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DIGITAL DIFFUSION OF WORKFLOW KNOWLEDGE IN SERVICE MICROENTERPRISES: PRODUCTIVITY GAINS AND BOOKING INFRASTRUCTURE

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Abstract. *Purpose.* The article examines the digital diffusion of procedural know-how among self-employed nail service operators and investigates how productivity gains resulting from digitally transmitted skills are allocated between additional revenue-generating bookings and reduced working time. Particular attention is paid to the role of online booking infrastructure in shaping these allocation decisions. *Methodology.* The study adopts a conceptual and reconstructive approach, drawing on practice records from 2019 to 2025, enrollment records and written feedback from a recorded training program completed by more than 170 practitioners across several countries, and statements from two licensed practitioners. The analysis examines how procedural knowledge, codified into stage sequences, time targets, and decision rules, can be reproduced and distributed digitally at negligible marginal cost. It also considers how practitioners allocate the working capacity released through improved procedural efficiency. *Results.* The findings indicate that digitally distributed procedural know-how functions as an information good that can be reproduced for additional learners at negligible cost and delivered internationally without travel. Users reported reductions in procedure duration of approximately 25–33%. The resulting capacity was allocated either to additional bookings and increased revenue (yield) or to shorter working days while maintaining stable revenue (reclaim), with hybrid arrangements also common. The analysis identifies a booking-default asymmetry: online scheduling systems make released capacity available for sale by default while recording only booked time, leaving time-based productivity benefits largely invisible in digital business records. *Practical implications.* The findings highlight the importance of considering both revenue growth and recovered working time when assessing the economic effects of digitalization in service microenterprises. They offer implications for measuring small-business productivity, developing recorded professional training as an exportable service, and designing booking software that makes alternative uses of released capacity more visible and manageable. *Value / originality.* The article contributes to research on digitalization and productivity by identifying the diffusion of procedural know-how as a mechanism of efficiency improvement distinct from automation. Its principal conceptual contribution is the introduction of booking-default asymmetry, which explains how digital scheduling infrastructure can influence the allocation and measurement of productivity gains. The study further distinguishes between yield and reclaim as alternative economic outcomes of efficiency improvements in self-employed personal services.

Keywords: digital economics; information goods; digitally delivered services; service microenterprises; online booking systems; productivity; self-employment.

JEL Classification: O33, D83, L86, L25, M11

1. Introduction

Digital transformation of the economy is usually traced through platforms, data flows, and automation in large firms. A quieter strand of the same process concerns microenterprises in personal services, where owner-operators acquire procedural skills through video courses, coordinate clients through online booking tools, and market their work through social media. An integrated OECD policy framework on digital transformation

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identifies uneven uptake of digital technologies among small firms, together with the skills needed to use them, as a persistent policy concern (Organisation for Economic Co-operation and Development, 2019). Personal care services match this description closely. In the United States, about three quarters of manicurists and pedicurists work in personal care establishments and about a quarter are self-employed, with self-employed workers often setting their own schedules (U.S. Bureau of Labor Statistics, 2024).

Personal services hold a particular position in debates on technology and work. Autor argues that tasks requiring dexterity, situational adaptability, and in-person interaction have proved resistant to automation, and that technological change tends to complement such work more often than it replaces it (Autor, 2015). A manicure cannot be delivered remotely or performed by software. Digital technology reaches the occupation through surrounding activities: how skills are learned, how clients are found and scheduled, and how payments and records are kept. Effects of the digital economy on such workers are therefore indirect, and they are easy to overlook in indicators built around online sales or platform employment.

Goldfarb and Tucker organize digital economics around five cost reductions brought by digital technology: lower costs of search, replication, transportation, tracking, and verification (Goldfarb & Tucker, 2019). Each can be traced in a personal-service microenterprise. Recorded instruction can be replicated for an additional learner at almost no cost and transported across borders instantly. Online booking lowers the cost for clients of finding an open appointment and the cost for practitioners of tracking appointments and payments. These reductions leave the manual service unchanged and alter the economics of the knowledge and coordination that surround it.

Training is the first of these channels. Craft knowledge in nail technology has historically travelled through demonstration, supervised practice, and peer observation, with standard curricula organized around stage-by-stage execution and leaving time management to individual experimentation after licensure (Hill, 2019). When recorded courses carry knowledge aimed at procedure duration, its diffusion produces a measurable economic quantity: minutes released from each client session. A self-employed practitioner can sell those minutes through additional appointments or keep them by finishing work earlier. Time-allocation theory treats this as a choice between market and non-market uses of time (Becker, 1965), and studies of digital work suggest that scheduling infrastructure shapes how freely such choices are made (Wood et al., 2019; Mazmanian, Orlikowski & Yates, 2013).

Research on the digital economy has examined platform-mediated gig work in detail, with less attention to microenterprises that adopt digital tools on their own terms, and research on online learning seldom follows how digitally acquired skills are converted into economic returns. The aim of this article is to examine how a workflow methodology spread digitally among independent nail technicians and how the resulting productivity gains were converted into revenue or working time, with attention to the role of online booking infrastructure. Three objectives follow: to describe the diffusion of the methodology as a digital information good together with the time gains its users reported; to characterize the pathways along which released capacity was used; and to propose a conceptual account of how booking infrastructure biases that use.

2. Literature Review

Digital economics starts from the observation that information goods are costly to produce and cheap to reproduce. Shapiro and Varian built a strategic account of information markets on this cost structure, in which a high fixed cost of the first copy coexists with near-zero marginal cost of further copies, so that pricing follows value to the user more closely than production cost (Shapiro & Varian, 1999). Goldfarb and Tucker generalized the argument into reductions in five categories of cost (Goldfarb & Tucker, 2019). Replication and transportation costs govern how far a recorded course can travel; search and tracking costs govern how clients and appointments are matched and recorded. Most empirical work in this tradition examines online markets, platforms, and advertising, with fewer applications to firms whose core product is a physical, in-person service.

International statistics have begun to capture know-how that crosses borders digitally. The second edition of the Handbook on Measuring Digital Trade defines digitally delivered trade as international transactions delivered remotely over computer networks, a category that can include remotely delivered education and training (World

Trade Organization, 2023). Measurement of such flows relies largely on enterprise surveys and balance-of-payments reporting, which register established providers well and individual micro-exporters poorly. A sole practitioner who sells recorded training to colleagues abroad conducts a transaction of this kind, yet she is unlikely to appear in official statistics as a digital service exporter.

Diffusion of digital tools among the smallest firms is uneven. An OECD review of small and medium-sized enterprises reports that they trail larger firms in adopting digital technologies, that the gap widens as technologies become more sophisticated, and that skills and management capacity rank among the main barriers to closing it (Organisation for Economic Co-operation and Development, 2021). Basic tools such as online booking, digital payments, and social-media marketing are the forms of digitalization most accessible to sole operators, and they shape day-to-day scheduling more directly than any advanced technology. Training delivered online addresses the skills barrier through the same channels, which places self-employed personal-service workers at the point where digital adoption and digital learning meet.

Self-employment occupies an ambiguous place in research on job quality. Kalleberg's account of polarized employment in the United States links the growth of nonstandard arrangements to income volatility and to a transfer of economic risk from firms to workers (Kalleberg, 2011). Platform research has carried this account into the digital economy. Kenney and Zysman describe digital platforms as an emerging infrastructure that reorganizes how work is matched, priced, and coordinated across many sectors (Kenney & Zysman, 2016). Studying remote workers on online labor platforms, Wood and colleagues found that algorithmic management can grant flexibility and task variety and, at the same time, produce overwork, irregular hours, and sleep deprivation (Wood et al., 2019). Self-employed beauty professionals sit at the edge of this literature. Few depend on a single labor platform, yet many rely on third-party booking software, payment systems, and social media to reach and schedule clients.

Digital tools also alter the experience of working time. Wajcman argues that digital technologies are designed and used within social arrangements that intensify perceived time pressure, and that their temporal effects depend on how people organize them (Wajcman, 2015). Mazmanian, Orlikowski, and Yates documented an "autonomy paradox" among professionals using mobile email: individual choices made to gain flexibility collectively escalated expectations of availability, narrowing the autonomy the devices were meant to provide (Mazmanian, Orlikowski & Yates, 2013). Behavioral economics supplies a mechanism relevant to scheduling software. Johnson and Goldstein showed that default options strongly shape outcomes even when switching costs are minimal, with organ donation consent rates differing sharply between opt-in and opt-out regimes (Johnson & Goldstein, 2003). Defaults embedded in booking tools have not been examined from this angle.

Economic research on working time indicates that control over hours has value beyond wages. Becker's theory of the allocation of time assigns each hour of paid work an opportunity cost equal to the value of the non-market activity it displaces (Becker, 1965). Experimental and administrative evidence quantifies this value. Job applicants studied by Mas and Pallais were willing to give up a substantial share of wages to avoid schedules set at an employer's discretion (Mas & Pallais, 2017), and ride-hailing drivers studied by Chen and colleagues derived more than twice as much surplus from hour-by-hour flexibility as they would under less flexible arrangements (Chen et al., 2019). Goldin linked much of the remaining gender gap in earnings to occupations that reward long and inflexible hours (Goldin, 2014), and time-use data show women still performing the larger share of housework (Bianchi et al., 2012), which raises the value of released hours in occupations where women predominate.

A further body of work concerns whether manual skills can travel through digital media. Polanyi's observation that people know more than they can tell defines tacit knowledge as the portion of skill that resists explicit statement (Polanyi, 1966). Craft procedures contain much of it, which is why demonstration and supervised practice remain central to nail technology curricula (Hill, 2019). Meta-analytic evidence on distance education nonetheless indicates that mediated instruction can match classroom instruction on average: synthesizing over two hundred comparative studies, Bernard and colleagues reported mean achievement differences close to zero, with wide variation across studies (Bernard

et al., 2004). Codification of procedure into explicit steps, timings, and decision rules is one condition under which craft content becomes transmissible at a distance.

Three gaps follow from this review. Digital economics has examined replication and transportation costs mainly in markets for digital products, seldom for know-how that improves an in-person service. Measurement of digitally delivered services captures established providers and misses individual exporters of training. Research on digital scheduling tools has not examined how their defaults shape the use of productivity gains in fee-for-service self-employment. Nail services offer a setting in which all three meet.

3. Materials and Methods

The analysis is reconstructive and conceptual in nature and does not aim to establish causal relationships. Patterns reported below were assembled retrospectively from records and correspondence generated during ordinary professional and instructional activity. No controlled comparison was performed, no validated time-use or psychometric instruments were administered, and no statistical inference was attempted. Relationships between digital training, time gains, and allocation outcomes are presented as analytical propositions consistent with the observed material and with the literature reviewed; their generalization to other populations requires independent empirical verification.

Material covers January 2019 to August 2025 and originates in the author's independent nail practice, most recently conducted as a licensed nail specialist in Florida, United States. Practice ran under single-operator conditions, with scheduling, pricing, and client communication handled by the practitioner. A typical working week comprised five to six service days with three to seven clients per day, depending on season and procedural complexity. Over the same period the author developed a workflow methodology aimed at shortening procedures without omitting technical stages and offered it as a paid training program. Program content was distributed digitally as recorded video lessons, checklists, stepwise procedural algorithms, and practical assignments, which allowed enrollment from several countries.

Four categories of material were used. Practice records comprised appointment entries showing approximate session start and end times, daily client counts, and weekly schedule patterns; they were kept for business administration and reviewed in aggregate for this article. Program records provided approximate cumulative enrollment counts and participants' countries of practice. Trainee correspondence consisted of free-text written feedback describing changes in procedure duration, daily client load, income, and working hours after program completion; identifying details were removed before analysis. Written statements from two licensed nail technicians, with approximately three and thirteen years of experience, described their use of the methodology in salon practice (Murmylo, 2025; Yankivska, 2025).

Analysis proceeded in three steps. Diffusion was described from program records and from the structure of the course materials. Reported time gains and their range were then extracted from correspondence and statements. Each account was finally coded by the allocation it described: additional bookings within unchanged hours, shortened working hours at unchanged client load, or a combination of the two, with any reported life circumstances recorded alongside. Interpretation drew on digital-economics, platform, and working-time literatures. Quantities given in Section 4 are self-reported approximations and are presented as such.

An account was coded as describing an allocation only when it reported both a change in procedure duration and a change in client load, working hours, or income. Accounts describing time gains without any statement about their use were counted toward the range of reported gains and excluded from allocation coding. Life-stage information was recorded only where participants volunteered it, and no attempt was made to infer it. Counts of accounts in each group are not reported, since the correspondence was neither complete nor collected systematically, and frequencies drawn from it would suggest a precision the material cannot support.

Client identifiers were not retained in any material used. Trainee correspondence was anonymized before analysis, and no individual trainee is identifiable from the details reported. The two licensed correspondents are cited by name because they authored signed written statements for external use. The analysis involved no intervention beyond ordinary service delivery and instruction.

4. Digital Diffusion of the Methodology

Program records indicate cumulative completion by approximately 50 practitioners by December 2023, more than 100 by July 2024, and more than 170 by August 2025. Participants practiced in the United States, Ukraine, and other countries; about 20 were based in the United States by mid-2024 and about 60 by August 2025. Cumulative enrollment thus roughly doubled within about seven months and grew by a further two thirds over the following thirteen months. The share of participants based in the United States rose from about one fifth of the total in mid-2024 to about one third by August 2025, indicating that growth came increasingly from a market other than the one in which most early participants practiced. Experience levels ranged from recently licensed to more than a decade of practice. No travel was required of the instructor or the participants, and all instructional content reached participants as recorded video, written checklists, and stepwise algorithms, with questions and feedback exchanged in writing. Figure 1 presents the enrollment trajectory.

Course materials were produced once and reused for every enrollee. Adding a participant required access to the existing recordings and documents, and the instructor's time per participant was limited to answering written questions and reviewing assignments. Codification preceded distribution: procedure content was decomposed into stages with assigned time ranges and explicit rules for moving from one stage to the next, a format that allowed self-paced study and repeated viewing. Table 1 lists the codified components and the digital form in which each was delivered.

Each component replaces a decision formerly left to experience with a criterion that can be stated in text or shown on video. Stages most dependent on tactile and visual judgment were taught through demonstrations in which hand position and instrument path are visible, so that the remaining tacit element could be observed and imitated asynchronously. The time-control template tied every component to a quantity participants could measure themselves.

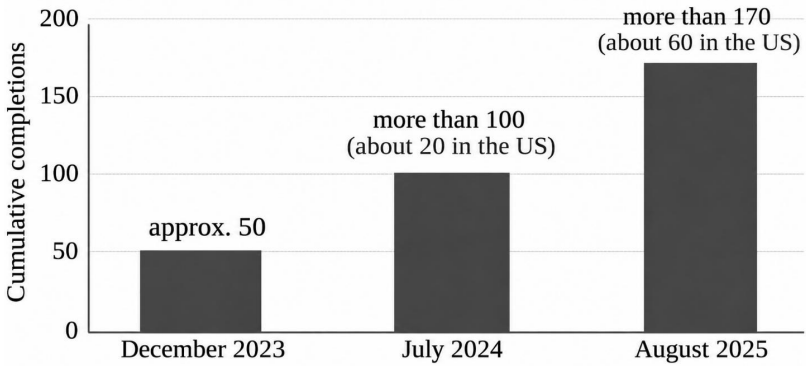


Figure 1. Cumulative completions of the digitally delivered training program

Source: compiled by the author from program records. Values are approximate; the United States share was not recorded for December 2023

Table 1
Codified components of the digitally delivered training program

Component	Digital format	Explicit element replacing individual judgment	Learner self-check
Pre-service assessment routine	Video lesson, written checklist	Fixed list of indicators assessed before work begins	Checklist completed before each session
Removal algorithm	Video demonstration, stepwise algorithm	Fixed order of work zones, instrument settings, and stopping criteria	Time spent on the stage
Application guidelines	Video lesson, written rules	Rules that limit later corrective work	Amount of correction needed afterwards
Stage-level time control	Timing template	Target time range for each stage	Own stage times compared with targets
Practical assignments	Assignment brief, written feedback	Defined tasks with expected outcomes	Written feedback on submitted work

Source: compiled by the author from program materials

5. Reported Time Gains

Reported reductions in full-service duration fell. A practitioner with about three years of experience reported reducing her average full-service duration by approximately 25 to 30 percent (Murmylo, 2025); a practitioner with about thirteen years of experience described reductions of approximately 25 to 35 percent under the methodology (Yankivska, 2025). Both set these figures against a conventional benchmark of roughly 90 to 120 minutes for a full procedure. One trainee reported shortening a procedure from about two hours to about seventy minutes. In the author's practice, a standard maintenance procedure that required approximately ninety minutes early in the period settled at noticeably shorter durations later, with coating retention reported by returning clients remaining stable.

Sources of the saving were described consistently. Both licensed correspondents located conventional time losses in prolonged removal of prior coating, repeated corrective work, and the absence of time limits for individual stages, and attributed their reductions to adherence to the defined procedure without rushed execution (Murmylo, 2025; Yankivska, 2025). Trainee correspondence placed the first noticeable reductions within the first weeks of application, with durations stabilizing over the following months. No decline in the quality of finished work was reported by correspondents or trainees, an assessment made by the practitioners themselves. Gains of similar magnitude were reported by the correspondent with three years of experience and by the one with thirteen, and trainee accounts did not suggest that reductions were confined to beginners.

6. Allocation of Released Capacity

Accounts of how freed time was used fell into three groups, summarized in Table 2. In yield allocations, released minutes were filled with additional bookings within unchanged working hours. The trainee who reduced procedure length to about seventy minutes reported accepting three additional clients per day and a monthly income increase of roughly 1,500 US dollars; trainees in earlier career stages or with explicit income goals described the same pattern. In reclaim allocations, client load stayed roughly constant and the working day ended earlier. Trainees who mentioned young children or active care duties more often described this pattern, reporting earlier finishing times at roughly stable income. Some of them described initial difficulty justifying the arrangement to themselves or to family members until its cumulative effect became apparent over weeks and months.

Hybrid allocations combined both pathways, for example accepting one or two additional bookings on some days and removing a working day from the weekly schedule, or alternating between yield in peak seasons and reclaim in slower months. Allocation in the author's own practice changed over time. During early efficiency improvement, saved minutes were absorbed into tighter schedules and additional bookings. After marriage and household formation, saved time increasingly left the working day through earlier session-end times, and daily booking counts stabilized or declined modestly.

Figure 2 shows schematically how the same procedural gain redistributes a working day under each pathway, with opening time held constant. In the baseline row, longer sessions fill the working day

Table 2
Characteristics of observed allocation pathways for released capacity

Pathway	Use of released minutes	Daily revenue	Working hours	Trace in digital business records	Circumstances most often reported
Yield	Additional bookings within unchanged hours	Increases	Unchanged	Recorded as added appointments and payments	Early career stage, income targets, high fixed costs
Reclaim	Earlier end of the working day	Roughly stable	Shorter	No entry; visible only as absence of bookings	Care responsibilities, household formation, later career stage
Hybrid	Partly new bookings, partly released time	Moderate increase	Redistributed across week or season	Partly recorded	Seasonal demand, changing household needs

Source: compiled by the author from practice records, program records, and trainee correspondence, 2019–2025. Classification is qualitative

up to its closing time. Under yield, shorter sessions with short intervals accommodate an additional client within the same hours. Under reclaim, the same number of clients is served in shorter sessions and the remainder of the afternoon is released. The hybrid row combines a smaller number of added bookings with a shorter release at the end of the day.

7. Discussion

The diffusion pattern matches the cost structure of an information good (Shapiro & Varian, 1999). Developing the methodology and recording the course represented a fixed cost borne once; enrollment then grew from about 50 to more than 170 participants with no corresponding growth in production, each additional participant being served from the same materials. In the terms used by Goldfarb and Tucker, near-zero replication cost allowed the course to scale and near-zero transportation cost allowed it to move from one national market into others (Goldfarb & Tucker, 2019). Know-how previously confined to one practitioner's workplace, and spread only through in-person apprenticeship, became a product with an international market.

Codification made this possible. Content dominated by tacit judgment travels poorly through recorded media (Polanyi, 1966); content restated as stage sequences, time ranges, and decision rules can be studied, rehearsed, and checked against explicit targets by a learner working alone. Distance-education research suggests that mediated instruction can reach levels comparable to face-to-face teaching (Bernard et al., 2004), and time-oriented procedural knowledge may be particularly suited to it because its outcome is self-measurable: a practitioner can verify progress with a clock. Whether the same holds for craft knowledge centered on aesthetic judgment remains open.

Sales of the program to practitioners abroad constitute digitally delivered trade in the sense used by the Handbook on Measuring Digital Trade (World Trade Organization, 2023), conducted by a sole proprietor. Transactions of this size are unlikely to be captured by surveys designed around enterprises, which suggests that the export of codified craft know-how by individual practitioners forms a part of digital services trade that official statistics understate. Conditions of use also differ across receiving markets. Booking norms, price levels, client expectations about session length, and household arrangements vary between the United States and Ukraine, so identical time gains may be used differently in each.

Verification costs, the fifth category in the framework of Goldfarb and Tucker (Goldfarb & Tucker, 2019), bear on how such a product finds buyers abroad. A practitioner deciding whether to pay for a course taught by someone she has never met relies on digital signals: portfolios of finished work published online, written statements from

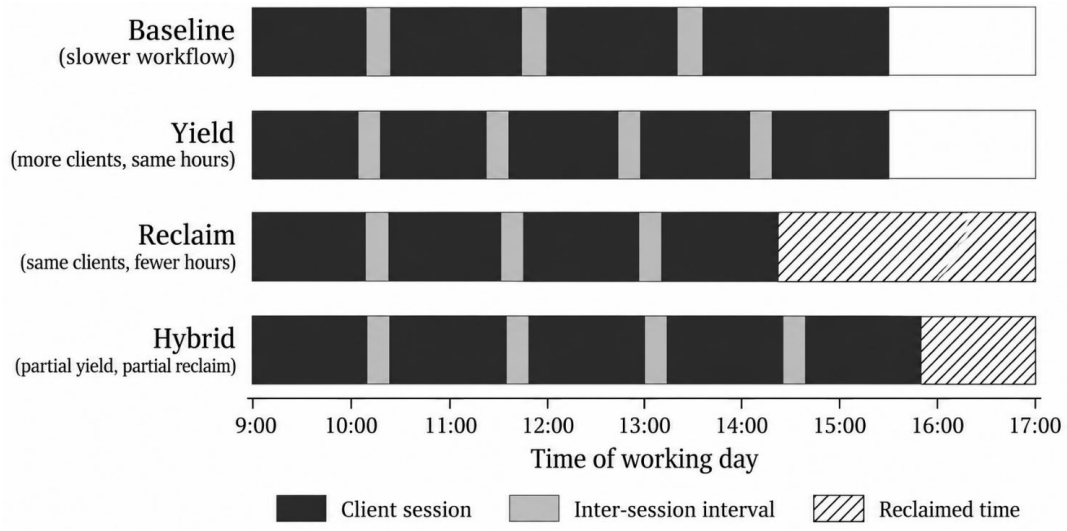


Figure 2. Time-budget redistribution of a working day under baseline, yield, reclaim, and hybrid allocations

Source: compiled by the author. Hatched blocks indicate time returned to non-work life; block lengths are schematic

colleagues, and accounts from earlier participants. These signals substitute for the personal observation through which craft reputations were traditionally established. Their low cost helps explain how an individual instructor without institutional affiliation could attract participants in several countries, and their limits explain why the claims they carry, including the time and income figures reported in this study, remain unverified.

Pricing and marketing of digital training interact with the allocation question. Shapiro and Varian argue that information goods are priced according to their value to the buyer (Shapiro & Varian, 1999). Value is easiest to demonstrate when it appears as income, such as a trainee's report of three additional clients and roughly 1,500 US dollars more per month. Gains taken as time are harder to state in a promotional message. Programs that market themselves through income outcomes may therefore attract buyers oriented toward yield and reinforce, at the level of the training market, the same bias that booking defaults create at the level of the schedule.

Digital delivery also carries an environmental dimension relevant to the green economy. International in-person courses require travel by the instructor or by participants, usually by air when markets lie on different continents. Delivery of the same content through recorded lessons removed that travel entirely for every participant outside the instructor's locality. No emissions estimate is attempted here, but the substitution of recorded instruction for physical travel is one of the mechanisms through which digitalization of vocational training may reduce its resource footprint.

Diffusion alone did not determine the economic outcome. Reported gains of about a quarter to a third of procedure length represent released capacity, and the accounts show that its conversion into revenue or into free time varied across practitioners and across one practitioner's career. Returns to digitally spread skills therefore arise downstream of training, in allocation decisions governed by the opportunity-cost logic Becker described (Becker, 1965). Practitioners with care responsibilities, whose non-market time is likely to be valued highly, reported reclaim; those facing fixed costs or early-career income needs reported yield. If workers value control over hours as highly as the evidence of Mas and Pallais and of Chen and colleagues indicates (Mas & Pallais, 2017; Chen et al., 2019), a gain taken as shorter days produces a return that revenue data do not register.

Digital scheduling infrastructure appears relevant to this allocation in a specific way, which the present article terms booking-default asymmetry. Online booking systems publish available time as bookable slots. When procedures become shorter, released capacity can be offered to clients through the same interface with no further action, so yield approaches the default outcome of an efficiency gain. Reclaim requires an active step: the practitioner must close slots, shorten published hours, or decline requests. Research on default effects suggests that such small differences in required action can shift aggregate outcomes substantially (Johnson & Goldstein, 2003). Low tracking costs reinforce the asymmetry (Goldfarb & Tucker, 2019). Yield generates entries in booking and payment records that business dashboards summarize as revenue and utilization; reclaim leaves no record (Table 2). A worker auditing her business through digital records sees only one of the two returns on her productivity gain, which may help explain the difficulty some trainees reported in justifying reclaim before its effects accumulated.

Booking-default asymmetry connects self-employed service work with the autonomy paradox observed among digitally connected professionals (Mazmanian, Orlikowski & Yates, 2013). Booking tools are adopted to increase control over scheduling, yet a default logic of continuous availability can turn each efficiency gain into further work and narrow the discretion the tools were meant to expand. Wajcman's argument that the temporal effects of digital tools depend on how they are organized leads to a similar conclusion (Wajcman, 2015). Self-employed practitioners differ from the platform workers studied by Wood and colleagues in one respect that matters here (Wood et al., 2019): no algorithm assigns their tasks, and the defaults can be reconfigured. Closed weekdays and seasonal switching reported by trainees indicate that such reconfiguration does occur.

Reversibility differs between the two pathways in a way that booking tools make tangible. Moving from yield to reclaim requires only closing slots or shortening published hours, a change that takes effect immediately in the scheduling interface. Moving back is harder. Clients who have settled into the time windows of a reclaim schedule may not

follow when the calendar reopens, and filling new slots requires renewed client acquisition through social media or referrals. Early-career practitioners who keep a yield orientation therefore preserve an option that is costly to rebuild once given up, which may partly explain why the shift toward reclaim in the observed accounts occurred gradually.

The case illustrates one channel through which digital technology raises productivity in work that resists automation. Autor's argument that technology tends to complement in-person, dexterous tasks (Autor, 2015) is usually illustrated with tools used during the task itself. Here, the complementing technology acted before the task, by transmitting a better way of organizing it, and after the task, by scheduling the time it freed. Neither channel altered the manual work, yet together they changed how much of it fits into a day. Productivity effects of this kind are small at the level of a single worker and accumulate only across large numbers of microenterprises, which helps explain why they receive little attention in research centered on platforms and large firms.

For a practitioner who also teaches, the two activities have different economics. Revenue from in-person service is bounded by working hours and by the physical capacity of one operator; revenue from a recorded program is bounded by demand and grows without additional service hours. Time released through efficiency can therefore be sold to clients, kept, or invested in producing digital products whose returns do not depend on further hours of service. Combining a capped in-person service with an uncapped digital product is one way in which personal-service microenterprises can take part in the digital economy without changing the service itself.

The case also bears on how digital transformation of small firms is measured. Policy frameworks track digitalization largely through adoption of technologies, online sales, and output per worker (Organisation for Economic Co-operation and Development, 2019). Reclaim registers in none of these. A cohort of digitally trained practitioners who take their gains as time would show flat revenue and fewer recorded working hours, a profile that conventional indicators and income-based evaluations of training could misread as stagnation. Collecting working hours alongside business records would allow such outcomes to be counted as returns. A comparable gap exists on the trade side: surveys of digitally delivered services could include sole proprietors who sell training or consulting abroad, a group that registration thresholds and enterprise-based sampling tend to exclude.

Several practical implications follow. Online training programs for service microenterprises can address allocation explicitly and present reclaim as a legitimate return on efficiency alongside revenue growth. Booking software can make reclaim visible by letting workers set daily caps or log released time as a tracked outcome. Training content can also cover configuration of the booking tools themselves, since default settings decide which allocation requires effort. Public programs that subsidize digital adoption by small firms could extend eligibility to recorded vocational training purchased by sole operators, a form of digital investment that current support schemes, oriented toward hardware, software, and e-commerce, may not recognize. Kalleberg's account of risk transfer to self-employed workers (Kalleberg, 2011) calls for caution: for practitioners without income buffers, reclaim may be unaffordable, and its availability follows household economic position.

Several limitations constrain these interpretations. Material originates in one practice and one training program, and correspondence came from self-selected participants who chose to write back, so selection and recall effects are likely. Reported time gains and income changes are unverified self-reports. Booking-default asymmetry is proposed on the basis of how online scheduling systems operate and of research on default effects; it was not measured here, and testing it would require comparing allocation outcomes under different booking-system configurations. Associations with life stage may reflect selection, since workers who choose reclaim may differ systematically from those who choose yield. Salon-employed and wage-based workers, whose schedules are set by employers, fall outside what the present material can support.

8. Conclusions

Self-employed nail services show how the digital economy reaches manual personal-service work through knowledge and coordination, leaving the manual task untouched. Once codified into explicit, self-checkable instructional units, a workflow methodology spread with the economics of digital content: a single set of recordings served a growing international

enrollment, and users reported procedures shorter by roughly a quarter to a third.

Released capacity was used in two ways. Some practitioners sold it as additional appointments, others kept it as earlier finishing times with revenue unchanged, and hybrid arrangements combined both and shifted with season, care responsibilities, and career stage. Allocation decisions, more than diffusion as such, determined whether the gain appeared as money or as time.

Booking-default asymmetry is the main conceptual contribution. Because scheduling software treats freed capacity as saleable by default and records only sold time, keeping freed time takes deliberate effort and goes unrecorded in business data. The benefit a self-employed service worker draws from new skills therefore depends partly on how the software through which she sells her time is designed and configured.

Two further points concern the wider digital economy. Individual practitioners who sell recorded training abroad take part in digitally delivered services trade that enterprise-based statistics are unlikely to capture, and digitalization indicators built on revenue and output overlook productivity gains taken as time. Future research could compare allocation outcomes across booking-system configurations, follow cohorts of digitally trained practitioners with time-use diaries and revenue records, and test whether codified, time-oriented content transfers equally well to other craft service occupations.

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