known for inaccuracies and that determines scores based on racial proxies.[124] In sales markets, PropTech's counterpart, financial technology (FinTech), also automates decision-making tools infused with biased data that pull from credit reports.[125]

Data-mining programs sort and select candidates in ways that result in disproportionately adverse outcomes for historically disadvantaged groups. Models trained with discriminatory data have real consequences in the analog world, such as lending decisions for commercial or residential loans, fitness for employment, and pricing for insurance policies.[126] As long as algorithms process data shaped by centuries-long systemic discrimination, which is intensely reflected in housing and financial markets, they will have severely adverse effects on historically disadvantaged groups.[127]

Lastly, societal bias may be captured in representative data as a result of information collected in the aggregate.[128] For example, programs that use arrest

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124. Hurley & Adebayo, *supra* note 29, at 152–53 (highlighting bias in big data credit reporting).

125. *See* Winnie F. Taylor, *Fintech and Race-Based Inequality in the Home Mortgage and Auto Financing Markets*, 33 LOY. CONSUMER L. REV. 366 (2021); *see also* Neil Bhutta, Andrew C. Chang, Lisa J. Dettling, Joanne W. Hsu & Julia Hewitt, *Disparities in Wealth by Race and Ethnicity in the 2019 Survey of Consumer Finances*, BD. GOVERNORS FED. RSRV. SYS., https://www.federalreserve.gov/econres/notes/feds-notes/disparities-in-wealth-by-race-and-ethnicity-in-the-2019-survey-of-consumer-finances-20200928.htm [https://perma.cc/E8BR-SEAT].

126. Barocas & Selbst, *supra* note 29, at 673–74 (stating the impact of big data on people). The article begins by stating that data used predictively to assist decision-making affects "the fortunes of whole classes of people in consistently unfavorable ways." *Id.* at 673. The article further describes the arbitrary nature of defining standards for target variables such as "good" employees or "creditworthiness" to correspond to measurable outcomes. This process for defining target variables can lead to exclusion of a whole host of other characteristics for "good," unless creators of these measures are intentionally holistic in their approach. *Id.* at 679.

127. The long history of policies by banks, insurance companies, and real estate brokers, which have denied people of color homeownership opportunities and concentrated wealth and property in the hands of White people and communities, is quantified, recorded, and assessed by data mining algorithms. Charlton McIlwain, *AI Has Exacerbated Racial Bias in Housing. Could It Help Eliminate It Instead?*, MIT TECH. REV. (Oct. 20, 2020), https://www.technologyreview.com/2020/10/20/1009452/ai-has-exacerbated-racial-bias-in-housing-could-it-help-eliminate-it-instead/ [https://perma.cc/83E5-USR7]. Another example illustrating systemic discrimination is housing appraisal values that reflect disparities in property taxes. An algorithm assessing appraisal values uses measures from municipalities that impose higher property tax rates in lower-income communities, which are largely communities of color and, in turn, negatively affects property values and output of appraisal figures. Keith M. Phaneuf, *Another Year, Another Plea to Fix the Property Tax System. Liberal Group Wants to Change Tax System in Connecticut*, HARTFORD COURANT (Dec. 19, 2021), https://www.courant.com/politics/hc-pol-1000-friends-connecticut-property-tax-20211219-zbhbc4qx2zan3edaklvtwh2lhq-story.html [https://perma.cc/GHX6-9W7C] (discussing property tax disparities that factor into home valuations). For example, there is "vertical inequality," as a 2014 report by the Connecticut Department of Revenue Services showed the poorest half of all residents in Connecticut pay 12.5 percent of their earnings on property taxes while more affluent residents paid between 0.9 percent and 7.7 percent. *Id.* There is "horizontal inequality" in that the poorest communities have the highest rates of property tax while the wealthiest communities have lower rates.

128. *See* Cofone, *supra* note 57, at 1394. For an in-depth discussion of societal bias, see *id.* at 1404–06.

records for decision-making are susceptible to data that does not account for the overpolicing of Black communities due to institutionalized racial caste projects such as Jim Crow and mass incarceration.[129] Each category of bias—whether human, data, or societal bias—informs why PropTech can be problematic and potentially perpetuate segregation.

America's real estate industry has a long history of racist and discriminatory practices, which directly influence the data that algorithms, including ML, assess for decision-making. The financial industry and real estate market systems are tightly interconnected in the homebuying and renting processes. PropTech and FinTech automate gatekeeping, screening who can and cannot rent or buy a home. James A. Allen reiterates the concern about algorithmic bias by suggesting that over the last several decades, housing policies in both finance and marketing have greatly "tilted the playing field by systematically disenfranchising communities of color."[130] Allen highlights discriminatory housing policies that exacerbate segregation based on socioeconomic status, forcing low-income families and individuals into depressed living conditions in areas with poorly performing schools, deteriorating recreational facilities, and underfunded hospitals.[131] Further, segregationist policies "have greatly influenced modern algorithms because they generated massive data sets that consist of decades of information built on exclusion and discrimination."[132] Massive data sets built on discriminatory practices include credit and lending databases, housing advertisements and marketing information in online platforms, and records generated by affordable housing and rental housing selection programs.[133]

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129.   *See* MICHELLE ALEXANDER, THE NEW JIM CROW: MASS INCARCERATION IN THE AGE OF COLORBLINDNESS 178–210 (2010).

130.   Allen, *supra* note 22, at 233; *see also* DANIEL IMMERGLUCK, CREDIT TO THE COMMUNITY: COMMUNITY REINVESTMENT AND FAIR LENDING POLICY IN THE UNITED STATES 87–108 (2015) (discussing segregating policies and discriminatory lending practices); OFF. COMPTROLLER CURRENCY, COMMUNITY REINVESTMENT ACT FACT SHEET 1 n.1 (2014), https://www.occ.gov/publications-and-resources/publications/community-affairs/community-developments-fact-sheets/pub-fact-sheet-cra-reinvestment-act-mar-2014.pdf [https://perma.cc/9H8D-D4UY]; Adam Gordon, *The Creation of Homeownership: How New Deal Challenges in Banking Regulation Simultaneously Made Homeownership Accessible to White and Out of Reach for Blacks*, 115 YALE L.J. 186, 206–07 (2005) (describing regulations that denied most African Americans the opportunity to buy homes); Matthew Desmond, *How Homeownership Became the Engine of American Inequality*, N.Y. TIMES MAG. (May 9, 2017), https://www.nytimes.com/2017/05/09/magazine/how-homeownership-became-the-engine-of-american-inequality.html [https://perma.cc/FV5U-CQGE]; *see generally* ROTHSTEIN, *supra* note 88 (detailing why our geographic landscape, from rural towns to bustling city centers, are so segregated. Rothstein distinguishes *de facto* and *de jure* segregation by explaining decades of social engineering designed, at every level of the government, to segregate communities by race.). Redlining, exclusionary zoning, racial covenants, and segregationist policies by financial institutions, while not an exhaustive list, are just a few examples of de jure segregation underlying the continual growth of the racial wealth gap and segregated communities and schools.

131.   Allen, *supra* note 22, at 234.

132.   *Id.*

133.   *See generally id.* at 235–53 (discussing in detail how algorithms in the housing sector operate with discriminatory preferences).

Unsurprisingly, algorithms that depend on data sets saturated with discrimination engage in algorithmic redlining by "reproducing, reinforcing, and perpetuating preexisting segregation."[134] This reproduction of segregation can occur because algorithms make "latent trait inferences" about data that are not necessarily inclusive of race but are "race-correlative," such as analysis of ZIP code and retail preferences.[135] A common saying in computer science fields, "garbage in, garbage out,"[136] encapsulates the problem of algorithmic bias in housing markets in that the quality of data decisions is only as good as the information provided. If the data is biased or skewed, the results will be too. While home financing is a major contributor to algorithmic bias, in the next Section, I primarily focus on property innovations frequently used by real estate professionals as a structural foundation to illustrate ways in which these tools create disparities.

C. What Is PropTech?

PropTechs are innovations that automate real estate transactions using algorithms and ML.[137] PropTech includes a wide range of tools, from automated advertisements to optimized property management systems and utilities.[138]

PropTech's ability to systemize preexisting housing discrimination against people of color is a concern. Erin McElroy, who studies PropTech or "landlord tech" to identify its prevalence and impact on housing markets and individuals, contends that landlord tech aggravates "racialized housing injustice."[139] While McElroy admits that thorough study of landlord tech's effect on communities of color is difficult because of the industry's "secretive nature," she has identified various forms of landlord tech such as "tenant screening services, app-based short-term rental platforms, biometric facial recognition, and tools for real estate speculation."[140] PropTech is popular because it streamlines real estate transactions, but the use of automated tenant screening tools can occur at the expense of residents of color because generated scores reflect biased data from industries with problematic histories (credit, criminal records, evictions) and

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134. *Id.* (defining broadly algorithmic redlining as any computational process that operates to curtail a person or family's access to housing based on race and/or socioeconomic status).

135. *Id.* at 265.

136. The saying "Garbage In, Garbage Out" (GIGO) refers to the idea that "in computing and other spheres, incorrect or poor quality input will always produce faulty output." *Overview: Garbage in Garbage out*, OXFORD REFERENCE https://www.oxfordreference.com/view/10.1093/oi/authority.20110803095842747 [https://perma.cc/3PCE-UUGW].

137. *See supra* note 24.

138. *See supra* note 25.

139. McElroy et al., *supra* note 62.

140. *Id.* (explaining speculation to include predictive technologies). McElroy and coauthors describe how new predictive technologies are built on tenant data used by landlords, real estate developers, and investment firms for purposes of extracting home value. *Id.* It also includes housing financialization, membership-based housing platforms, short-term and intermediary-length rental infrastructure, tech-owned housing, and more. *Id.*

therefore have the potential to exclude Black and Brown applicants at higher rates than White applicants with more favorable scores.[141]

PropTech like home surveillance systems technology, which act as "digitally gated communities,"[142] often increase the likelihood of interaction with police and the carceral system because they misidentify tenants of color as intruders.[143] McElroy's work also highlights how landlord tech creates housing instability and homelessness.[144] For example, companies selling landlord tech have created databases to blacklist tenants for nonpayment of rent by sending mass emails to landlord clients warning them not to rent to identified tenants in their system.[145] Technology informed by these databases appeals to landlords, who are managing a business. Tenants, however, problematically lack the context and ability to cure when placed on a database that bars them from obtaining future housing. Technology that streamlines evictions for nonpayment does not necessarily equate to racial bias; however, studies show that Black women are evicted at disproportionally higher rates than Black men and White people writ large.[146] Blacklisting tenants, and likely mostly Black women tenants, is one of many concerns with the rise of PropTech.[147] Understanding the development and staying power of the technology is important to elevating the seriousness of its impact on housing exclusion and segregation. The following Section describes the evolution of PropTech, its expanding use, and harms arising from its expansion.

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141. *Id.* (identifying a tech company with whistleblowing feature).

142. *Id.* (citing Rahim Kurwa, *Building the Digitally Gated Community: The Case of Nextdoor*, 17 SURVEILLANCE & SOC'Y 111, 112 (2019)).

143. *See generally* BROWNE, *supra* note 23 (tracing the emergence of surveillance technologies and practices back to the trans-Atlantic slave trade); EUBANKS, AUTOMATING INEQUALITY, *supra* note 65; VIRGINIA EUBANKS, DIGITAL DEAD END: FIGHTING FOR SOCIAL JUSTICE IN THE INFORMATION AGE (2011) (discussing how technology interfaces with public welfare programs and expands on digital surveillance). Eubanks reiterates in an interview about the book that technology itself is not always the problem, but rather people's interactions with it. For example, women on public assistance are exploited because their Electronic Benefits Transfer cards are used by caseworkers to track their purchases and movements. Further, low-rights environments—"poor and working-class communities, migrant communities, communities of color, religious or sexual minorities"—require that individuals give up private information to gain access to services, or in the alternative, involve exposed data trails resulting in algorithmic decisions about their children's welfare or policing in their communities. These individuals "encounter digital surveillance in public housing, in the criminal justice system, and in the low-wage workplace. The digital surveillance is near constant." Jenn Stroud Rossmann, *Public Thinker: Virginia Eubanks on Digital Surveillance and People Power*, PUB. BOOKS (July 9, 2020), https://www.publicbooks.org/public-thinker-virginia-eubanks-on-digital-surveillance-and-people-power/ [https://perma.cc/G8QY-4NJF].

144. McElroy et al., *supra* note 62 (describing consequences of surveillance tech on tenants of color).

145. *Id.*; *see* Paula A. Franzese, *A Place to Call Home: Tenant Blacklisting and the Denial of Opportunity*, 45 URB. L.J. 661, 668 (2018).

146. *See infra* Part I.E.1 (sourcing eviction statistics by demographic and detailing overrepresentation of Blacks and Hispanics in eviction filings).

147. This Article expands on tenant screening tech as a tool of exclusion and segregation.

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1. *The Evolution of PropTech in Real Estate*

PropTech innovations are at the intersection of real estate markets and consumer interactions—an important cross-section that implicates civil rights jurisprudence.[148] While tenant screens are the focus of this Article, the following Section outlines a variety of property technology tools emerging in the housing industry. These tools include contactless services (web listings, virtual tours, tenant screening tools), eDocuments, and property management tools (safety, heating, real-time property analytics).[149] PropTech continues to grow in popularity, thereby attracting significant investors to meet the demands of real estate professionals and landlords who use these tools to simplify screening and approval for properties.[150]

PropTech has evolved over three waves, starting in the 1980s. The first wave, from 1980 through 2000, focused on supplying software to help companies efficiently underwrite, account, and analyze the housing market.[151] The second wave, from 2001 through 2007, involved the advent of internet data aggregators,[152] such as Redfin, Zillow, and Trulia, creating warehouses of housing data that everyday users could access at the touch of a button.[153]

The PropTech landscape as we know it today emerged in 2008.[154] The demand for consumer autonomy over housing and the desire for immediate access to nationwide housing markets propelled the sharing economy and online real estate marketplaces.[155] Companies such as WeWork[156] and Airbnb[157]

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148. Melea VanOstrand, *What Is Proptech and How Is It Transforming Day-to-Day Operations in Real Estate?*, LAW.COM (June 2, 2022), https://www.law.com/dailybusinessreview/2022/06/02/what-is-proptech-and-how-is-it-transforming-day-to-day-operations-in-real-estate/ [https://perma.cc/SY8A-MHCK] (explaining the many different forms of PropTech).

149. Rico Mok, *The Latest Proptech Trends and Strategies for Landlords*, POPLAR (July 23, 2021), https://www.poplarhomes.com/real-estate-news-and-reports/the-latest-proptech-trends-and-strategies-for-landlords/ [https://perma.cc/A6H8-7F6W] (providing examples of PropTech).

150. Paul W. Nash, *United States: PropTech Trends & Strategies for Landlords*, MONDAQ (June 7, 2021), https://www.mondaq.com/unitedstates/landlord-tenant—leases/1076664/proptech-trends-strategies-for-landlords [https://perma.cc/W3R2-DDHS] (explaining PropTech's staying power).

151. ANDREW BAUM, PROPTECH 3.0: THE FUTURE OF REAL ESTATE 10–12 (2017).

152. *Id.* at 12.

153. Louisa Xu, *Modernizing Real Estate: The Property Tech Opportunity*, FORBES (Feb. 22, 2019), https://www.forbes.com/sites/valleyvoices/2019/02/22/the-proptech-opportunity/?sh=7660d4275826 [https://perma.cc/9SQR-JY5Z]; BAUM, *supra* note 151, at 40–42.

154. Xu, *supra* note 153.

155. BAUM, *supra* note 151, at 42.

156. *WeWork*, THE EVENT UMBRELLA, https://www.theeventumbrella.com/clients/wework/ [https://perma.cc/LP9B-6MYA] ("WeWork is an American commercial real estate company that provides flexible shared workspaces for technology startups and services for other enterprises. WeWork designs and builds physical and virtual shared spaces and office services for entrepreneurs and companies.").

157. *About Airbnb: What It Is and How It Works*, AIRBNB, https://www.airbnb.com/help/article/2503 [https://perma.cc/324D-Q8NN] (describing Airbnb, Inc. as a community of hosts and guests and outlining services provided for "unique stays, experiences, adventures, and more").

became mainstream. Since rentals of personal space no longer offended conventional notions of privacy, nothing was off the table in terms of what constituted a marketable setting. Sharing economies included homes, offices, retail shops, and storage space.[158] Micro-unit communities developed in major metropolitan centers, and the tiny home movement surged for both primary residence and investment properties.[159]

As consumers' autonomy increased, they started demanding improved user experiences in renting, buying, selling, and building physical spaces.[160] Online platforms advanced vertical integration systems[161] allowing for a single online portal to manage an entire transaction and consumer experience.[162] For example, Zillow, an industry leader in the United States for home-renting and home-buying processes, offers customers "an on-demand experience for selling, buying, renting and financing with transparency and nearly seamless end-to-end service."[163] Zillow's "end-to-end" resources include home loans, financing, and brokerage services to streamline entire real estate transactions on top of its primary home search features.[164]

Consumer demand for housing market platforms drives venture capitalist investment. In 2008, $20 million were invested in PropTech.[165] In 2018, the figure reached $4 billion.[166] PropTech is growing, evolving, and here to stay. The future of PropTech will continue to simplify real estate transactions and expand automation features.[167]

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158.   NIAM YARAGHI & SHAMIKA RAVI, BROOKINGS INDIA, THE CURRENT AND FUTURE STATE OF THE SHARING ECONOMY 4 (2017), https://www.brookings.edu/wp-content/uploads/2016/12/sharingeconomy_032017final.pdf [https://perma.cc/M6E3-6TKY] (defining the sharing economy as the peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community-based online services).

159.   BAUM, *supra* note 151, at 40–50.

160.   Xu, *supra* note 153.

161.   Vertical integration describes a company's control of more than one stage of production of a good or service, and sometimes the entire production.

162.   Companies in the third era include WeWork, Airbnb, Katerra, and Opendoor. WeWork manages the quality of physical environments by designing, owning, and operating spaces, end-to-end. Airbnb combines accommodation, experiences, adventures, and restaurants using a vertically integrated ecosystem powered by people. Katerra manages entire construction supply chain, end-to-end. Opendoor acts as the buyer, renovator, seller, and agent for residential transactions.

163.   Press Release, Zillow Grp., Inc., Zillow Announces Leadership Promotions to Increase Focus on End-to-End Customer Experience (Feb. 22, 2021), https://zillow.mediaroom.com/2021-02-22-Zillow-Announces-Leadership-Promotions-to-Increase-Focus-on-End-to-End-Customer-Experience [https://perma.cc/7BH3-T4QK].

164.   *Id.*

165.   Xu, *supra* note 153.

166.   *Id.*

167.   For example, real estate closings require original documentation and archival reviews by attorneys and agents for different parties in a transaction. PropTech could simplify the closing process by creating a single system of record for agents, lenders, home buyers, and sellers, avoiding the need to cross-reference among several departments. *See Toward Healthy Home Ownership*, QUALIA https://www.qualia.com/about-us/ [https://perma.cc/F6FC-PTJW]. Other examples of automation include RentSpree, AOAA, SmartMove, RentPrep, and MyRental (CoreLogic).

For many consumers, PropTech makes home searches and rental and sales interactions faster and more accessible. However, PropTech also has downfalls for consumers. Automated tenant screens have a significant impact on people of color in the rental market in part because the data assessed by these tools are entrenched with racially biased information from decades of oppressive and exclusionary discriminatory real estate practices.[168]

D. What's the Harm in Tenant Screening?

Tenant screens, which traditionally include landlord references, credit checks, criminal record checks, and application review, have been around for a long time.[169] They emerged because denser living conditions from urbanization fueled the rapid professionalization of the real estate industry.[170] In time, landlords formed associations to provide guidance by disseminating "how-to" manuals for background checks.[171] Landlords also began to rely more on property management companies and real estate agents to show properties, manage utilities, and complete applications, making processes more uniform.[172] Real estate professionals also helped landlords navigate fair housing laws and safety standards.[173] The internet also facilitated immediate access to background information and eviction records, making tenant screening easier.[174]

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168. *See* Eva Rosen, Philip M.E. Garboden & Jennifer E. Cossyleonc, *Racial Discrimination in Housing: How Landlords Use Algorithms and Home Visits to Screen Tenants*, 86 AM. SOCIO. REV. 787, 814–15 (2021) (discussing findings of tenant screening tool study); *see also Tech, Bias, and Housing Initiative: Tenant Screening*, TECH EQUITY COLLABORATIVE (Feb. 23, 2022), https://techequitycollaborative.org/2022/02/23/tech-bias-and-housing-initiative-tenant-screening/ [https://perma.cc/2YBZ-723R].

169. *See* David Thacher, *The Rise of Criminal Background Screening in Rental Housing*, 33 LAW & SOC. INQUIRY 5, 11 (2008) (detailing informal nature of tenant screens because they were based on social networks and community ties); Tristan R. Pettit, *Screening and Qualifying Prospective Tenants*, AM. APARTMENT OWNERS ASS'N, https://www.american-apartment-owners-association.org/tenant-screening-background-checks/wisconsin/screening-qualifying-prospective-tenants-2/ [https://perma.cc/USH3-EWSS] (emphasizing the importance of tenant screens).

170. *See* Oyama, *supra* note 21, at 190 (describing a case from 1970 that sparked landlords screening for criminal histories and how the real estate industry changed over time and regulations began to increase).

171. *See id.* at 191.

172. *Id.* The author also provides examples of additional strategies that increased tenant screening, such as (1) "allow[ing] the costs of such screening methods to be borne collectively," (2) "giv[ing] the managers political capital with local and national legislatures," and (3) "develop[ing] . . . legal education materials to advise managers on screening practices that purportedly do not expose landlords to civil liability."

173. Landlords are responsible for addressing environmental hazards such as lead-based poisoning, which, ironically, often leads to landlords illegally screening families with small children. The FHA prohibits discrimination based on familial status, and lead-based discrimination can be a form of familial status discrimination under state and federal law. 42 U.S.C. § 3604(a); *see, e.g.*, MASS. GEN. LAWS ch. 151B, § 4 (2018).

174. Mathew H. Leiwant, *Locked out: How Algorithmic Tenant Screening Exacerbates the Eviction Crisis in the United States*, 6 GEO. L. TECH REV. 276, 280–81 (2022) (explaining accessibility of background records due to digitization of court records).

Early in the Internet age, landlords developed the common practice of hiring real estate agents to list available homes and rentals online and on multiple listing services. Even with online advertising, real estate agents and landlords continued verbal or in-person screens, provided tours, and sought landlord references. Real estate agents commonly provided both paper and digital applications to prospective tenants. At some point in the process, humans interacted and shared information. Now, automated tenant screens "supplemen[t] or even replac[e] traditional tenant-screening tools like written applications, personal interviews, or phone calls" to landlord references.[175]

Prior to the explosion of PropTech, both small and large landlords mostly communicated in person. Despite the shift to more digital communication, modern landlords are not exactly a "homogenous group of faceless corporations."[176] Most landlords (seven in ten) have only one or two properties, according to 2018 census data.[177] About one-fifth of rental properties are owned by corporate landlords.[178] However, both individual and corporate landlords are beginning to digitize entire rental processes through listing platforms, online inquiries, remote tours, and virtual rental applications for purposes of efficiency.[179] The fact that automated decision-making may compound the effects of discrimination in housing is not obvious. Even without PropTech, housing discrimination has always been systemized and structural both at the grassroots level (landlords organizing rent prices to shut out voucher-holders) and as official government policy.[180] However, the discrimination that landlords may perpetuate in person can also occur in an automated system that uses data steeped in bias.

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175.   Eric Dunn & Marina Grabchuk, *Background Checks and Social Effects: Contemporary Residential Tenant-Screening Problems in Washington State*, 9 Seattle J. for Soc. Just. 319, 319–20 (2010); *see* Consumer Fin. Prot. Bureau, Tenant Background Checks Market 10 (2022), https://s3.amazonaws.com/files.consumerfinance.gov/f/documents/cfpb_tenant-background-checks-market_report_2022-11.pdf [https://perma.cc/PGQ5-Q6JX] (highlighting one research report estimating that tenant screening services generate approximately $1.3 billion in revenue annually). Tenant screen revenue has grown by approximately 3.3 percent over the last five years and is projected to continue growing. *Id.*

176.   Drew DeSilver, *As National Eviction Ban Expires, a Look at Who Rents and Who Owns in the U.S.*, Pew Rsch. Ctr. (Aug. 2, 2021), https://www.pewresearch.org/short-reads/2021/08/02/as-national-eviction-ban-expires-a-look-at-who-rents-and-who-owns-in-the-u-s/ [https://perma.cc/8QMM-HBHR].

177.   *See id.* The 2018 Rental Housing Finance Survey evaluated 20 million rental properties and 48.2 million units.

178.   *See id.*

179.   Corporate landlords are also in the single-family market. *See* Francesca Mari, *A $60 Billion Housing Grab by Wall Street*, N.Y. Times Mag. (Oct. 22, 2021), https://www.nytimes.com/2020/03/04/magazine/wall-street-landlords.html [https://perma.cc/62WW-Q3RJ].

180.   *See generally* Rothstein, *supra* note 88 (explaining the many ways de facto segregation and de jure segregation have transpired post-Civil War, during the first and second Great Migrations of Black and Brown Americans, and through federal and state policy prior to the FHA).

What is unique about automated tenant screening, and what makes it more dangerous than traditional in-person discrimination, is the cloak of neutrality falsely attributed to technology.[181] While PropTech makes tenant screening more efficient, it also makes skirting accountability for decision-making more convenient. Providers of automated tenant screening services claim that using predictive technology reduces subjectivity.[182] More specifically, servicers claim that decisions are based on objective criteria and that PropTech removes the subjective human bias from the process.[183] In support of the idea of tech neutrality, SafeRent states in its "Decision Science" booklet that "landlords in the United States employ either manual or automated rules-based methods to screen their applicants," and that automation is better.[184] However, these claims are reductionist and minimize how structural racism influences algorithms.

This misconception—that tenant screening tools are neutral finders of "better renters"—poses a danger when landlords default to the algorithm's outputs without question. Housing providers, large and small, claim that they are neutrally applying their process when the process itself is based on biased information. Allowing landlords to say the decision was "made by the tech, not me," is a risky precedent to set.

To illustrate, one of the *Louis* landlords stated that "Metropolitan staff told Ms. Louis that 'we do not accept appeals and cannot override the outcome of the Tenant Screening.'"[185] Attributing decision-making responsibility to a machine with no recourse for tenants is harmful; the strict policy of no appeals for consumers of color makes PropTech a serious threat. In many instances, landlord decisions to accept or deny applicants are based solely on assigned scores, without considering other information to assess candidacy. Property managers in *Louis* were transparent that they made decisions based solely on scores and did not consider any other information.[186] In *Louis*, property managers sent one applicant's lawyer an email stating:

> CoreLogic [former name] sends us a number, and if it is above the predetermined 'approved' number, we move forward with the process. If the number comes back under the 'approved' number, we send the prospect a letter [to contact CoreLogic]. We do not know why they were denied, other than their score was not high enough. . . . We really don't

181.   *See generally* BENJAMIN, *supra* note 92 (highlighting the danger of colorblind ideology and the notion that technology is unbiased and neutral because human decision-making is taken out of the process; this assumption excuses or masks bias against raced people).

182.   *See, e.g.*, CORELOGIC RENTAL PROP. SOLS., DECISION SCIENCE: GROW REVENUE WITH BETTER APPLICANT LEASE SCREENING 7 (2019) (explaining why their ScorePLUS Model predicts rental risk with less subjectivity).

183.   *See, e.g.*, Amended Complaint, *supra* note 1, at 9 (citing Email from John Cullen, Prop. Manager, to Matt Brooks, Staff Att'y, Greater Bos. Legal Servs. (Dec. 2, 2021)).

184.   CORELOGIC RENTAL PROP. SOLS., *supra* note 182, at 4 (arguing why automation is better).

185.   Amended Complaint, *supra* note 1, at 9.

186.   *Id.* at 11.

need to know anything else or details of why someone did or did not pass.

Another property manager explained that a "score is indicated in conclusion of the screening, which reflects an approve or deny comment," and that is the only information considered. [187]

Automated tenant screenings are advantageous for streamlining real estate transactions. The metrics—credit scores, eviction histories, criminal records—are legal for purposes of evaluation. For communities of color, however, PropTech results in real harm because of standardized exclusion from high-opportunity neighborhoods. Automated tenant screens provide no recourse or appeal process. The way the technology is employed raises issues of fairness given the problematic data sources. The next Section discusses sources of biased data.

E.   Data Bias in PropTech

As stated previously, automated tenant screens are not necessarily creating a new problem. Rather, they are aggravating an old problem. Landlords and their agents have historically conducted background checks on applicants[188] by pulling reports from private, for-profit tenant screening services.[189] These services compile public records from housing courts, credit reports, and criminal records.[190] The new problem with automated tenant screens is that ML algorithms "collect training data,[191] learn from it, and then apply what they learned to larger datasets to determine or predict" if an applicant is deemed qualified and reliable.[192] These algorithms learn existing patterns of racial inequality, replicate it, and reinforce it.[193] Eviction records, credit reports, and

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187.   *Id.* The use of tenant screening technology in *Louis* is distinguishable from *CoreLogic* because these comments in *Louis* suggest the technology output is used by housing providers as an ultimate decision-maker because no other information is reviewed in the tenant screen. *Cf.* Conn. Fair Hous. Ctr. v. CoreLogic Rental Prop. Sols., No. 3:18-cv-705-VLB, slip op. at 40 (D. Conn. July 20, 2023) (stating CrimSafe uses default language "indicating to housing providers that the housing provider make the ultimate decision on housing").

188.   *See* Rudy Kleysteuber, *Tenant Screening Thirty Years Later: A Statutory Proposal to Protect Public Records*, 116 YALE L.J. 1344, 1363 (2007) (highlighting harsher standards imposed on low-income applicants due to social stigma associated with affordable housing tenants).

189.   *See id.* at 1346, 1356–57, 1360–62 (stating that tenant screening service industry is not new).

190.   *See* Franzese, *supra* note 145, at 668.

191.   Training data is the data one uses to train an algorithm or ML model. *See Training Data*, TECHOPEDIA (Feb 17, 2022), https://www.techopedia.com/definition/33181/training-data [https://perma.cc/F2NA-H8MM]; Schneider, *supra* note 57, at 258 (citing Cofone, *supra* note 57, at 1395) ("[M]achine learning algorithms are given large amounts of data with output variables for the algorithm to self-adjust. Instead of determining decision rules, human intervention is limited to selecting features for the training data and attaching labels to the output data.").

192.   Schneider, *supra* note 57, at 258; *see also* Cofone, *supra* note 57, at 1395 (explaining instead of determining decision rules, human intervention is limited to selecting features for the training data and attaching labels to the output data).

193.   *See* Schneider, *supra* note 57, at 258.

criminal histories—all data sources examined by tenant screening services—are laden with decades of discriminatory information.[194] Though landlords are legally allowed to base rental decisions on these records,[195] these decisions disproportionately exclude Black and Brown people from homes because standard measures include biased data.

Algorithms in tenant screening tools have been referred to as "dirty data,"[196] a term used by data mining researchers to describe "missing data, wrong data, and non-standard representations of the same data."[197] In the housing context, dirty data may include data that originated from racially discriminatory practices in both housing and financial industries. Long-term repercussions of these practices contributed to the racial wealth gap and concentrated poverty in urban centers. Further, these sources of data are constructed within the same hegemonic systems that designed segregationist federal and state policy, which influenced housing and financial sectors for generations.[198] The following Sections detail the three key data sources examined by most tenant screening technologies.

1. *Eviction History*

Housing court records indicate whether an applicant has ever been named in an eviction action. Landlords almost always deny applications with eviction records, regardless of the merits of a tenant's claim or counterclaim, outcome,

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194. *See generally* Mary Madden, Michele Gilman, Karen Levy & Alice Marwick, *Privacy, Poverty, and Big Data: A Matrix of Vulnerabilities for Poor Americans*, 95 WASH. U. L. REV. 53, 86 (2017) ("While data analytics is touted for its ability to reduce human biases, it often merely replicates them.").

195. Criminal record screens used to deny lease renewal, evict, or otherwise exclude individuals from housing may be illegal under the FHA if applied with discriminatory intent, if it causes a discriminatory effect, or if its use results in a refusal to make reasonable accommodation. Memorandum from Demetria L. Cain, Principal Deputy Assistant Sec'y for Fair Hous. & Equal Opportunity, to Off. of Fair Hous. & Equal Opportunity, Implementation of the Office of General Counsel's Guidance on Application of Fair Housing Act Standards to the Use of Criminal Records by Providers of Housing and Real Estate-Related Transactions 3–8 (June 10, 2022), https://www.hud.gov/sites/dfiles/FHEO/documents/Implementation%20of%20OGC%20Guidance%20on%20Application%20of%20FHA%20Standards%20to%20the%20Use%20of%20Criminal%20Records%20-%20June%2010%202022.pdf [https://perma.cc/C7WN-XTHR]. Likewise, equal application of eviction and credit screens stay within the bounds of the FHA. *See* OFF. OF FAIR HOUS. & EQUAL OPPORTUNITY, U.S. DEP'T OF HOUS. & URB. DEV., FREQUENTLY ASKED QUESTIONS (FAQs): HOUSING ISSUES REGARDING EXCEPTIONS TO CREDIT CHECK POLICIES AND OCCUPANCY LIMITS, AFFIRMATIVE MARKETING, AND LANGUAGE ACCESS 1–2, https://www.hud.gov/sites/dfiles/FHEO/documents/General%20FAQ%20-%20Housing%20Providers%20and%20Fair%20Housing.pdf [https://perma.cc/4SGE-JBNZ].

196. Won Kim, Byoung-Ju Choi, Eui-Kyeong Hong, Soo-Kyung Kim & Doheon Lee, *A Taxonomy of Dirty Data*, 7 DATA MINING & KNOWLEDGE DISCOVERY 81, 81 (2003) (explaining the common parlance of the term to describe problems with the quality and source of data used for predictive technologies).

197. Richardson et al., *supra* note 57, at 18.

198. *See, e.g.*, Allen, *supra* note 22, at 221–22 (tracing big data collection back to redlining policies of 1930s that greatly influenced segregationist housing policies and financial sector).

context, or how long ago an action was filed.[199] Furthermore, eviction records are rife with errors, and these inaccuracies are memorialized in public databases unless a court order permits record sealing.[200] Including eviction records in automated tenant screens is especially harmful for Black and Brown renters because evictions are filed against Black and Brown people at double the rate of White people.[201] Denied applicants of color are put on what scholar Paula Franzese refers to as the "blacklist."[202] The blacklist is a registry maintained by tenant screening services of people with housing court records.[203] Tenant reports that include eviction records provide no context for why actions were filed, give applicants no notice their records were accessed, and provide no avenue to appeal denials.[204] This old problem of being blacklisted, with applicants having no say in the matter, has dire consequences for Black and Brown tenants because it often leads to housing insecurity, homelessness, and neighborhood exclusion.[205]

Relatedly, people of color are overrepresented in eviction actions.[206] For example, in a 2020 national study, Black people made up almost 20 percent of all adult renters but nearly 33 percent of all eviction filing defendants.[207] Four out of every five Black renters in the study "lived in a county in which the share of eviction filings against [B]lack renters was higher than the share of the renting population that was [B]lack."[208] All other racial and ethnic groups in the study

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199.   *See* NAT'L CONSUMER L. CTR., SALT IN THE WOUND: HOW EVICTION RECORDS AND BACK RENT HAUNT TENANT SCREENING REPORTS AND CREDIT SCORES 1 (2020), https://www.nclc.org/wp-content/uploads/2022/09/IB_Salt_in_the_Wound.pdf
[https://perma.cc/DQF6-SQVW]; *see also* Teri Karush Rogers, *Only the Strongest Survive*, N.Y. TIMES (Nov. 26, 2006), http://www.nytimes.com/2006/11/26/realestate/26cov.html [https://perma.cc/5974-SJTA] (quoting that 99 percent of landlords flat out reject tenants with an eviction record, no matter what the reason).

200.   A study examined more than 3.6 million eviction court records from twelve states and found that, on average, 22 percent of eviction records contained "ambiguous information on how the case was resolved or falsely represent a tenant's eviction history." Adam Porton, Ashley Gromis & Matthew Desmond, *Inaccuracies in Eviction Records: Implications for Renters and Researchers*, 31 HOUS. POL'Y DEBATE 377, 378 (2020). Low-income people of color do not necessarily have the resources to challenge inaccuracies in court records without counsel. Given the pace of filing, housing insecurity due to filings, and lack of bandwidth to address errors, racial disparities are exacerbated in housing litigation proceedings and eviction outcomes.

201.   *See* NAT'L CONSUMER L. CTR., *supra* note 199, at 1.

202.   *See* Franzese, *supra* note 145, at 663 (describing how tenant-landlord court records shut prospective tenants out of homes by being placed on registries collected and maintained by tenant screening services).

203.   *See id.*

204.   *See id.* at 668.

205.   *See id.* at 663.

206.   *See* Peter Hepburn, Renee Louis & Matthew Desmond, *Racial and Gender Disparities Among Evicted Americans*, 7 SOCIO. SCI. 649, 653 (2020).

207.   *See id.*

208.   *Id.*

were underrepresented in eviction filings, the most underrepresented group being White renters.[209]

Eviction actions are especially prevalent against Black women and their children, causing lifelong impacts on mental health, academic performance, and food and housing insecurity.[210] Yvette Pappoe studies the ongoing eviction crisis and its effects on Black mothers. Pappoe maintains that landlords regularly displace or blacklist Black women, who have been disproportionately impacted by COVID-19 and are overrepresented with prior eviction records, thereby preventing them from accessing available housing.[211] Pappoe concludes that "[w]hile Black women represent less than 10 percent of all renters, 1 in 5 Black women are likely to face eviction."[212] In addition, a study by Princeton University's Eviction Lab shows that "Black women are facing compounded risk of eviction compared to Black men and women of other races."[213] An Eviction Lab study showed that Black renters experienced the highest average rates of eviction filing (6.2 percent) and eviction judgments (3.4 percent) compared with White renters.[214] White renters' filing rate was 3.4 percent, and their average eviction rate was 2 percent. Researchers found that one in four Black renters lived in a county in which the Black eviction rate was more than double the White eviction rate.[215]

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209. Black individuals are overrepresented in the evicted defendant population. In 2021, they made up 19.9 percent of all adult renters but 32.7 percent of all eviction filing defendants. *See* Carl Romer, Andre M. Perry & Kristen Broady, *The Coming Eviction Crisis Will Hit Black Communities the Hardest*, BROOKINGS INST. (Aug. 2, 2021), https://www.brookings.edu/research/the-coming-eviction-crisis-will-hit-black-communities-the-hardest/ [https://perma.cc/2FFE-24EW] (examining several studies that show strong correlation between neighborhood demographic and evictions); Erik Gartland, *Families with Children at Increased Risk of Eviction, with Renters of Color Facing Greatest Hardship*, CTR. ON BUDGET & POL'Y PRIORITIES, https://www.cbpp.org/blog/families-with-children-at-increased-risk-of-eviction-with-renters-of-color-facing-greatest [https://perma.cc/HCX2-WMCS] (describing housing hardship due to eviction for Black families and their children).

210. *See* Gartland, *supra* note 209.

211. Yvette Pappoe, *The Scarlet Letter "E": How Tenancy Screening Policies Exacerbate Housing Inequity for Black Women*, 103 B.U. L. REV. 269, 269–70 (2023) (introducing concept of how eviction records brand Black women resulting in blacklisting).

212. *Id.* at 295 (citing U.S. CENSUS BUREAU, HOUSEHOLD PULSE SURVEY PUBLIC USE FILE: JUNE 29–JULY 11 (2022), https://www.census.gov/programs-surveys/household-pulse-survey/datasets.html [https://perma.cc/9NTW-C8U9] (scroll to "Household Pulse Survey PUF: June 29–July 11" and select the compatible data file for download) (calculating the demographic's share of renters behind on rent and renters very or somewhat likely to face eviction in the next two months)); Jaboa Lake, *The Pandemic Has Exacerbated Housing Instability for Renters of Color*, CTR. FOR AM. PROGRESS (Oct. 30, 2020), https://www.americanprogress.org/article/pandemic-exacerbated-housing-instability-renters-color/ [https://perma.cc/N3CK-NHTK] ("Across their lifetime, 1 in 5 Black women are evicted, compared with 1 in 15 [W]hite women.").

213. NAT'L P'SHIP FOR WOMEN & FAMS., BLACK WOMEN, THE WAGE GAP, AND EVICTIONS: AN URGENT CALL FOR EQUITABLE HOUSING SOLUTIONS 2 (2021), https://www.nationalpartnership.org/our-work/resources/economic-justice/other/black-women-and-evictions.pdf [https://perma.cc/6RRZ-SBMT].

214. *See* Hepburn et al., *supra* note 206, at 653.

215. *See id.*

Matthew Desmond's book, *Evicted*, further demonstrates the revolving door of low-income people of color who experience housing insecurity in their daily lives.[216] Desmond studied tenants living in Milwaukee and found that "[l]andlords evicted an estimated 15,983 adults and children from 5,995 units" on average each year.[217] Of those evictions, an estimated 7,352 (46 percent) took place in Black neighborhoods, 3,197 (20 percent) occurred in White neighborhoods, 639 (4 percent) occurred in Hispanic neighborhoods, and 4,795 (30 percent) took place in mixed neighborhoods.[218] Eviction rates were 7.4 percent for Black neighborhoods, 3.9 percent for Hispanic neighborhoods, and 1.4 percent for White neighborhoods.

Desmond suggests these discrepancies arise because of concentrated disadvantages in Black communities. A summary of Desmond's ethnographic findings indicates that Black women are more likely to have low-income jobs and participate in public assistance programs compared with Black men, who are more likely to have criminal records and be unemployed.[219] Black women are more frequently able to add their names to leases and show the proof of income or public assistance required to rent a home.[220] Further, stagnant incomes, steadily rising housing costs, child care, unexpected expenses in times of hardship, and ineffective eviction avoidance strategies, among a host of other factors, increase eviction risks for Black women.[221] These factors similarly exacerbate labor and housing inequities for Black and Hispanic people generally.[222] Desmond summarizes the problem by analogizing that eviction is to Black women what mass incarceration is to Black men.[223]

2. Criminal History

Tenant screening tools also assess criminal histories. In *CoreLogic*, for example, SafeRent used the automated CrimSafe tool to search local, state, and federal public databases for criminal history and interpret criminal records to

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216.   *See* MATTHEW DESMOND, EVICTED: POVERTY AND PROFIT IN THE AMERICAN CITY 104 (2016); *see also* Leiwant, *supra* note 174, at 282–83 (identifying Black women as the people hit hardest in evictions).

217.   Matthew Desmond, *Eviction and the Reproduction of Urban Poverty*, 118 AM. J. SOCIO. 88, 97 (2012) (explaining qualitative results from study of Milwaukee households between 2003 and 2007).

218.   *See id.*

219.   *See id.* at 105; *see also* Sophia Wedeen, *Black and Hispanic Renters Face Greatest Threat of Eviction in Pandemic*, JOINT CTR. FOR HOUS. STUD. (Jan. 11, 2021), https://www.jchs.harvard.edu/blog/black-and-hispanic-renters-face-greatest-threat-eviction-pandemic [https://perma.cc/TQ5R-HW8H] (diagramming disparities of eviction risk during COVID-19 pandemic).

220.   *See* Desmond, *supra* note 217, at 117.

221.   *Id.*

222.   *See id.* at 117–18.

223.   *See id.* at 91.

determine if an applicant qualified for housing.[224] Tools that screen criminal history include no context such as the nature of records found or whether an arrest resulted in a conviction.[225] The criminal system has oppressive roots.[226] Databases, such as CrimSafe, often pull information from the very penal institution that creates racial disparities in policing, courts, and the prison industrial complex.[227] Angela Y. Davis compellingly argues that mass incarceration is more closely linked to "larger economic and political structures and ideologies than to individual criminal conduct."[228] In addition, actors within the criminal system collect and calculate crime statistics, creating carceral knowledge sources that the penal institution weighs as having greater legitimacy and quality than direct community knowledge sources.[229] Direct community knowledge, information proffered by institutionalized individuals, their families, or communities, is often dismissed as insignificant.[230] The distinction between carceral and community knowledge sources highlights the carceral system's well-known history of racial bias and overpolicing in communities of color. This overpolicing has produced higher arrest rates and more criminal records, which feed algorithmic discrimination when they are used to deny housing opportunities to overpoliced Black and Brown people trapped within the prison industrial complex.

Another problematic source of crime data is intentionally manipulated or "juked" information and policing culture that feeds predictive policing technologies.[231] Scholar Rashida Richardson refers to manipulated data as

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224.	*See* Conn. Fair Hous. Ctr. v. CoreLogic Rental Prop. Sols., LLC, 369 F. Supp. 3d 362, 367 (D. Conn. 2020) (describing background of case facts and technology at issue).

225.	*See id.*

226.	*See* Connie Hassett Walker, *How You Start Is How You Finish: The Slave Patrol and Jim Crow Origins of Policing*, AM. BAR ASS'N (Jan. 11, 2021), https://www.americanbar.org/groups/crsj/publications/human_rights_magazine_home/civil-rights-reimagining-policing/how-you-start-is-how-you-finish [https://perma.cc/8K7L-JFH9] (discussing the roots of policing as stemming from the capturing enslaved people).

227.	*See generally* Angela Y. Davis & Cassandra Shaylor, *Race, Gender, and the Prison Industrial Complex*, 19 MERIDIANS 87 (2020) (discussing how the prison industrial complex is invested in expanding incarceration).

228.	*Id.* at 88.

229.	Ngozi Okidegbe, *Discredited Data*, 107 CORNELL L. REV. 2007, 2012 n.12 (2022) (defining carceral knowledge sources as "data derived from the knowledge produced by political and social systems that formally control or promote punishment and incarceration"); *see also id.* at 2014 (defining community knowledge sources as "qualitative data about the criminal legal system produced by currently and formerly incarcerated people hailing from communities most harmed by mass criminalization and incarceration").

230.	*See id.* at 2014.

231.	Richardson et al., *supra* note 57, at 18 (describing that manipulated, or "juked," data results from individual and societal bias, as well as data created from planting false evidence on people, false accusations of criminal activity, and systemic distortion of police records for political and economic gain reasons); *see id.* at 18–19 (elucidating actions that create manipulated data); *see also id.* at 21 (defining predictive policing technology as systems that analyze data to predict where a crime may occur or who is likely to be a victim or perpetrator of a crime. Police departments rely on predictive policing systems

"dirty" because it is influenced by "corrupt, biased, and unlawful [police] practices."[232] Intentional manipulation of data is an egregious extreme; however, past policing patterns shape predictive tools and cause them to reinforce "already known or ingrained biases."[233] This creates a vicious feedback loop: problematic policing practices train predictive policing systems to return officers to the same places where they already "concentrate their time," which are overpoliced and over-criminalized communities of color.[234] In summary, the dirty data used in predictive policing systems results in more arrests and convictions, which feed into data systems assessed by tenant screening tools.

3. Credit History

The use of credit history to determine a rental applicant's fitness has a significantly worse impact on applicants of color than White applicants.[235] Tenant screening algorithms use credit history, which is riddled with dirty data.[236] Credit reports do not automatically reflect rental payment history because landlords and property managers are not considered creditors.[237] Frederick Wherry[238] summarized that "the data used in current credit scoring models are not neutral; [they are] mirror[s] of inequalities from the past [and] using this data . . . ampli[fies] those inequalities today."[239] While the wealth

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for crime control and forecasting.). Commonly used predictive policing technologies use dirty data derived from the carceral system, which has been designed to criminalize Black and Brown people.

232.   *Id.* at 18.

233.   *See id.* at 19 (citing ALEXANDER, *supra* note 129) (arguing that overpolicing and contact with the criminal system is a modern Jim Crow system). *See generally* Emma Pierson, Camelia Simoiu, Jan Overgoor, Sam Corbett-Davies, Daniel Jenson, Amy Shoemaker, Vignesh Ramachandran, Phoebe Barghouty, Cheryl Phillips, Ravi Shroff & Sharad Goel, *A Large-Scale Analysis of Racial Disparities in Police Stops Across the United States*, 4 NATURE HUM. BEHAV. 736 (2019) (showing police traffic stops and searches lead to racial disparities).

234.   Richardson et al., *supra* note 57, at 19–20.

235.   Credit health reflects historical racial inequities that reduced wealth and limited economic choices for communities of color. *See Credit Health During the COVID-19 Pandemic*, URB. INST. (Mar. 8, 2022), https://apps.urban.org/features/credit-health-during-pandemic/ [https://perma.cc/Q7ML-QZY5].

236.   LAURA BLATTNER & SCOTT NELSON, HOW COSTLY IS NOISE? DATA AND DISPARITIES IN CONSUMER CREDIT 2 (2021), https://arxiv.org/pdf/2105.07554.pdf [https://perma.cc/NK7D-DC42] (concluding that errors in credit scores are greater for historically disadvantaged consumers and information disparity is primarily due to features of the underlying credit report data, not due to scoring algorithms themselves).

237.   *See* Campisi, *supra* note 21 (noting that credit histories do not include rent payments); *see also* Kenneth P. Brevoort, Philipp Grimm & Michelle Kambara, *Credit Invisibles and the Unscored*, 18 CITYSCAPE 9, 10 (2016). *But see* Erica Sandberg, *Is My Rental History on My Credit Report?*, EXPERIAN RENTALS BLOG (July 23, 2020), https://www.experian.com/blogs/ask-experian/is-my-rental-history-on-my-credit-report/ [https://perma.cc/8Q3B-TRYU] (explaining that some credit bureaus provide fee-based services to report rental payments upon request).

238.   Frederick Wherry is a Professor of Sociology and Director of the Dignity and Debt Network at Princeton University. *See Frederick Wherry*, PRINCETON UNIV., https://sociology.princeton.edu/people/frederick-wherry [https://perma.cc/EL2C-R9UX].

239.   Campisi, *supra* note 21.

divide dates back to the founding of the United States,[240] the credit creation process started with race-based credit evaluations in the New Deal era. Specifically, in 1933, the Home Owners' Loan Corporation (HOLC), a federal department, drew red lines around communities of color and identified those areas as too risky to service with mortgages and loans.[241] Risk evaluation metrics "graded neighborhoods based on criteria related to the age and condition of housing, transportation access, closeness to amenities such as parks or disamenities like polluting industries, the economic class and employment status of residents, and their ethnic and racial composition."[242] Underwriters still use these maps, generated using HOLC's race preferences, as a standard to determine creditworthiness for loan products.[243] Despite credit data's basis on de jure and de facto segregationist practices,[244] lenders rely heavily on credit scores as a metric to evaluate a person's creditworthiness for important housing valuations such as mortgage servicing, interest rate determination, and home appraisals. Normally, financial transactions alone created the data points used to assign credit scores; now, algorithms go beyond transaction history to include non-debt-related information, such as the location of where people shop and how many times they move.[245] If a consumer tends to shop in a majority-minority zip code,

240. Amended Complaint, *supra* note 1, at 14 (citing *Survey of Consumer Finances 1989–2019*, BD. OF GOVERNORS OF THE FED. RSRV. SYS., https://www.federalreserve.gov/econres/scf/dataviz/scf/chart/#series:Net_Worth;demographic:racecl4; population:all;units:median;range:1989,2019 [https://perma.cc/VD5D-CCRB] (stating the racial wealth gap is as old as the United States and continues to expand)).

241. BRUCE MITCHELL & JUAN FRANCO, NAT'L CMTY. REINVESTMENT COAL., HOLC "REDLINING" MAPS: THE PERSISTENT STRUCTURE OF SEGREGATION AND ECONOMIC INEQUALITY 5 (2018), https://ncrc.org/wp-content/uploads/dlm_uploads/2018/02/NCRC-Research-HOLC-10.pdf [https://perma.cc/F6HN-F88A] (stating maps were "created by the HOLC as part of its City Survey Program in the late 1930s); *see also* FED. HOUS. ADMIN., UNDERWRITING MANUAL: UNDERWRITING AND VALUATION PROCEDURE UNDER TITLE II OF THE NATIONAL HOUSING ACT ¶ 323(3) (1938) (advising that the presence of racial groups lowers home values). The manual provides guidance about which neighborhood characteristics promote or depress property values. *Id.* The manual states "areas surrounding a location are investigated to determine whether or not incompatible racial and social groups are present" for the purpose of making a prediction "regarding the possibility or probability of the location being invaded by such groups." *Id.*; *see also FDR and Housing Legislation*, FRANKLIN D. ROOSEVELT PRESIDENTIAL LIBR. & MUSEUM, https://fdrlibrary.org/housing [https://perma.cc/7G2Z-XGL9] (marking the creation of the HOLC). *Contra* Price Fishback, Jonathan Rose, Kenneth A. Snowden & Thomas Storrs, *New Evidence on Redlining by Federal Housing Programs in the 1930s*, J. URB. ECON., May 11, 2022, at 1, 1 (proposing that Federal Housing Administration of the 1930s denied mortgages to Black and Brown applicants before and after HOLC's infamous maps).

242. MITCHELL & FRANCO, *supra* note 241, at 5.

243. *Id.* (discussing research findings that HOLC maps contributed to discriminatory practices in mortgage lending).

244. ROTHSTEIN, *supra* note 88, at vii–viii.

245. Allen, *supra* note 22, at 238 (giving an example of complaints against American Express for discounting successful payments and tarnishing scores for shopping where other customers are considered less creditworthy); *see also* John Rampton, *Online Credit Reports & How They Are Tracking Everything You Do*, NASDAQ (Jan. 3, 2023), https://www.nasdaq.com/articles/online-credit-reports-how-they-are-tracking-everything-you-do [https://perma.cc/WN35-LV6K] (noting that credit bureaus score frequent movers lower). In light of eviction rate disparities, lower credit scores for frequent moves by Black women is another factor contributing to lower credit scores.

transaction data may create latent trait inferences that the consumer is likely Black or Brown—groups that have historically been categorized as less creditworthy. Further, the number of times a person moves negatively impacts credit scores, making disparate rates of evicted Black women even more troubling.[246] These trait inferences can lead to algorithmic redlining because location data correlated to race may negatively impact the credit scores of people classified as consumers of color.[247]

While the Equal Credit Opportunity Act (ECOA) eventually prohibited credit-scoring systems from using sex, race, marital status, national origin, or religion as part of their assessments, the prohibitions are too little, too late as "[t]he burden of poverty can trickle down to children who are at a disadvantage when it comes to being scored using today's methods."[248] On average, Black consumers experience greater financial burdens and have worse payment histories than their White peers due to "the enormous disparity in wealth-generating opportunities" that impacts data points such as credit length and payment history.[249] A history of financial institutions lending only to White people led to divestment of urban communities, poverty, and segregation, making it nearly impossible for "[B]lack communities to obtain access to equitable housing finance."[250] Even in the wealthiest communities, the racial wealth gap[251] is stark.[252] And once again, the creators of these inequities are the same institutions that founded the credit reporting industry and credit scores.[253]

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246. Rampton, *supra* note 245 (noting consumer credit history tracks addresses and people who move addresses often may be considered less financially stable, which negatively impacts credit scores).

247. Allen, *supra* note 22, at 242; *see also* Campisi, *supra* note 21 (stating credit scoring models use credit data that is systemically and historically biased against non-White communities).

248. Campisi, *supra* note 21.

249. *See id.*

250. Allen, *supra* note 22, at 235–36.

251. NAT'L CONSUMER L. CTR., PAST IMPERFECT: HOW CREDIT SCORES AND OTHER ANALYTICS "BAKE IN" AND PERPETUATE PAST DISCRIMINATION 1 (2016), https://www.nclc.org/wp-content/uploads/2022/09/Past_Imperfect.pdf [https://perma.cc/VH3H-HD6Q] (stating that as of 2017, "African American families own less than seven cents for every dollar in wealth owned by [W]hite families, while Latino households own less than eight cents for every dollar of [W]hite wealth").

252. Caroline Ratcliffe & Steven Brown, *Credit Scores Perpetuate Racial Disparities, Even in America's Most Prosperous Cities*, URB. INST. (Nov. 20, 2017), https://www.urban.org/urban-wire/credit-scores-perpetuate-racial-disparities-even-americas-most-prosperous-cities [https://perma.cc/BM68-USB3].

253. Allen, *supra* note 22, at 236. There is also the issue of reverse redlining by lenders, which led to the Great Recession. *Id.* at 236–37. Financial institutions targeted minorities with predatory lending products with high interest rates, balloon payments, and burdensome restrictions and used algorithms to accomplish their perverse lending goals. *Id.* at 239. In addition to a concerning historical background of credit creation, credit data is riddled with errors. Aaron Klein, *The Real Problem with Credit Reports Is the Astounding Number of Errors*, BROOKINGS INST. (Sept. 28, 2017), https://www.brookings.edu/research/the-real-problem-with-credit-reports-is-the-astounding-number-of-errors/ [https://perma.cc/2XR4-PLH4]. Credit reporting agencies are for-profit institutions that often shirk their legal duties. *Id.* The Fair Credit Report Act requires that, upon request, the bureaus must investigate and fix inaccurate information to ensure "maximum possible accuracy"; however, bureaus need only implement "reasonable procedures" to do so. *See* Campisi, *supra* note 21.

It is difficult to disentangle credit scores with the discriminatory housing policy in place at the start of the credit reporting industry and its ensuing development. Because credit data includes zip codes that track closely with race and are noted in transaction histories, the system is biased against Black and Brown people who simply spend money in their communities. Further, as the plaintiffs in *Louis* argue, tenant screening tools that depend on standard credit histories are poor indicators of renter reliability because credit reports typically omit accounts of on-time, regular rent payments. Tenants often pay their rent first, at the expense of other financial obligations, which can negatively impact their credit reports.[254] Segregation will continue as long as tenant screens standardize denial of people of color for using vouchers and incorporate such trivial data as where minorities shop.

4. *SafeRent as an Example of Data Biases at Work*

SafeRent, a major provider of tenant screening services, markets a variety of products nationwide.[255] SafeRent markets its tenant screening services to landlords, real estate agents, brokerages, and property managers as a tool for streamlining workflows and rental transactions.[256] SafeRent scores is a featured product that automates tenant screens using a statistical method called "Registry ScorePLUS Model" to assign scores.[257] The company developed this model by analyzing a representative sample containing millions of U.S. rental histories.[258] These histories include rental data, subprime credit information, eviction history, credit reports, and more.[259] The algorithms in SafeRent's model deliver a predictive score that purports to measure risk levels of prospective tenants who may, for example, have a history of unpaid rent, eviction records, poor landlord references (presumably discernible through court records), or property damage.[260] Scores range between 200, considered the highest risk, and 800, considered the lowest risk. While SafeRent has not disclosed the specific algorithmic models that generate the Registry ScorePLUS Model outputs, the company has said its model is rooted in "decision science" and has taken the position that rules-based methods are too subjective and overlook qualified

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254.   Matthew Desmond, *The Rent Eats First, Even During the Pandemic*, N.Y. TIMES (Aug. 29, 2020),   https://www.nytimes.com/2020/08/29/opinion/sunday/coronavirus-evictions-superspreader.html [https://perma.cc/9MYZ-V6K5].

255.   *See, e.g.*, *Products*, MYRENTAL, https://www.myrental.com/tenant-screening-products [https://perma.cc/KR96-VYVL].

256.   *Resident   Screening: Applicant   Background   Data*,   SAFERENT   SOLS., https://saferentsolutions.com/resident-screening/ [https://perma.cc/YH2S-FHY7].

257.   CORELOGIC RENTAL PROP. SOLS., *supra* note 182, at 5.

258.   *Id.*

259.   *See Resident Screening: Applicant Background Data*, *supra* note 256.

260.   *SafeRent Score*, *supra* note 5. I suspect information surrounding property damage may derive from claims in public eviction records. It is uncertain if SafeRent collects landlord references directly from housing providers or court records that allude to property damage concerns.

applicants.[261] The company also has stated that the model is supervised, indicating the presence of some human intervention.[262]

These hints indicate that the designers of the Registry ScorePLUS Model target data and label desired outcomes using inputs from credit, criminal, and eviction histories. As a result, data scientists may introduce bias by assigning labels. Racial bias introduced in the input and representative data is probable because the training data is selected from credit, criminal, and eviction histories.[263] As previously mentioned, supervised models are typically used if a data scientist wants the AI to take certain things into account and make predictions with accuracy, and the Registry ScorePLUS Model aligns with the objective of screening out certain applicants. The FHA claims in *Louis* allege that the proprietary scores generated by the Registry ScorePLUS Model have an unequal impact on Black and Hispanic applicants.[264] Most voucher-holders in Massachusetts, where the case is filed, are Black and Hispanic.[265] Plaintiffs assert that scoring most people of color who have vouchers with lower scores is unnecessary and this policy is not a legitimate business need because of the guaranteed payment structure of voucher programs.[266] The complaint details the many ways the data the ScorePLUS Model uses (which include credit scores, criminal records, and eviction records) disproportionately burden tenants of color.[267] As noted previously, expansive literature examines why credit scores—which do not include rental payment history, income, or assets—are problematic and discriminatory.[268] Most Black and Hispanic people rent rather than own (most homeowners in the United States are White),[269] making the omission of this important factor from credit reports unfair because mortgage payments and home equity loans are reflected on credit reports.

The Registry ScorePLUS Model also uses eviction histories, which are teeming with societal bias. To reiterate, non-White communities have

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261.   *See* CORELOGIC RENTAL PROP. SOLS., *supra* note 182, at 3. The CoreLogic white paper states, "Rules-based methods are subjective, and can result in well-qualified applicants being overlooked because of silver bullet trumping attributes. Furthermore, with rules-based methods it is difficult to keep track of acceptance criteria changes over time and how those changes affect overall resident quality and net operating income. The Registry ScorePLUS Model statistical lease screening method is based on decision science, supervised machine learning models that are developed from historical resident lease performance data to specifically evaluate the potential risk of a resident's future lease performance." *Id.* at 7.

262.   *Id.* at 7.

263.   *See supra* Part I.B (explaining algorithmic redlining as a result of bias in the process, bias in the input, and bias in the representative data).

264.   Amended Complaint, *supra* note 1, at 29–31.

265.   *See id.* at 27.

266.   *Id.* at 30–31. Federal and state claims have analogous disparate impact, burden-shifting frameworks.

267.   *See id.* at 5–16 (making the case for why credit history disproportionately disadvantages Black and Hispanic and low-income consumers).

268.   *See* Campisi, *supra* note 21.

269.   DeSilver, *supra* note 176 (finding that 58 percent and 52 percent of Black and Hispanic families nationwide, respectively, rent compared with 28 percent of White families).

disproportionately higher eviction rates than majority-White communities.[270] The bias inherent in both credit and eviction histories make their use precarious for people of color seeking housing. Notable in *Louis* is the trend by corporate landlords that use SafeRent services to automate denials based on scores with no semblance of care for how these decisions impact applicants. The plaintiffs in *Louis* are Black and Hispanic voucher-holders who were denied housing based purely on their SafeRent scores, with no consideration of landlord references or rental payment history.[271] Automation increases efficiency but results in dehumanization. The difference between a manual search for eviction records and one that is automated is the speed and systemization of a search with no context compared to a case-by-case evaluation that considers if researching eviction history is at all necessary. If eviction research is necessary to evaluate an applicant, parties can communicate concern. When dealing with a landlord in person, a tenant may explain issues with their applications. When automated systems replace exchanges between tenants and housing providers, applicants have no recourse for denial.[272]

Landlords using SafeRent services can determine their own tolerances for risk and set the minimum scores they will accept.[273] The company, however, consults with housing providers to help them identify their minimum scores.[274] The guidance, the ranges, and ultimately the scores are desirable services for housing providers seeking to streamline the rental application process. Despite predictive technologies' use of data rife with historical bias, PropTech and the data it uses to make decisions are not going anywhere.[275] Tenants like Ms. Louis and Ms. Douglas need recourse to protect themselves from unfair housing practices. Discriminatory effect litigation provides tenants with such recourse. Part II outlines discriminatory effect law and distinguishes between disparate impact and segregative effect theory. Part III analyzes segregative effect theory for purposes of applying it to algorithmic bias cases and suggests its usefulness as a measure to mitigate the segregation PropTech perpetuates.

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270. Hepburn et al., *supra* note 206, at 657 (explaining major findings). The first finding concluded that eviction filing and completion rates were, on average, significantly higher for Black renters than for White renters. Second, Black and Latina female renters faced higher eviction rates than their male counterparts. Third, Black and Latinx renters were most likely to be filed against serially for eviction. *Id.*

271. *See* Amended Complaint, *supra* note 1, at 20–23 (describing plaintiffs' experiences with defendant and lack of opportunity to provide supplemental materials to appeal denial decisions).

272. Emails highlighted in the complaint reveal that property managers only receive ScorePLUS Model scores that identify applicants as high or low risk. *Id.* at 9–10.

273. *See id.* at 10.

274. *Id.*

275. Paul Nash & Allen Matkins, *PropTech Trends & Strategies for Landlords*, JD SUPRA (Mar. 10, 2021), https://www.jdsupra.com/legalnews/proptech-trends-strategies-for-landlords-6463506/ [https://perma.cc/2K9B-6XEG] (highlighting the upward trajectory of PropTech's use in the real estate industry and impact on landlord business).

II.

DISCRIMINATORY EFFECT LAW AND PROPTECH

Discriminatory effect cases enable plaintiffs to challenge facially neutral policies that disproportionally impact their protected group or that reinforce segregation. The following Sections outline discriminatory effect law.

A. Discriminatory Effect Scrutiny

Discriminatory effect law is firmly established under the FHA[276] and has been recognized by courts since the 1970s.[277] The Department of Housing and Urban Development (HUD) proposed a rule in 2011 to codify discriminatory effect doctrine and finalized the rule in 2013.[278] At the time, HUD stated, "[t]his final rule embodies law that has been in place for almost four decades and that has consistently been applied, with minor variations, by HUD, the Justice Department and nine other federal agencies, and federal courts."[279] In the rule, HUD clarified the discriminatory effect standard for both disparate impact and segregative effect cases.[280] The Supreme Court in *ICP* affirmed discriminatory effect theory[281] under the FHA and endorsed HUD's three-step burden-shifting framework.[282] The Court referenced precedent from *Griggs v. Duke Power Co.*,[283] finding that disparate impact FHA claims should function similarly to disparate impact employment claims under Title VII.[284] The Court also held that when Congress amended the FHA in 1988, it ratified the disparate impact

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276. *See* Tex. Dep't of Hous. & Cmty. Affs. v. Inclusive Cmtys. Project, Inc., 576 U.S. 519, 533–35 (2015).

277. Seicshnaydre, *supra* note 36, at 359 (introducing a long history of circuit court decisions concerning both disparate impact and prevention of segregation); *see also* United States v. City of Black Jack, 508 F.2d 1179, 1183–85 (8th Cir. 1974) (upholding challenge to zoning ordinance). The court prohibited a discriminatory zoning ordinance that contributed to the "perpetuation of segregation" but did not explicitly reference segregative effect. *Id.* at 1186. The defendant city prevented multifamily affordable units from being built in its primarily White, single-family community. *Id.*; *see also* Metro. Hous. Corp. v. Vill. of Arlington Heights, 558 F.2d 1283, 1288–94 (7th Cir. 1977) (referring explicitly to "segregative effect" in opinion).

278. 24 C.F.R. § 100.500 (2020); Implementation of the Fair Housing Act's Discriminatory Effects Standard, 78 Fed. Reg. 11460, 11460 (Feb. 15, 2013).

279. Implementation of the Fair Housing Act's Discriminatory Effects Standard, 78 Fed. Reg. at 11462.

280. 24 C.F.R. § 100.500; Implementation of the Fair Housing Act's Discriminatory Effects Standard, 78 Fed. Reg. at 11462.

281. *Inclusive Cmtys.*, 576 U.S at 530–32. While the Supreme Court explicitly affirmed disparate impact theory in *ICP*, it remained silent on segregative effect theory, effectually preserving the doctrine as unchanged.

282. *Id.* at 527; *see also* 24 C.F.R. § 100.500 (stating that a plaintiff must identify a policy or practice that will actually or predictably cause a discriminatory effect; a defendant can rebut the claim by establishing a legitimate, nondiscriminatory interest; and the plaintiff can prevail by proving there exists a less discriminatory alternative).

283. *See* 401 U.S. 424, 430 (1971).

284. *Inclusive Cmtys.*, 576 U.S. at 541 (acknowledging Title VII framework is not a direct translation into the housing context but the comparison "suffices" for purposes of the opinion).

doctrine, which was already well-established under FHA interpretation.[285] Additionally, the Court affirmed that the burden-shifting model for litigants required a showing of cause to support a prima facie disparate impact case.[286] Finally, as the Court observed, federal agencies and lower courts had applied discriminatory effect doctrine for decades, creating reliance interests among various stakeholders in sectors including technology.[287]

1. The FHA's Role in Housing Barriers and Housing Improvement Litigation

Though discriminatory effect theory includes both disparate impact and segregative effect (as both tests arise from the same statutory provision in the FHA), Stacy E. Seicshnaydre categorizes discriminatory effect litigation cases as occurring within two primary frames: challenges against "housing barriers" and challenges to "housing improvement."[288] These two kinds of challenges may occur at the neighborhood and municipal levels, as well as against single landlords, apartment complexes, and home-lending and insurance institutions.[289]

Seicshnaydre's study identifies the success rate of appellate cases challenging housing barriers. Most of the early discriminatory effect cases were housing barrier cases that challenged practices such as preventing construction of housing used by minority groups in predominantly White areas, concentrating affordable housing in predominantly minority communities,[290] and denying housing choice and freedom of movement to minority households in the larger real estate market.[291] Housing barrier cases primarily concern facially neutral policies or decisions that perpetuate segregation, an approach consistent with segregative effect theory,[292] though disparate impact theory has also addressed housing barrier cases.[293] In *United States v. City of Black Jack*, one of the first

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285.   *Id.* at 536–37.

286.   *See id.* at 542 (clarifying that showing causation requires statistical analysis). The Court stated that a disparate impact claim relying on statistical disparity must fail if the plaintiff cannot point to a defendant's policy or policies causing that disparity. *Id.*

287.   *See id.* at 546.

288.   Seicshnaydre, *supra* note 36, at 360–61.

289.   *Id.* at 364–65; *see* Town of Huntington v. Huntington Branch, NAACP, 488 U.S. 15, 18 (1988) (finding insurance premiums had a disparate impact).

290.   *See*, *e.g.*, United States v. City of Black Jack, 508 F.2d 1179, 1183–85 (8th Cir. 1974) (finding an ordinance prohibiting construction of new multifamily dwellings in an all-White suburb was an artificial, arbitrary, and unnecessary barrier that perpetuated segregation); Metro. Hous. Corp. v. Vill. of Arlington Heights, 558 F.2d 1283, 1288–94 (7th Cir. 1977) (finding a petition to rezone a project intended for low-income multifamily units to a single-family units perpetuated segregation); Resident Advisory Bd. v. Rizzo, 564 F.2d 126, 149–150 (3d Cir. 1977) (discussing racial segregation in Philadelphia).

291.   Seicshnaydre, *supra* note 36, at 360–61 (describing an array of housing barrier cases).

292.   *Id.* at 361.

293.   Jackson v. Okaloosa Cnty., 21 F.3d 1531, 1543 (11th Cir. 1994) (finding that plaintiffs stated a claim for relief based on disparate impact theory). The court reasoned that exclusion of a public housing project with a waitlist of 86 percent African Americans to be built in a predominantly White

and most prominent perpetuation-of-segregation cases to challenge housing barriers, the Eighth Circuit reiterated that the purpose of the FHA was to integrate communities and remove all "artificial, arbitrary, and unnecessary barriers" to housing, regardless of racial motivation or lack thereof.[294] Housing barrier cases have been mostly successful because courts have favorably interpreted the FHA's integration purpose.[295] Seicshnaydre's frame of housing barrier cases is consistent with *ICP*'s acknowledgement of the FHA's purpose to promote integration. Her frame is also compatible with HUD's framework of segregative effect theory, which is described in detail in the next Section. The high success rate of housing barrier cases, which most often address segregation, supports my proposition for expanded use of segregative effect theory beyond traditional exclusionary zoning cases.

Seicshnaydre asserts that housing improvement challenges usually address plans to improve housing conditions through revitalization efforts that require demolishing current housing, causing involuntary displacement that disproportionately affects minorities.[296] Housing improvement cases often raise similar issues as disparate impact theory and have a lesser degree of success than housing barrier cases in court.[297] Litigators must be meticulous in their analysis to meet requirements of disparate impact scrutiny, especially in light of the *ICP* ruling.

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area had a "harsher impact on African Americans" and would have a discriminatory effect on the availability of housing for Black residents. *Id.* The facts of the case concerned segregated public housing and, by advancing disparate impact theory, the court's ruling functionally prohibited perpetuating segregation. *See also* New Orleans Fair Hous. Action Ctr. v. St. Bernard Parish, 641 F. Supp. 2d 563, 568 (E.D. La. 2009) (finding a moratorium preventing multifamily housing had a disparate racial impact on African Americans). In this case, the moratorium allegedly preserved an all-White enclave in St. Bernard Parish, thereby perpetuating segregation.

294. *Black Jack*, 508 F.2d at 1184 (quoting Griggs v. Duke Power Co., 401 U.S. 424, 431 (1971); Seicshnaydre, *supra* note 36, at 366.

295. Seicshnaydre, *supra* note 36, at 400 (diagramming that housing barrier challenges are twice as successful as housing improvement challenges: 42 percent versus 21 percent respectively). According to Seicshnaydre, data shows that over the past forty years, plaintiffs at the appellate level most often receive positive outcomes in housing barrier claims. *Id.* at 358. Seicshnaydre discusses several early FHA cases that challenged housing barrier regulations. *Id.* at 365–71 (analyzing *Black Jack*, 508 F.2d 1179; *Metro. Hous. Dev. Corp.*, 558 F.2d 1283; *Rizzo*, 564 F.2d 126; Huntington Branch, NAACP v. Town of Huntington, 844 F.2d 926 (2d Cir. 1988)). However, "some challenges to housing barriers have failed to demonstrate the existence of a discriminatory barrier in the first place." *Id.* at 373–74 (analyzing Artisan/American Corp. v. City of Alvin, 588 F.3d 291 (5th Cir. 2009); Burrell v. City of Kankakee, 815 F.2d 1127 (7th Cir. 1987)).

296. *Id.* at 361.

297. Examples of winning cases for plaintiffs include Gallagher v. Magner, 619 F.3d 823 (8th Cir. 2010); Mt. Holly Gardens Citizens in Action, Inc. v. Twp. of Mt. Holly, 658 F.3d 375 (3d Cir. 2011); Charleston Hous. Auth. v. U.S. Dep't of Agric., 419 F.3d 729 (8th Cir. 2005). Examples of losing cases for plaintiffs include Bonasera v. City of Norcross, 342 F. App'x. 581 (11th Cir. 2009); Catanzaro v. Weiden, 188 F.3d 56 (2d Cir. 1999); 2922 Sherman Ave. Tenants' Ass'n v. Dist. of Columbia, 444 F.3d 673 (D.C. Cir. 2006). *See also* Tex. Dep't of Hous. & Cmty. Affs. v. Inclusive Cmtys. Project, Inc., 576 U.S. 519 (2015); Armendariz v. Penman, 75 F.3d 1311, 1316 (9th Cir. 1996) (affirming the district court's denial of the defendants' motions for summary judgment on the plaintiffs' disparate impact claim).

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2. Inclusive Communities *Ruling*

In 2015, the Supreme Court endorsed disparate impact claims under the FHA.[298] Justice Kennedy summarized the long history of de jure residential segregation to demonstrate that Congress passed the FHA to promote racial integration.[299] Furthermore, the detailed historical narrative attempted to preserve discriminatory effect liability against government actors in the "prototypical housing barrier cases," such as *City of Black Jack*, et al.[300]

The Court supported its reasoning by comparing the statutory language and purpose of the FHA to its legislative counterparts, Title VII of the 1964 Civil Rights Act (Title VII) and the Age Discrimination Employment Act (ADEA), both of which recognize disparate impact liability.[301] The Court applied the *Griggs* analysis to the FHA and affirmed that disparate impact liability "mandates the 'removal of artificial, arbitrary, and unnecessary barriers.'"[302]

While the Court did not explicitly refer to segregative effect theory, Justice Kennedy did state that the FHA aims to remove unnecessary barriers that arbitrarily create discriminatory effects or "perpetuat[e] segregation."[303] Likewise, the Court concluded the opinion by identifying the purpose driving its analysis, which was to eliminate the vestiges of "residential segregation by race."[304] And, as discussed previously, housing barrier cases that address segregation have survived appeals. While acknowledgement of segregative effect theory in the opinion is interpretative, the historical, political, and social background outlined in the opinion highlights the weight and application of segregative effect theory and supports the position that the theory has remained intact.

Daniel Sheehan analyzed *ICP* using Seicsnaydre's doubleframe of housing barrier and improvement cases. Sheehan commented on a factual and conceptual tension in the *ICP* opinion about the housing barrier and improvement concepts.[305] More specifically, Justice Kennedy promoted and affirmed barrier cases while simultaneously limiting revitalization cases, resulting in what Sheehan described as "an awkward framework that may direct outcomes contrary to Justice Kennedy's stated interests in promoting

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298. *Inclusive Cmtys.*, 576 U.S. at 545 (holding that disparate impact claims are cognizable under the FHA); *see also id.* at 528–30 (concluding recognition of disparate impact claims is consistent with the FHA's central purpose).

299. *Id.* at 528–30 (discussing housing discrimination history).

300. Daniel Sheehan, *Disparate Impact Liability Under the Fair Housing Act After Inclusive Communities*, 25 J. AFFORDABLE HOUS. & CMTY. DEV. L. 391, 407 (2017) (highlighting that Justice Kennedy's narrative promoting residential racial integration preserved the traditional approach of housing barrier cases to remove barriers to mobility).

301. *Inclusive Cmtys.*, 576 U.S. at 531–32 (citing Griggs v. Duke Power Co., 401 U.S. 424 (1971); Smith v. City of Jackson, 544 U.S. 228 (2005)).

302. *Id.* at 540 (quoting *Griggs*, 401 U.S. at 431).

303. *Id.* (referencing perpetuation of segregation).

304. *Id.* at 588.

305. *See* Sheehan, *supra* note 300, at 393.

integration."[306] Sheehan argued that Justice Kennedy took a difficult posture that resulted in a standard that seems counterintuitive to promoting integration.[307]

In light of the historical narrative and Court's recognition of disparate impact liability and integration goals, I agree with Sheehan that the posturing of the case is odd. While the Court affirmed both disparate impact and segregative effect theories, it also raised concern about the potential for defendants to be abused by disparate impact claims.[308] As such, the Court asserted that disparate impact claims that rely "on a statistical disparity must fail if the plaintiff cannot point to a defendant's policy or policies causing that disparity. A robust causality requirement ensures that "[r]acial imbalance . . . does not, without more, establish a prima facie case of disparate impact . . . ."[309]

After the Court determined a robust causality requirement, Justice Kennedy reiterated the need for "adequate safeguards at the prima facie stage" because disparate impact claims might raise constitutional questions concerning racial quotas.[310] Lastly, the Court asserted that lower courts must "examine with care" whether a plaintiff satisfies a prima facie case of disparate impact[311] and affirmed that without sufficient facts or statistical evidence demonstrating a causal connection, claims are subject to pretrial dismissal.[312] However, the Court did not provide guidance for determining what the statistical evidence should entail.[313]

I suggest that the evidentiary standard established by *ICP* has less bearing on segregative effect scrutiny than disparate impact analysis for one primary reason: because the case pronounces the significance of ensuring integrated living patterns. When Justice Kennedy expressed that disparate impact liability (of the kind that concerns improvement cases) would "impose onerous costs on

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306.   *Id.* at 398.

307.   *See id.* at 409. Sheehan suggests "Justice Kennedy is thus confronted in *Inclusive Communities* with a fact pattern that contains elements of a housing barrier case and elements of a housing improvement case. Kennedy aims in his opinion to protect the use of disparate impact liability for housing barrier cases while sharply limiting such liability for housing improvement cases." He also argues "the result is a framework that will make it more difficult for plaintiffs to bring disparate claims against both housing barrier and housing improvement regulations. When applied to policies that involve trade-offs between the promotion of integration and revitalization, the new framework will favor revitalization over integration." *Id.*

308.   *Inclusive Cmtys.*, 576 U.S. at 543–44.

309.   *Id.* at 542.

310.   *Id.* But, before raising this concern, the Court acknowledged that disparate impact claims have always been properly limited to avoid constitutional questions that might arise under the FHA. *Id.* at 540.

311.   *Id.* at 542.

312.   *Id.*

313.   Robert G. Schwemm & Calvin Bradford, *Proving Disparate Impact in Fair Housing Cases After* Inclusive Communities, 19 N.Y.U. J. LEGIS. & PUB. POL'Y 685, 690 (2016) (summarizing takeaway of *ICP* opinion). HUD takes the position that "it would be impossible to specify in the rule the showing that would be required to demonstrate a discriminatory effect" from a statistical standpoint, given the wide variation of practices that could lead to such effects. Implementation of the Fair Housing Act's Discriminatory Effects Standard, 78 Fed. Reg. 11460, 11468 (Feb. 15, 2013).

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actors who encourage revitalizing dilapidated housing in our Nation's cities merely because some other priority might seem preferable,"[314] Justice Kennedy's rhetoric did not focus on challenges to practices that create barriers to housing in segregated communities. Rather, he restricted challenges to revitalization when he asserted that disparate impact liability should be limited as it "might displace valid governmental and private priorities."[315] Further, Justice Kennedy simultaneously strengthened the foundation of segregative effect doctrine by calling for the necessary removal of "artificial, arbitrary, and unnecessary barriers" for housing opportunity and mobility.[316]

HUD's regulatory standards, discussed in detail below, align with *ICP* precedent.[317] A plaintiff must show a "robust causality" of disparate impact and segregative effect to a sufficiently large degree and must provide statistical evidence to satisfy their claims.[318] I suggest that this analytical frame for segregative effect theory is not evidentiarily insurmountable. As Sheehan noted, causality is less relevant for segregative effect claims because it is generally clear which housing barrier, practice, or policy is the cause of segregation, and it is less clear in housing revitalization cases.[319] Moreover, the remedies under disparate impact and segregative effect theories have a key distinction: one seeks to protect classes of people, the other to integrate communities. While both disparate impact and segregative effect theories can promote integration, I agree with Seicshnaydre that the remedy for successful disparate impact claims in housing barrier cases, which mostly apply segregative effect theory, is to remove the challenged barriers and create housing opportunities where they did not previously exist, thereby furthering both the FHA's nondiscrimination and integration goals. In contrast, housing improvement cases, which are mostly disparate impact claims, seek to prevent displacement from housing opportunity

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314. *Inclusive Cmtys.*, 576 U.S. at 541.

315. *Id.* at 544.

316. *Id.* at 540 (quoting Griggs v. Duke Power Co., 401 U.S. 424, 431 (1971)). The U.S. Department of Justice (DOJ) filed a Statement of Interest for the *Louis* case on January 9, 2023, clarifying *ICP*'s purpose for quoting *Griggs* language above. The DOJ reiterated that *ICP* did not change the pleading standard for disparate impact claims or add new requirements, as argued by defendants in a motion to dismiss. Statement of Interest of the United States, *supra* note 21, at 7. Rather, *ICP* invokes *Griggs*'s "artificial, arbitrary, and unnecessary" language to illustrate the types of policies that disparate impact law is designed to address. *Id.* The DOJ explained that disparate impact law "has 'always' included doctrinal 'safeguards' to ensure that disparate impact suits prevail only when they target policies that are truly 'artificial, arbitrary, and unnecessary.'" *Id.* at 7. *ICP* does, however, place emphasis on sufficient causality requirements as explained above.

317. Reinstatement of HUD's Discriminatory Effect Standard, 86 Fed. Reg. 33590, 33592 (June 25, 2021) (analyzing application of HUD rule and *ICP* case). The register states that "[t]he Court did not call into question the 2013 Rule's framework for analyzing discriminatory effects claims, nor did it suggest that HUD should make any modifications to that framework." *Id.*

318. *Inclusive Cmtys.*, 576 U.S. at 540–42 (affirming a robust causality requirement protects defendants against abuse of racial quotas in violation of Constitution and statistical disparity alone is insufficient).

319. Sheehan, *supra* note 300, at 411.

where it already existed. This likely furthers the FHA's nondiscrimination goal, but not necessarily the integration aim.

In the next Section, I summarize the standards of discriminatory effect theory and feature two pending cases challenging PropTech. In the last Section, I highlight some of the benefits of segregative effect theory and ways for re-imagining its use to address PropTech, which may perpetuate segregated living patterns.

B.   *Disparate Impact and Segregative Effect Steps*

HUD's discriminatory effect law allows plaintiffs to file claims alleging disparate impact against protected groups or segregative effects harming a community.[320] Each claim has an initial, and slightly different, prima facie burden. Disparate impact requires the plaintiff to (1) identify a particular policy or practice to challenge; (2) show a sufficiently large disparity in how this policy affects a class of persons protected by the FHA compared with others; and (3) prove that this disparity is actually caused by the defendant's challenged policy.[321] By contrast, segregative effect requires a plaintiff to (1) identify a practice of the defendant's to challenge; (2) show, through statistical evidence, that the practice exacerbates segregation in the relevant community to a sufficiently large degree; and (3) prove that the defendant's challenged practice actually caused the segregative effect.[322]

Both theories require a "robust causality" between the policy or practice and the harm caused.[323] The primary difference between the two theories is that disparate impact analyzes how protected groups fare in comparison to similarly situated, nonprotected groups, and segregative effect concerns how a practice causes segregation in a particular location.[324]

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320.   *See supra* note 31 (outlining segregative effect theory).

321.   For a more complete discussion of disparate impact, see generally Schwemm & Bradford, *supra* note 313, at 685.

322.   *See* Implementation of the Fair Housing Act's Discriminatory Effect Standard, 78 Fed. Reg. 11460, 11468–69 (Feb. 15, 2013); *Inclusive Cmtys.*, 576 U.S. at 542–43.

323.   *Inclusive Cmtys.*, 576 U.S. at 521, 542.

324.   After the Supreme Court's affirmation in *ICP*, the three-step burden-shifting framework was changed under the Trump administration in 2020. The Trump administration proposed changing HUD's 2013 disparate impact rule by heightening standards required to establish a prima facie disparate impact claim. The 2020 rule also omits segregative effect doctrine. Fair housing advocates abhorred changes to the rule and sued the administration because they understood the new requirements would make it nearly impossible for plaintiffs to succeed at the pleading stage of alleging algorithmic bias claims. The private sector, including insurance and technology companies, welcomed the changes. With proposed changes, there would be virtually no mechanism in place to keep the private sector accountable for use of algorithmic tools resulting in biased outcomes, in large part because of overly broad affirmative defenses. In 2020, HUD, under the Trump administration, proposed a new rule supported by the technology sector because the new rule would have given tech companies far-reaching leverage against litigants claiming algorithmic bias. *See* 24 C.F.R. § 100.500 (2020). In 2021, under the Biden administration, HUD reinstated the prior 2013 three-step analysis into a new 2021 rule and restored the language. *See id.* § 100.500. The 2021 rule is largely modeled after the 2013 rule and is currently

Both disparate impact and segregative effect are analyzed under the same three-step burden-shifting framework, which requires (1) the charging party to prove that a challenged practice caused or predictably will cause a discriminatory effect;[325] (2) if the plaintiff satisfies the initial burden of proof, the burden to shift to the defendant to "prov[e] that the challenged practice is necessary to achieve one or more substantial, legitimate, nondiscriminatory interests;"[326] and finally, (3) if the defendant satisfies the burden, the plaintiff may still prevail by showing that an alternative practice with a less discriminatory effect could serve the same goal as the challenged practice.[327]

A prima facie analysis under each theory must satisfy the first step of the framework, but the first step for each theory has minor differences (explained in more detail in the next Section). The second step gives defendants an opportunity to defend their neutral practice or decision-making and show that their policy or practice is legitimate, despite its effects on protected groups or segregation.[328] Should a defendant meet their legitimate interest burden, the third step allows the plaintiff a final rebuttal to show that a less discriminatory alternative is available.[329]

Overall, the three-step model can benefit fair housing advocates. Step one presents evidentiary challenges. The burden-shifting approach gives both parties a more equal footing to claim and defend against unintentional discrimination.[330] For example, in *Mhany Management, Inc. v. County of Nassau*, developer

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pending. The 2013 rule, which includes the three-step analysis, allows for a broader application of discriminatory effect law.

325.   *Id.* § 100.500(b) (2020); *see also Inclusive Cmtys.*, 576 U.S. at 527 (quoting HUD standard).

326.   24 C.F.R. § 100.500(d)(2); *see also Inclusive Cmtys.*, 576 U.S. at 527 (quoting HUD standard). Once a defendant has satisfied its burden at step two, a plaintiff may "prevail upon proving that the substantial, legitimate, nondiscriminatory interests supporting the challenged practice could be served by another practice that has a less discriminatory effect." *Id.*; *see also* United States v. City of Black Jack, 508 F.2d 1179, 1184–85 (8th Cir. 1974) (describing three-step burden-shifting framework); *Inclusive Cmtys.*, 576 U.S. at 541–42 (clarifying that causation requires statistical analysis and that a disparate impact claim relying on statistical disparity must fail if the plaintiff cannot point to a defendant's policy or policies causing that disparity).

327.   *See* 24 C.F.R. § 100.500(c)(3).

328.   Under the Equal Protection Clause of the Fourteenth Amendment, discriminatory intent is required to prove racial discrimination, which is an incredibly difficult standard to prove because discrimination is less explicit than in the past and manifests today under neutral terminology with disproportionate racial outcomes. U.S. CONST., amend. XIV, § 1. In equal protection cases, a defendant can more easily claim any legitimate reason for a practice, and there is little further investigation or evidence required to prove that the reason is not pretextual. In FHA cases, courts have considered more context in their determination as to whether a proposed legitimate reason is pretextual.

329.   *See, e.g.*, Mhany Mgmt., Inc. v. Cnty. of Nassau, 819 F.3d 581, 619 (2d Cir. 2016).

330.   Under equal protection analysis and Title VII, if the state, entity, or employer provides a legitimate business interest, the analysis ends there. Under Title VIII, defendants generally must provide more evidence that their policy is legitimate. And even still, the plaintiff can propose a less discriminatory option. *See* Russell W. Galloway, Jr., *Basic Equal Protection Analysis*, 29 SANTA CLARA L. REV. 121, 135 (1989); *Title VII–Litigation/Cause of Action Guidelines*, AM. BAR ASS'N, https://www.americanbar.org/content/dam/aba/events/labor_law/2021/midwinter/err/materials/title-vii-litigation.pdf [https://perma.cc/PDP4-LV25].

plaintiffs sued the County of Nassau for changing zoning requirements from multifamily to single-family zoning at the request of White residents.[331] Plaintiffs claimed the change was racially discriminatory and violated the FHA's disparate impact and segregative effect doctrines.[332] On appeal, the Second Circuit upheld the lower court's finding that plaintiffs met their prima facie burden for step one of the burden-shifting framework for both disparate impact and segregative effect and the City properly identified "legitimate, bona fide governmental interests."[333] However, the case was remanded, allowing plaintiffs an opportunity to identify less discriminatory alternatives under disparate impact and segregative effect theory because the lower court erred in its burden-shifting analysis.[334] After the decision, the case settled, and the City agreed to pay $5.4 million to plaintiffs to build affordable housing.[335]

Mhany illustrates the value of the plaintiff's final rebuttal. If a plaintiff can survive step one, the viability of their case remains strong despite legitimate reasons for the defendant's policy. Section C elaborates on the requirements for surviving a motion to dismiss under step one of the burden-shifting framework and illustrates the benefits of segregative effect theory and its potential application to algorithmic redlining.

C. Unpacking Step One—The Prima Facie Burden

As discussed in the previous section, the Court in *ICP* affirmed that failing to show causation with sufficient statistical analysis could result in pre-trial

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331.   819 F.3d at 588–98 (detailing extensive case background). Minority groups were 14.8 percent of all households in Nassau County. *Id.* at 588. Blacks and Hispanics "represented 53.1 percent of the County's 'very low' income, non-elderly renter households." *Id.* Also, Blacks "made up 88 percent of the County's waiting list for Section 8 housing." *Id.* "[E]xcluding the 61 percent of the minority population representing students living in dormitories, Garden City's minority population was only 2.6 percent." *Id.*

332.   *Id.* at 598 (laying out procedural history and plaintiff allegations). Another central claim in this case was disparate treatment alleging intentional discrimination. The court found evidence of racial animus and concluded plaintiffs met their prima facie burden under all three steps of the *McDonnell Douglas* analysis, which has a similar three-step burden-shifting framework: identifying a challenged policy, defendant's rebuttal of legitimate business interests, and plaintiff's final rebuttal that business interests are pretext.

333.   *Id.* at 617–20. According to the lower court, plaintiffs established a prima facie case of disparate impact, finding that the change in zoning had a significant disparate impact on minorities because it "largely eliminated the potential for the type of housing that minorities were disproportionately likely to need—namely, affordable rental units." *Id.* at 617. Further, the zoning restriction from multifamily to single-family housing perpetuated segregation "because it decreased the availability of housing to minorities in a municipality where minorities constitute approximately only 4.1 percent of the overall population . . . and only 2.6 percent of the population living in households." *Id.* at 620.

334.   *Id.* at 620 (explaining reasoning for burden shift to plaintiffs). The court affirmed the proper interpretation of HUD's 2013 discriminatory effect guidance. *Id.* at 618.

335.   David Winzelberg, *Nassau Reaches Settlement on Fair Housing Lawsuit*, LONG ISLAND BUS. NEWS (Mar. 15, 2019), https://libn.com/2019/03/15/nassau-reaches-settlement-on-fair-housing-lawsuit/ [https://perma.cc/X3BZ-ACKP].

dismissal as early as the pleading stage.[336] Step one's importance is without question for both disparate impact and segregative effect theory. For a plaintiff to successfully allege disparate impact post-*ICP*, they must (1) identify a specific policy or practice that is being challenged,[337] (2) show a sufficiently large disparity in how the policy affects a class of persons protected by the FHA compared with others, and (3) prove that the disparity is caused by the defendant's challenged policy.[338]

The comparative requirement in step two between protected persons and majority groups warrants careful calculation. Courts require a statistical showing of how the identified policy impacts the legally protected group and how they fare in comparison to the majority group.[339] The disparity must be relatively sizable. However, courts have not imposed any specific parameters on how a plaintiff must collect such evidence, noting that plaintiffs must "offer proof of disproportionate impact measured in a *plausible way*."[340] While specifics are not

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336. Schwemm & Bradford, *supra* note 313, at 689 (citing Implementation of the Fair Housing Act's Discriminatory Effects Standard, 78 Fed. Reg. 11460, 11482 (Feb. 15, 2013) (codified at 24 C.F.R. § 100.500 (2020))).

337. *See id.* at 693–95 (citing examples of policies or practices challenged under the first element prima facie standard, which include residency preferences favoring local connections over "outsiders;" screening tactics used by landlords to limit units based on source of income, citizenship, criminal history, and other criteria that disproportionately harm minorities; exclusionary zoning and other land-use restrictions; mortgage practices; home-insurance standards; and occupancy restrictions).

338. *Id.* at 695 (citing Tex. Dep't of Hous. & Cmty. Affs. v. Inclusive Cmtys. Project, 567 U.S. 524, 543 (2015)).

339. *See, e.g.*, R.I. Comm'n for Hum. Rts. v. Graul, 120 F. Supp. 3d 110, 124 (D.R.I. 2015) ("Disparate impact is proven by presentation of evidence 'compar[ing] those affected by the policy with those unaffected by the policy.'"); NAACP v. N. Hudson Reg'l Fire & Rescue, 665 F.3d 464, 479 (3d Cir. 2011) (finding possible discrimination where only 0.62 percent of firefighters hired were Black, compared with the entire Black population of 3.4 percent); Keith v. Volpe, 858 F.2d 467, 484 (9th Cir. 1988) (finding that a development policy "had twice the adverse impact on minorities as it had on [W]hites," a showing which "established a racially discriminatory effect"); Huntington Branch, NAACP v. Town of Huntington, 844 F.2d 926, 928–29 (2d Cir. 1988) (holding that plaintiffs established a prima facie case by showing that the impact of shortage of affordable rental housing was "three times greater on [B]lacks than on the overall population"); Gashi v. Grubb & Ellis Prop. Mgmt. Servs., 801 F. Supp. 2d 12, 16 (D. Conn. 2011) (finding a prima facie case of disparate impact where 30.76 percent of households with children were adversely affected by the one bedroom/two persons occupancy limit, while only 9.88 percent of households without children were so affected).

340. *See* Schwemm & Bradford, *supra* note 313, at 697 (emphasis added) (citing Mt. Holly Gardens Citizens in Action, Inc. v. Twp. of Mount Holly, 658 F.3d 375, 382 (3d Cir. 2011)); *see also* Bonasera v. City of Norcross, 342 F. App'x. 581, 585 (11th Cir. 2009) (declining to propose a single test to measure disparate impact but stating that it is typically demonstrated by statistics); Langlois v. Abington Hous. Auth., 207 F.3d 43, 50 (1st Cir. 2000) (upholding a finding of disparate impact where the selection rate for one race was less than four-fifths the rate for the group with the highest selection rate); Implementation of the Fair Housing Act's Discriminatory Effects Standard, 78 Fed. Reg. at 11468 ("Whether a particular practice results in a discriminatory effect is a fact-specific inquiry. Given the numerous and varied practices and wide variety of private and governmental entities covered by the Act, it would be impossible to specify in the rule the showing that would be required to demonstrate a discriminatory effect in each of these contexts."). HUD specifically noted that its regulation was not designed "to describe how data and statistics may be used in the application of the [impact] standard," nor did it provide "a codification of how data and statistics may be used in the application of the standard." *Id.*

required, courts have provided guidelines for determining the sufficiency of the plaintiff's evidence.[341]

To understand the varying degrees of difficulty for proving steps one through three for a prima facie disparate impact case, consider *Louis*. In *Louis*, landlords denied plaintiffs' rental applications using SafeRent's tenant screening tool. Under these circumstances, it is relatively clear that the policy or practice at issue is the use of the automated SafeRent screens that produce a score used to determine acceptance or denial of applications. In *Louis*, identifying the policy or practice is relatively straightforward. However, it becomes less clear to identify the policy or practice at issue under more complicated facts such as in *ICP* where the allegedly problematic policy concerned the federal government's low-income housing tax credits distributed to developers through state agencies.[342]

The second step requires plaintiffs to show a sufficiently large disparity in how the policy affects a class of persons protected by the FHA compared with others. Continuing with the *Louis* example, the plaintiffs allege disparate impact on account of race, a protected class under federal law. The comparative group would likely be a combination of White applicants without vouchers compared to Black applicants with and without vouchers in order to isolate the variable of race and demonstrate that lower SafeRent scores (often assigned to people of color with vouchers) disproportionately affect Black applicants compared to White applicants.

An added layer of difficulty arises under *Louis*'s state claims because of the difficulty of isolating the variable of source of income between Black voucher and non-voucher-holders and White voucher and non-voucher-holders. For example, tracking how the screening device caused a disproportionate impact based on voucher status and accessing information about applicant status (acceptance or denial) is a logistical challenge.[343] Within this affected population, statistics must reflect correct comparison groups using percentages (not absolute numbers) to show that the challenged policy hurts Black voucher-holders and Black people who do not have vouchers more than White voucher-holders and White people who do not have vouchers.[344] And of course, the impact must be more than just negative; it must be sufficiently large and *disproportionate*.

Finally, proving that the tenant screening tool actually screened out more Black and Hispanic applicants than White applicants presents challenges. A

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341. *See* Schwemm & Bradford, *supra* note 313, at 697. Schwemm and Bradford further cite examples of sufficient statistics, such as the subset of the population affected by the challenged policy, appropriate comparison groups, the statistical comparison showing relative percentages of protected vs. non-protected class members (not absolute numbers), and the disparity being significant. *Id.* at 697–99.

342. *Inclusive Cmtys.*, 576 U.S. at 524 (summarizing initial facts).

343. *See* Schwemm & Bradford, *supra* note 313, at 698 (detailing disparate impact steps).

344. *Id.* at 698–99. See full article to a get a detailed analysis of methodology and source data for proving impact claims.

plethora of other reasons may explain why a tenant had an application denied. The tenant screening tool must be the cause of different treatment for both groups, and the showing must be significant enough for a court to conclude that it is "robust" under *ICP* standards.[345]

The prima facie burden for segregative effect is slightly different than disparate impact. A plaintiff must (1) identify a particular practice or policy of the defendant's to challenge, (2) show through statistical evidence that this practice exacerbates segregation in the relevant community to a sufficiently large degree, and (3) prove that the defendant's challenged practice actually caused this segregative effect.[346] The slight difference in the law makes segregative effect constructive when thinking about how to broaden its application.

Consider *Louis* again. Like disparate impact, plaintiffs must identify a particular practice or policy to challenge. The conclusion is similar under the *Louis* facts, with one caveat. Segregative effect doctrine allows for the challenged practice to be a one-time decision as opposed to a policy.[347] Robert Schwemm, a leading scholar of both disparate impact and segregative effect theory, maintains that segregative effect theory can be applied to single decision situations (and most likely to across-the-board policies that cause segregation) because segregative effect theory was built on appellate cases involving challenges to individual zoning decisions.[348] Conversely, *ICP* is clear that one-time decisions are insufficient to show a disparate impact; historically, one-time decision claims using disparate impact theory have not held up in court.[349]

To illustrate these points, if the landlord in *Louis* decided to use SafeRent for a limited period of time, one could argue the finite use of the tool is not a policy but is a one-time decision to try the service. The same argument could

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345.   *Inclusive Cmtys.*, 576 U.S. at 542 (stating robust causality requirement). *Contra* Statement of Interest of the United States, *supra* note 21, at 10 (stating that greater specificity regarding the disparity between Black and Hispanic voucher-holders and voucher-holders of other races is "often" not required); *see also* Conn. Fair Hous. Ctr. v. CoreLogic Rental Prop. Sols., LLC, 369 F. Supp. 3d 362, 379 (D. Conn. 2020) (noting that "sufficient statistical support" is "not required" at the pleading stage).

346.   *See* 24 C.F.R. § 100.500(c).

347.   For disparate impact cases, see *Inclusive Cmtys.*, 576 U.S. at 543 (affirming that a one-time decision may not be a policy at all). For segregative effect cases, see, e.g., United States v. City of Black Jack, 508 F.2d 1179, 1188 (8th Cir. 1974) (maintaining the act of passing an ordinance to segregate Blacks from the predominantly White community of Black Jack is a discriminatory effect in violation of FHA); Metro. Hous. Dev. Corp. v. Vill. of Arlington Heights, 558 F.2d 1283, 1288 (7th Cir. 1977) (stating the Village's *one* action in preventing multifamily housing from being built had the effect of perpetuating segregation in Arlington Heights (emphasis added)); Huntington Branch, NAACP v. Town of Huntington, 844 F.2d 926, 938 (2d Cir. 1988) (finding that Huntington's refusal to amend restrictive zoning ordinance to permit multifamily housing outside a predominantly Black area significantly perpetuated segregation in the Town).

348.   Schwemm & Bradford, *supra* note 313, at 737–38. Schwemm and Bradford offer two more examples of statutory and regulatory interpretation focusing on the terms practice and act under the FHA, suggesting the language denotes singular acts. *Id.*

349.   *Inclusive Cmtys.*, 576 U.S. at 543 (providing an example of how a plaintiff will not be able to show that a developer deciding to build a project in one location over another is a policy causing a disparate impact because such a one-time decision may not be a policy at all).

apply despite the exclusion of protected persons during the time of use. On the other hand, if that one-time decision to use the tenant screening tool prevented the *Louis* plaintiffs from living in a primarily White community, the screening tool would have effectively created, perpetuated, or reinforced segregation. The outstanding question is whether the segregation is sufficiently large per *ICP* standards. Since *ICP*, the legal landscape has been unclear on this point. Pre-*ICP*, a small amount of segregation would likely suffice.[350]

The one-time decision standard can be useful for issues concerning algorithmic redlining outside the *Louis* facts because it can encompass more decision-making scenarios, building in flexibility and expanding the theory beyond the reach of disparate impact doctrine.[351]

The second step of a prima facie segregative effect case presents similar data challenges to those posed by disparate impact but relies on statistics that more narrowly focus on geography, as segregation is "limited by the boundaries of [the] harmed community."[352] Claims fail, though, if plaintiffs argue that a practice segregates a community that is already integrated or when it is a transitional community on its way to becoming more integrated.[353] In *CoreLogic*,

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350.   *See* Schwemm, *supra* note 31, at 713–14, 731 (explaining the local nature of boundary and community for segregative effect claims); *id.* at 731, 738–39 (citing Mhany Mgmt., Inc. v. County of Nassau, 819 F.3d 581, 588 (2d Cir. 2016) ("Blacks and Hispanics, who accounted for fifteen percent of Nassau County's population, but most of its low-income households and eighty-eight percent of its Section 8 waiting list, made up only between two percent and four percent of Garden City's residents."); Anderson Grp., LLC v. City of Saratoga Springs, 805 F.3d 34, 38–39 (2d Cir. 2015) ("In 2000 . . . over 40 percent of the City's total households were of low-to-moderate income, meaning that they earned less than 80 percent of the area's median income. Yet only half of those households resided in affordable housing units.").

351.   *See* Schwemm, *supra* note 31, at 736, 738; McCulloch v. Town of Milan, 559 F. App'x. 96, 99 (2d Cir. 2014); L&F Homes & Dev., LLC v. City of Gulfport, 538 F. App'x. 395, 400–01 (5th Cir. 2013); Reg'l Econ. Cmty. Action Program, Inc. v. City of Middletown, 294 F.3d 35, 53 (2d Cir. 2002); Simms v. First Gibraltar Bank, 83 F.3d 1546, 1555 (5th Cir. 1996); Ventura Vill., Inc. v. City of Minneapolis, 318 F. Supp. 2d 822, 827–28 (D. Minn. 2004), *aff'd*, 419 F.3d 725 (8th Cir. 2005); *see also Inclusive Cmtys.*, 576 U.S. at 543 (noting that a "one-time decision may not be a policy at all" for disparate impact purposes), *remanded to* 2016 WL 4494322, at *5–7 (N.D. Tex. Aug. 26, 2016) (ruling against plaintiff's impact claim in part because it did not challenge a specific, facially neutral policy of the defendant); *cf. Mhany*, 819 F.3d at 619 (upholding FHA-impact claim, in suit prompted by defendants' blocking of plaintiffs' proposed housing development, as properly challenging a general zoning "policy" as opposed to a single, isolated zoning "decision").

352.   Schwemm, *supra* note 31, at 738.

353.   *Id.* at 739 ("Courts that found the plaintiffs' proof inadequate noted that the percentage of minorities living in the target community roughly mirrored the overall area's racial demographics."). A few cases have suggested that segregative effect theory requires that the challenged practice "significantly" perpetuate segregation. *Id.* at 742. However, other cases have found segregative effect even where the actual effect on a community's segregation seems to be small. *Id.*; *see, e.g.*, Ave. 6E Invs., LLC v. City of Yuma, No. 2:09-CV-00297, 2013 WL 2455928, at *7 (D. Ariz. June 5, 2013) (rejecting segregative-effect claim because the racial impact of the blocked development was not "significant enough"), *rev'd on other grounds*, 818 F.3d 493 (9th Cir. 2016), *cert. denied*, 137 S. Ct. 295 (Oct. 11, 2016) (No. 15-1545); Metro. Hous. Dev. Corp. v. Vill. of Arlington Heights, 558 F.2d 1283, 1291, 1294 (7th Cir. 1977) (finding a possible FHA violation because of segregative effect, despite weak evidence of disparate racial impact); *see* Artisan/American Corp. v. City of Alvin, 588 F.3d 291 (5th

Willimantic, Connecticut, where the Arroyos applied to rent their apartment, is an integrated neighborhood evidenced by its significant Hispanic population (46 percent),[354] which suggests why counsel did not include a segregative effect claim. Similarly, in *Louis*, the integration issue may have been why counsel did not include a segregation claim.

Racial composition is central to segregative effect cases, which often rely on local census data.[355] Census data yields a more straightforward analysis of the relevant location as more or less segregated because of a neutral practice.[356] Though *ICP* suggests that segregation must occur to a sufficiently large degree, Schwemm highlights that successful claims of segregative effect have historically required nominal evidence of segregation. Courts have accepted data that "need not be sophisticated" and have not required more advanced statistical models despite their availability, suggesting that proving segregative effect claims has been fairly feasible.[357]

The statistics providing evidence of segregation would focus on the location of the unit in a block or census tract, and a segregation analysis (discussed below) would ensue. Finally, showing that a practice actually caused segregation tends to be a more straightforward offering. The community is either more segregated as a result of the practice, or not. The following discussion expands on the segregative effect analysis.

While census tract data is the primary source of information that has been presented to courts to prove segregative effect cases,[358] the most frequently used method to measure segregation is the dissimilarity index, developed by Douglas S. Massey and Nancy A. Denton in their extensive 1988 study.[359] Massey and Denton examine five axes including evenness, exposure, concentration,

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Cir. 2009) (affirming dismissal where plaintiff failed to show that his denial of a subsidized housing permit furthered racial segregation). The theory requires the community at issue to be segregated. *See supra* note 31 (identifying court segregation requirement).

354.	*Quick Facts for Willimantic, Connecticut*, U.S. CENSUS BUREAU, https://www.census.gov/quickfacts/willimanticcdpconnecticut [https://perma.cc/3KJJ-V2TT] (choose "Race and Hispanic Origins" from drop-down menu).

355.	*See, e.g.*, Schwemm, *supra* note 31, at 713–14, 731 (explaining the local nature of boundary and community for segregative effect claims).

356.	*See, e.g.*, *id.* at 731, 738–39 (citing *Mhany*, 819 F.3d at 588) ("Blacks and Hispanics, who accounted for fifteen percent of Nassau County's population, but most of its low-income households and eighty-eight percent of its Section 8 waiting list, made up only between two percent and four percent of Garden City's residents."); Anderson Grp., LLC v. City of Saratoga Springs, 805 F.3d 34, 38–39 (2d Cir. 2015) ("In 2000 . . . over 40 percent of the City's total households were of low-to-moderate income, meaning that they earned less than 80 percent of the area's median income. Yet only half of those households resided in affordable housing units.").

357.	Schwemm, *supra* note 31, at 739.

358.	*Id.*

359.	*See* Douglas S. Massey & Nancy A. Denton, *The Dimensions of Residential Segregation*, 67 SOC. FORCES 281, 284 (1988).

centralization, and clustering.[360] The pair surveys twenty indices of segregation, which correlate to the five axes.[361] The dissimilarity index, which measures spatial evenness, is one of the most widely used measures of segregation.[362] The dissimilarity index measures "how evenly various racial groups are spread across neighborhoods within metropolitan areas."[363] The measurement goes from zero (complete integration)[364] to one (complete segregation).[365]

To illustrate, scholars John Logan and Brian Stults studied 2010 U.S. census data and determined a national Black-White dissimilarity index of 59, which is considered high segregation.[366] This means, at the national level, in order to achieve complete integration, more than half of Black residents in the United States would have to move.[367] A criticism of dissimilarity measurement is that it does not accurately reflect Black-White residential segregation because it only describes what proportion of any particular group would have to relocate to equate census tract or block percentages.[368] For example, Hispanics, Asians, non-White immigrants, and other communities of color can skew the index, making it appear as though there is higher integration when in fact, communities are segregated by majority and minority groups and in location-specific concentrations.[369] Also, results may vary dramatically depending on the size of the geographic area studied (e.g., zip codes are larger than census tracts, which are larger than census block level areas, and so forth).[370] In general, for diverse metropolitan areas, the smaller the geographic area studied, the larger the value (meaning more segregation) produced by the dissimilarity index, because the size of the areal unit affects segregation indices.[371]

A more accurate measure of segregation for purposes of segregative effect theory in a post-*ICP* world may be "exposure."[372] Exposure examines "the degree of potential contact, or possibility of interaction, between minority and

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360. *Id.* at 282–83; *see also Housing Patterns: Appendix B: Measures of Residential Segregation*, U.S. CENSUS BUREAU, https://www.census.gov/topics/housing/housing-patterns/guidance/appendix-b.html [https://perma.cc/EU5L-SR2N].

361. Massey & Denton, *supra* note 359, at 281.

362. *Housing Patterns: Appendix B: Measures of Residential Segregation*, *supra* note 360.

363. Brief for Housing Scholars as Amici Curiae Supporting Respondent at 4, Tex. Dep't of Hous. & Cmty. Affairs v. Inclusive Cmtys. Project, Inc., 135 S. Ct. 2507 (2014) (No. 13-1371) [hereinafter Amicus Brief for Respondent].

364. Complete integration indicates that relevant racial groups are proportionally represented throughout the metropolitan region (in other words, each racial group is spread out evenly based on percentage). *See id.*

365. Complete segregation indicates that every neighborhood has residents of only one particular racial group (there no spread of varying racial groups throughout a metropolitan area). *Id.*

366. *Id.* at 4–5.

367. *Id.* at 5.

368. *Id.* at 5–6.

369. *Id.* at 6.

370. *See* Massey & Denton, *supra* note 359, at 297–99.

371. *Id.* at 299 (explaining computational issues for segregation indices due to changes in the size of the location studied and demographic variability).

372. *See* Amicus Brief for Respondent, *supra* note 363, at 6.

majority group[s]," depends on relational elements such as common residential areas, and considers "interaction" and "isolation" indices.[373] Essentially, interaction looks at exposure between minority and majority groups, and isolation looks at the extent of intra-racial group exposure.[374] Exposure measures have more accurately shown how segregation has worsened or remained stagnant since the 1950s despite the passage of anti-discrimination laws.[375] Exposure measures of interaction and isolation calculate probabilities and use mathematical and statistical formulas, which could address issues courts may have with showing statistical evidence. Also, when considering what it means for a community to be segregated to a sufficiently large degree, social science studies that calculate segregation based on benchmark formulas can provide guidance for decision-makers as to what a sufficiently large degree of segregation would mean from a scientific standpoint. Employing benchmark formulas using dissimilarity, isolation, and exposure indices is a promising strategy for proving segregative effect cases in a post-*ICP* landscape. Digital mapping in conjunction with segregation indices can be effective as well.[376] Digital mapping is discussed more in the following Section.

III.
SEGREGATIVE EFFECT DOCTRINE AND PROPTECH

My Article examines whether algorithmic models, such as the Registry ScorePLUS Model developed by SafeRent, have the potential to disproportionately screen out Black or Brown applicants from predominantly White communities. Tenant selection criteria such as eviction records, criminal records, credit reports, employment history, education, and zip codes often correlate with race.[377] For this reason, re-imagining our current law and its potential to mitigate algorithmic redlining based on metrics that infer race is imperative. Fortunately, the FHA permits both disparate impact and segregative effect claims. As explained earlier, courts have been more accepting of housing barrier cases that challenge segregation patterns.[378] With integration as the primary focus, segregative effect analysis provides a promising strategy for fair housing advocates interested in addressing algorithmic redlining. Courts interpret the reach of the FHA broadly, and the application of segregative effect

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373. *Housing Patterns: Appendix B: Measures of Residential Segregation*, *supra* note 360 (describing measure of exposure).

374. *Id.*

375. Amicus Brief for Respondent, *supra* note 363, at 6–8.

376. Schwemm & Bradford, *supra* note 313, at 717–18.

377. *See generally* Schneider, *supra* note 57 (discussing how algorithms used by housing providers may replicate or worsen existing patterns of discrimination and segregation).

378. *See* Seicshnaydre, *supra* note 36, at 400–02; *see also* Summerchase Ltd. P'ship I v. City of Gonzales, 970 F. Supp. 522, 528–31 (M.D. La. 1997) (granting defendant's motion to dismiss for discriminatory intent and disparate impact claims but denying motion to dismiss for segregative effect claim). *Summerchase* is one example where segregative effect theory may have prevailed without a disparate impact claim.

theory should be no different. Application of the theory should go beyond state and resident actors blocking integrated housing developments in predominantly White areas and be reimagined as a proactive measure to challenge PropTech that may reinforce segregated living patterns and algorithmic discrimination.

A. Reimagining Segregative Effect Doctrine

My purpose is not to downplay or disparage disparate impact doctrine. Quite the opposite. Disparate impact doctrine is a vital remedy for addressing unintentional discrimination that results in unequal outcomes. *CoreLogic* and *Louis* demonstrate disparate impact's utility for combatting discrimination caused by tenant-screening tools that have the potential to exclude racial minorities from homes. Moreover, both theories stem from the same law.[379] A single plaintiff may present evidence supporting both disparate impact and segregative effect claims in a single case[380] and may benefit from asserting one or both strategies.[381]

My purpose is to highlight that segregative effect doctrine should expand beyond traditional exclusionary zoning cases[382] and apply to tech innovations in housing that may preserve or expand the effects of segregation. This strategy can be employed not at the expense of but in addition to disparate impact theory. One of the most prominent segregation cases, *Huntington Branch, NAACP v. Town of Huntington*, espouses that segregative effect claims are vital for "advanc[ing] the principal purpose of the [Act] to promote 'open, integrated residential housing patterns.'"[383] The FHA's purpose is to promote integration, and advocates can use segregative effect theory proactively to investigate underlying causes of segregation. Whether automated tenant screening tools actually segregate requires more study and attention.

The choice to voice concern over a one-time decision under segregative effect theory is important in the context of ML technologies. ML algorithms are highly complex to the point of being inscrutable and unintuitive.[384] Expert data

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379. *See, e.g.*, Anderson Grp., LLC v. City of Saratoga Springs, 805 F.3d 34, 49 (2d Cir. 2015); Huntington Branch, NAACP v. Town of Huntington, 844 F.2d 926, 937–38 (2d Cir. 1988), *aff'd*, 488 U.S. 15 (1988); Wallace v. Chi. Hous. Auth., 321 F. Supp. 2d 968, 973–74 (N.D. Ill. 2004); Dews v. Town of Sunnyvale, 109 F. Supp. 2d 526, 565–68 (N.D. Tex. 2000); Hispanics United of DuPage Cnty. v. Vill. of Addison, 988 F. Supp. 1130, 1154–55 (N.D. Ill. 1997); *Summerchase*, 970 F. Supp. at 528–31; Oxford House-Evergreen v. City of Plainfield, 769 F. Supp. 1329, 1344 (D.N.J. 1991); Keith v. Volpe, 618 F. Supp. 1132, 1150–51 (C.D. Cal. 1985); Atkins v. Robinson, 545 F. Supp. 852, 866–70 (E.D. Va. 1982), *aff'd*, 733 F.2d 318 (4th Cir. 1984).

380. *See* SCHWEMM, *supra* note 80, § 10:7 n.1 (collecting cases).

381. *See supra* note 347.

382. *See, e.g.*, Metro. Hous. Dev. Corp. v. Vill. of Arlington Heights, 558 F.2d 1283 (7th Cir. 1977); *Huntington*, 844 F.2d 926.

383. *Huntington*, 844 F.2d at 937 (quoting Otero v. N.Y.C. Hous. Auth., 484 F.2d 1122, 1134 (2d Cir. 1973)).

384. *See* Selbst & Barocas, *supra* note 113, at 1090–92 (explaining algorithmic models available for inspection may defy understanding of even experts and the models' non-intuitiveness suggests that statistical relationships can defy human intuition).

scientists cannot necessarily identify which data input resulted in a certain decision. For this reason, anti-discrimination litigation should take advantage of segregative effect theory and use it to its full potential because the focus is on segregation outcomes. Attempting to regulate ML algorithms, as the White House recently announced in releasing its Blueprint for Renters' Rights, is a noble effort. However, given the nature of ML algorithms, regulatory efforts to create more transparency or decipher "explainability" may not resolve issues of algorithmic accountability as prescribed by proposed regulations.[385] Furthermore, the one-time decision paradigm of segregative effect theory is crucial because the proprietary choice to use PropTech at all may be enough to successfully apply the rule. If a housing provider decides to use a tenant screening service, or if a data scientist decides to design a marketing tool to target certain racial groups, these one-time decisions may impose liability. Also, the flexibility to challenge a decision is important because of the speed of innovation.

Looking at step two again, a plaintiff must show through statistical evidence that a practice exacerbates segregation in a relevant community to a sufficiently large degree. As mentioned, courts rule more favorably in cases showing evidence of segregation than cases that do not address segregation. In *Metropolitan Housing Development Corp v. Village of Arlington Heights*, the Seventh Circuit ruled that the "overwhelming" evidence of racial segregation based on census data alone was sufficient.[386] Similarly, the Second Circuit in *Huntington* and *Black Jack* was satisfied with census data, as was the lower court in *Dews v. Town of Sunnyvale*.[387] While these cases were decided before *ICP*, Justice Kennedy highlighted that Congress "accepted and ratified the unanimous holdings" of the appeals courts, suggesting future findings may be weighed similarly.[388]

In a recent case, *NFHA v. Evolve, LLC*, the voucher-holding plaintiffs claimed that the landlord defendant had a blanket no-voucher policy that

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385. *See* DOMESTIC POL'Y COUNCIL & NAT'L ECON. COUNCIL, THE WHITE HOUSE BLUEPRINT FOR A RENTERS BILL OF RIGHTS 4 (2023), https://www.whitehouse.gov/wp-content/uploads/2023/01/White-House-Blueprint-for-a-Renters-Bill-of-Rights-1.pdf [https://perma.cc/6B3N-2AMU]; Selbst & Barocas, *supra* note 113, at 1138 (concluding that regulation of ML algorithms fails to recognize the role of intuition and may not address desired normative outcomes of limiting bias and discrimination).

386. Schwemm, *supra* note 31, at 739.

387. *Id.* at 723–26 (discussing Dews v. Town of Sunnyvale, 109 F. Supp. 2d 526, 567–68 (N.D. Tex. 2000)).

388. *Id.* at 722; Tex. Dep't of Hous. & Cmty. Affs. v. Inclusive Cmtys. Project, 567 U.S. 524, 536 (2015).

perpetuated racial segregation.[389] While the case settled out of court,[390] its use of census data to show patterns of segregation related to the decision or policy to exclude voucher-holders illustrates how census data can prove a segregative effect claim. The property at issue was in a majority-White neighborhood adjacent to several majority-Black neighborhoods.[391] Ninety-nine percent of voucher-holders were Black from the majority-Black tracts, and the voucher policy denied many Black residents the opportunity to move to less-segregated, higher-opportunity areas.[392] The complaint included the following chart to diagram the census charts:[393]

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389.   *See* Complaint at 1–2, Nat'l Fair Hous. Alliance v. Evolve, LLC, No. 1:19-cv-1147 (TNM) (D.D.C. Apr. 22, 2019) (explaining that the landlord refused to accept Section 8 housing vouchers as a blanket policy and publicly advertised the rejection of Section 8 vouchers).

390.   *See generally* Consent Agreement & Injunction, Nat'l Fair Hous. Alliance v. Evolve, LLC, No. 1:19-cv-1147 (TNM) (D.D.C. May 19, 2020), https://nationalfairhousing.org/wp-content/uploads/2020/06/NFHA-v.-Evolve-Consent-Agreement.pdf [https://perma.cc/E4RY-SL3H].

391.   *See* Complaint, *supra* note 389, at 7 (detailing statistics of voucher-holders).

392.   *Id.* at 28.

393.   *Id.* (citing *Data Explorer—Greater DC*, URB. INST. (Aug. 16, 2017), https://greaterdc.urban.org/data-explorer [https://perma.cc/948F-4FKB]). For illustration, Census Tract No. 68.01 (closest to Defendants' census tract) was 31 percent White, 62 percent Black, and 3.8 percent Hispanic. Census Tract 68.04 was just 2.5 percent White, 87 percent Black, and 8.6 percent Hispanic. Census Tract 79.01 was 9.2 percent White, 87 percent Black, and 3 percent Hispanic. *Id.*

District of Columbia's Black Population
2016 5-Year ACS Estimates by Census Tract
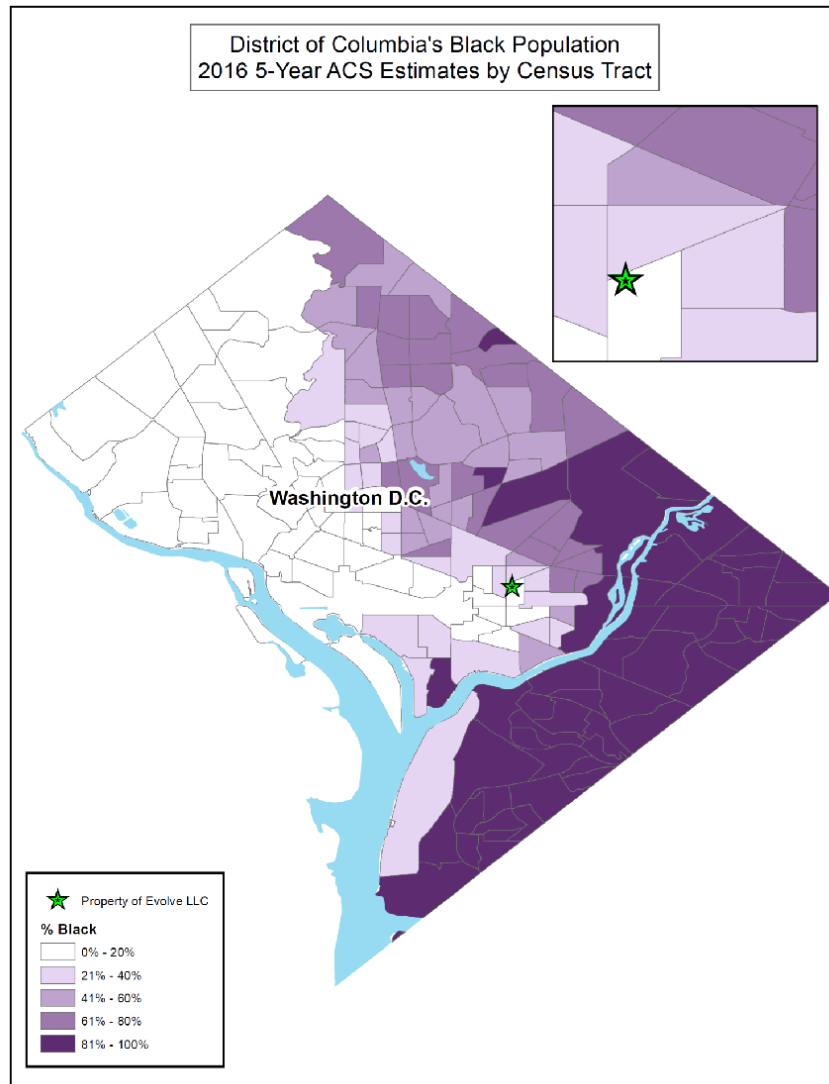
While progress has been made since the FHA passed, our nation remains highly segregated.[394] As such, it is not surprising that census data yield results showing stark racial division along neighborhood lines. Segregation maps are

394.   Paul A. Jargowsky, *The Persistence of Segregation in the 21st Century*, 36 L. & INEQ. 207, 215–16 (2018) (concluding that segregation is still a prominent feature of the U.S. metropolitan landscape); *see also* Paul A. Jargowsky, Lei Ding & Natasha Fletcher, *The Fair Housing Act at 50: Successes, Failures, and Future Directions*, 29 HOUS. POL'Y DEBATE 694, 698 (2019) (suggesting the persistence of both racial and economic segregation points to the failure to fully implement the FHA). For key report findings, see Stephen Menendian, Samir Gambhir & Arthur Gailes, *The Roots of Structural Racism Project: Twenty-First Century Racial Residential Segregation in the United States*, OTHERING & BELONGING INST. (Jun. 21, 2021), https://belonging.berkeley.edu/roots-structural-racism [https://perma.cc/K73M-XHQV].

available through government databases, such as HUD's Affirmatively Furthering Fair Housing Data Mapping tool.[395] The Data Mapping tool was introduced and re-introduced under the Obama and Biden administrations, respectively.[396] Comparable mapping tools are also available through nonprofit organizations such as the Urban Institute.[397] Census information and mapping tools are helpful datapoints and visuals that have proven effective for representing segregation. However, in light of *ICP*, courts may require a more sophisticated statistical analysis than derivative figures from census data to prove segregation in PropTech cases. Perhaps a census block analysis could demonstrate a segregative pattern of a landlord using a tenant screen service because it would capture the exclusion more closely. Courts have interpreted FHA violations to include discriminatory housing practices that affect "the whole community" as well as particular segments of the community.[398]

In 1972, the Supreme Court in *Trafficante v. Metropolitan Life Insurance Co.* offered guidance for defining the parameters of a "community."[399] In *Trafficante*, two tenants of an apartment complex in San Francisco, one Black and one White, filed complaints with HUD alleging that the owner of the complex had discriminated against non-White rental applicants in violation of the FHA.[400] Petitioners alleged that they lost the benefits of an integrated community and the advantages that come with integration. Respondents argued that White tenants have no standing to sue and do not fit within the definition of aggrieved people. The Court reasoned that an "aggrieved person" extends to the broadest class of plaintiffs permitted by Article III of the Constitution.[401] As stated earlier, the Court observed that "whole communities" may suffer from the ills of housing discrimination and segregation, and the purpose of the Act is to

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395.   *See Affirmatively Furthering Fair Housing*, U.S. DEP'T OF HOUS. &. URB. DEV., https://egis.hud.gov/affht/ [https://perma.cc/QN5D-M3HA].

396.   The tool was removed and inoperable during the Trump administration. *See* Tracy Jan, *HUD Secretary Ben Carson Doubles Down on Dismantling Obama-Era Fair-Housing Policies*, WASH. POST (May 19, 2018), https://www.washingtonpost.com/news/wonk/wp/2018/05/19/hud-secretary-ben-carson-doubles-down-on-dismantling-obama-era-fair-housing-policies/ [https://perma.cc/MPK9-7L8F].

397.   *See, e.g.*, *Mapping America's Futures*, URB. INST. (Dec. 1, 2017), https://apps.urban.org/features/mapping-americas-futures/ [https://perma.cc/UXU5-NRS8].

398.   Trafficante v. Metro. Life Ins. Co., 409 U.S. 205, 211 (1972) (citing 114 Cong. Rec. 2706 (1968) (statement of Sen. Javits)).

399.   Schwemm, *supra* note 31, at 745–47.

400.   *Trafficante*, 409 U.S. at 208. The alleged conduct consisted of making it known to non-Whites that they would not be welcomed at the complex, manipulating apartment waiting lists, delaying action on rental applications, and using discriminatory acceptance standards, among other things. *Id.*

401.   42 U.S.C. § 3610. The definition of "aggrieved person" in § 3610(a) is "any person who claims to have been injured by a discriminatory housing practice." *Id.* § 3602. The legislative history of § 3610 indicates that its proponents argued that those who are not direct objects of discrimination also suffer and have an interest in ensuring fair housing. Additionally, the Assistant Regional Administrator for HUD confirmed that the petitioners are within the jurisdiction of the Act, and this deserves deference. The design of the Act also confirms this construction. The main source of enforcement of the Act is through private suits.

ensure that we progress towards a more integrated society.[402] While this case stands for the important proposition that communities can be broadly defined, in 1982, the Supreme Court ruled in *Havens Realty Corp. v. Coleman* that a metropolitan area is too large to make a community harm argument for purposes of standing.[403] As such, when pursuing a segregative effect claim, one must carefully consider the scope of the community at issue. *Trafficante* and *Havens* imply that the scope of a community can encompass one's building, block, or town but not necessarily entire cities, which leaves room for a fair number of interpretations. If segregation can be measured within identifiable boundaries, I suggest the claim remains viable. As such, studies may produce evidence showing PropTech tools perpetuate or reinforce segregated communities within a scale defined by zip code or housing enterprise. Though courts have allowed relatively straightforward statistical offerings to prove the existence of segregation in a certain location in the past, in a post-*ICP* world, cases of algorithmic bias may require more sophisticated showings of segregation.

The challenge for satisfying the evidentiary standard for disparate impact was illustrated when *ICP* was remanded to the District Court for the Northern District of Texas. The district court ultimately dismissed the case for failure to prove a robust causal connection and statistical disparities.[404] Further, the novelty of applying segregative effect theory to cases of algorithmic bias may require more persuasion of judges, and therefore, establishing that PropTech perpetuates segregation in a particular place may require more developed data points and statistical models.

In addition to identifiable parameters of community, Schwemm highlights the importance of focusing on the question of "how much"[405] segregation is enough to meet the sufficiently large-degree standard and points out that the law indicates a challenged practice must significantly perpetuate segregation.[406]

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402. *Trafficante*, 409 U.S. at 210–11.

403. 455 U.S. 363, 377–78 (holding that the entire Richmond metropolitan area is too large an area to claim a palpable injury).

404. Inclusive Cmtys. Project, Inc. v. Tex. Dep't of Hous. & Cmty. Affs., No. 3:08-CV-0546-D, 2016 WL 4494322, at *30–32 (N.D. Tex. Aug. 26, 2016); *see also* Amy M. Glassman & Shanellah Verna, *Disparate Impact One Year After* Inclusive Communities, 25 J. AFFORDABLE HOUS. 11, 16 (2016) (summarizing *ICP* outcome on remand); Schwemm, *supra* note 31, at 712–13. Under the 2013 HUD regulation, step one of analyzing discriminatory effect cases requires "showing through statistical evidence that [a] practice exacerbates segregation in the relevant community to a *sufficiently large degree*." *Id.* (emphasis added).

405. *See* Schwemm, *supra* note 31, at 742–43. "Another key issue is *how much* discriminatory effect must be shown to establish a prima facie case . . . . [T]here is general agreement that a 'substantial' disparity must be shown, and courts have come up with some relatively straightforward measures of how much disparity is sufficient" in Title VII cases. "There is no such guidance[, however,] in segregative-effect cases." *Id.* at 742.

406. *Id.* at 742–43; *see id.* at 742 n.177 (citing several cases that suggest that the challenged practice(s) must significantly perpetuate segregation).

However, as stated before, there have been successful claims where the actual effect of segregation on the community was relatively small.[407]

As mentioned in the previous Section, while the dissimilarity index is a more sophisticated measure than census data comparisons, exposure measures may more accurately reflect the experience of segregation by Black and Brown people excluded from-majority White populations because of tenant screen denials. For example, if a tenant of color with a voucher applies to live in a unit in a majority-White community and gets denied, it is necessary to identify where the denied tenant ends up residing. If the tenant was denied from that specific building, they may have found another unit in the same White neighborhood. If this were the case, it would be difficult to prove that the tenant screening tool caused or perpetuated segregation. However, tracking relational patterns of isolation, recording where Black and Brown people end up living relative to one another, and comparing that assessment to exposure interactions with the White majority in that area is more representative of racial composition and concentration. Exposure measures of segregation may do a better job of capturing the location and level of segregation where denied tenants end up living. And this can be determined by using a reliable formula.

B. *Challenges in a New Frontier*

The novelty of segregative effect as an approach against the private sector does present some challenges, some of which I already referenced. The law has been primarily used in zoning cases where multifamily or affordable housing units for low-income minority residents are proposed in a majority-White community, and the municipality effectively denies the proposal via exclusionary zoning methods.[408] The challenge is that segregative effect claims against a private defendant are rare and have yet to succeed.[409] However, this challenge seems circumstantial and does not appear to be a matter of law. For example, HUD's view on private defendants is favorable: "[l]iability for a practice that has an unjustified discriminatory effect may attach to either public or private parties."[410] This issue of technology and segregation is new and requires new logical inferences. Any person with access to the internet has a digital footprint that reveals preferences for[411] social environments, products and

407. *Id.* at 742.

408. *Id.* at 715–16 (discussing United States v. City of Black Jack, 508 F.2d 1179 (8th Cir. 1974); Metro. Hous. Dev. Corp. v. Vill. of Arlington Heights, 558 F.2d 1283 (7th Cir. 1977); Huntington Branch, NAACP v. Town of Huntington, 844 F.2d 926 (2d Cir. 1988), which, according to Schwemm, "produced three major appellate decisions that endorsed the segregative-effect theory of liability under the FHA").

409. Schwemm, *supra* note 31, at 749.

410. *See* Implementation of the Fair Housing Act's Discriminatory Effects Standard, 78 Fed. Reg. 11460, 11474 (Feb. 15, 2013) (confirming that liability can attach to both public or private parties).

411. Brian X. Chen & Daisuke Wakabayashi, *You're Still Being Tracked on the Internet, Just in a Different Way*, N.Y. TIMES (Apr. 6, 2022), https://www.nytimes.com/2022/04/06/technology/online-tracking-privacy.html [https://perma.cc/4AHX-7GGX].

services, housing choices, and the list goes on. Algorithms are everywhere. They pervade everything we do in the digital world and affect our lives in the analog world.

To assess the elusive nature of algorithmic redlining within a segregative effect framework, we must determine the scope of the community at issue. Can scholars and lawyers logically define the parameters of a community within the digital space? In my view, discrimination law requires a more tangible form and areal landscape. However, the dividing line between digital space and the physical world is getting increasingly indistinct as people begin to spend more of their lives in virtual spaces.[412] These trends are why segregative effect doctrine may be the new frontier of discriminatory effect cases. Once a community is defined, the segregative effects of technology on a community are enough to invoke the rule.

CONCLUSION

PropTech is here to stay. Landlords large and small are increasingly relying on its use to help them manage their real estate portfolios. PropTech can benefit both landlords and rental applicants because digital platforms allow for immediate access to information and services. However, PropTech can also create barriers to the market for minorities based on the real estate industry's discriminatory past. Congress enacted the FHA to replace segregated neighborhoods with "truly integrated and balanced living patterns."[413] Our country was founded as a segregated society, and while there have been improvements in integrated living, the geographic landscape is becoming increasingly more segregated. Evictions against minorities continue to be filed at twice the rate of their White peers, the racial wealth gap continues to widen, and urban communities continue to be overpoliced. Technologies that capture these societal structures, if left unchecked, will propagate these societal conditions and segregation patterns. Drawing attention to how PropTech uses biased algorithms and how automated tenant screens can contribute to segregation was one objective of this Article. Another purpose was to examine a legal framework with the potential to offset exclusionary outcomes of automated tenant screens. Finally, the Article sets the stage for further qualitative and quantitative analysis of the segregative effects of PropTech on communities of color—questions worthy of exploration in future scholarship.

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412.   Mary Anne Franks, *The Desert of the Unreal: Inequality in Virtual and Augmented Reality*, 51 U.C. DAVIS L. REV. 499, 504–07 (2017).

413.   Trafficante v. Metro. Life Ins. Co., 409 U.S. 205, 211 (1972) (citing 114 Cong. Rec. 3422 (Feb. 20, 1968) (statement of Sen. Mondale)).