

UNIVERZITET U NIŠU
EKONOMSKI FAKULTET



**FUTURE ECONOMY:
SUSTAINABILITY,
INNOVATION AND AI**

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Niš, 2025. godine

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**FUTURE ECONOMY:
SUSTAINABILITY, INNOVATION AND AI**

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P R E F A C E

This collection of papers from the international scientific conference "**Future Economy: Sustainability, Innovation, and AI**", serves as a comprehensive synthesis of ideas, research, and visionary discussions aimed at understanding the transformative forces shaping the global economic landscape.

The conference commenced with a high-level panel discussion titled "Rethinking Economics: Sustainability, Innovation, and Artificial Intelligence". Distinguished panelists: Mijalče Santa (University in Skopje), Milenko Krajišnik (University of Banja Luka), Saša Čegar (University of Rijeka) and Igor Makovec (University Novo Mesto), set the stage by emphasizing that the traditional economic models must be updated to integrate the rapid evolution of AI with the urgent demands of environmental and social sustainability.

The thematic core of this proceedings is organized into four distinct sessions, each addressing a critical pillar of modern economics. First session, "AI-Driven Sustainable Finance and Economy Development" explores the intersection of financial technology and green growth. The papers herein analyze how artificial intelligence can optimize resource allocation, enhance risk assessment in sustainable investments, and foster economic resilience in an era of climate uncertainty. Session "AI-Powered Sustainability and Innovativeness: Driving Corporate Responsibility and Entrepreneurship", focusing on the microeconomic level, this session investigates the role of AI in reshaping corporate governance. It addresses how digital tools enable firms to move beyond mere profit-making, embedding social responsibility and innovative entrepreneurship into their core business strategies to meet the expectations of modern stakeholders. Next session was "Economic Theory, Accounting and Finance: Challenges, Innovation and Digital Transformation for Sustainability and AI". The contributions in this session tackle the structural shifts within the financial and accounting sectors. The authors examine how digital transformation and AI-driven automation challenge existing standards, requiring new frameworks for transparency, reporting, and the preservation of financial integrity in a digital-first world. As a culmination of the conference, the International Inter-Chair Scientific Conference on General Economic Theory – MIKET 2025 provided a deep theoretical reflection. This session, "Economic Theory Facing New Challenges: Between Sustainability, Digitalization and Social Justice" bridges the gap between technological efficiency and human-centric values, debating how economic

theory can navigate the delicate balance between rapid digitalization and the fundamental need for social justice.

The success of the conference is reflected in its diverse and international participation. The event brought together 89 authors and over 170 participants from 9 different countries. Out of the numerous high-quality submissions, a total of 43 papers have been selected and published in these proceedings, following a rigorous review process.

We hope that these proceedings will provide valuable insights for researchers, practitioners, and policymakers alike, serving as a catalyst for further innovation and a roadmap for a more sustainable future.

Editors

Vladislav Marjanović, PhD, Dean

Dejan Ž. Đorđević, PhD, Vice-dean for Scientific Research

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**FUTURE ECONOMY:
SUSTAINABILITY, INNOVATION AND AI**

Pregledni naučni rad

**GLOBAL DEMAND IN FREELANCING: WHAT ARE THE MAJOR
MARKETS IN PLATFORM ECONOMY AND
WHAT ARE THEY LOOKING FOR?**

Zoran Kalinić, PhD*

Vladan Ivanović, PhD•

***Abstract:** The rise of freelancing and global digital labour market, caused by ground-breaking development of digital technologies and their large-scale diffusion in business processes, created unprecedented opportunities for both employers and employees. Using web-scraped data from one of the leading global labour marketplaces (Upwork) for over 33,500 job postings across 160 countries, paper examines demand side for digital services. Combining geographical distribution, preferred modes of engagement, required skills and professional structure, research highlights main features of global demand for digital services. While United States are dominating the market (share of 43%), findings further reveal that most jobs are short-term (up to nine weeks), almost 4/5 of workers come from software development, creative and multimedia, and sales/marketing support, with the highest wages are offered for professional services (average \$38.5/hour).*

***Keywords:** Freelancing, Upwork, gig work, skills, digital labour platforms.*

1. Introduction

Strong rise in freelancing in the last decade is caused by broader use of ICT and rapid digitalization of business processes worldwide. Contemporary freelancing is often based on digital labour platforms, technological companies acting as intermediaries. These platforms are usually global, offering dominantly short-term employment on jobs and projects that can be realized digitally, with employers and employees coming from around

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the world. They experienced significant growth particularly during the pandemic, when many traditional companies moved to online work and when important upgrades in digital infrastructure were made.

Along with technological change, preferences of new job market entrants shifted. Traditional employment relations in a form of a permanent position in one company and with eight-hour working period, isn't anymore the ultimate goal for new employees. Set of preferences became much more complicated, where individuals are exploring new models of work engagement. One of most visible is freelancing, a type of self-employment in which the freelancer is engaged, usually with several employers, on occasional jobs and projects, usually done remotely (Kalinić, 2024). This brings the freelancer more freedom and flexibility, i.e., he can choose the jobs he will work on as well as the time and location from which he will work.

While there are many studies that explore the supply side of online labour market (Andelković et al., 2025; Kässi et al., 2021; Payoneer, 2023), the number of studies exploring the demand side, i.e., the characteristics of the job postings on digital labour platforms is fairly limited (Kalinić, 2024). This study tries to shed a light on this topic, by the analysis of job offers posted on the Upwork, one of the leading global digital labour platforms.

The paper is structured as follows. Section 1 presents literature overview, which intuitively leads to the analysis of the main reasons why companies use freelancers instead of full-time employees. The methodology and data sample are explained in Section 2, while the most important results of the study are presented in Section 3. The main conclusions are given in the final section.

2. Literature review

Although initially treated as an experiment, modern freelancing becomes an increasingly important component of the global labour market, influencing work culture, technological progress and economic trends (Yeramyan, 2023). Freelancing is even considered as the job of the future (Hasan et al., 2024), with strong growth potential: it is predicted that by 2027 as much as 60% of the global workforce will be freelancers in the broad sense (free professionals), and that in the US their number will reach almost 90 million by 2028 (Kim & Sawyer, 2023).

Digital labour platforms (DLPs) connect businesses-employers and interested freelancers-employees, while work performed over these platforms is also commonly referred to as platform work or gig work (ILO, 2022). According to ILO research (2022), in 2021, there were 283 digital labour platforms based on online work (without platforms in the taxi and delivery sector), where Kässi et al. (2021) estimated that there are a total of 351 online labour platforms as well as 163 million freelancer profiles registered on these platforms worldwide. Although different DLPs share some common characteristics, there is still considerable complexity regarding this phenomenon (Howcroft & Bergvall-Kåreborn, 2019), the research in this paper is concentrated on task- and project-oriented platforms, such as Upwork, Fiverr or Freelancer, where tasks require certain knowledge and can be performed remotely.

Global Demand in Freelancing: What are the Major Markets in Platform Economy and What are They Looking For?

Freelancers are self-employed entrepreneurs who do not employ other workers, pay their own taxes, usually work on projects (often) for several clients delivering services remotely, usually from their home (Huđek et al., 2020). They are often seen as a hybrid between employees and entrepreneurs (Van den Born and van Witteloostuijn, 2013). They are employees hired by small and large companies to work for a fixed period of time selling nothing but their professional knowledge and experience. In the same time, they can also be seen as entrepreneurs, because they work at their own risk and profit, actively seeking opportunities without any organizational guarantee or support. Donina et al. (2021) stresses some of the most important advantages why people choose to work as freelancers: work autonomy; flexible working hours; personalized workplace; better ability to coordinate with main job, studies, household duties; a large market of potential employers; the possibility of working with several employers at the same time; the possibility of achieving high incomes.

Digital labour platforms offer significant benefits for the businesses as well. First, companies have a global reach in selecting talent for the work to be done. Freelancers are often experts in their fields and as such are suitable for occasional hiring for specialized tasks, where companies hire individuals with adequate skills that best match specific projects on a short—term basis without the costly long-term commitment of hiring full-time employees (Muthuvani & Samuel, 2024). Access to talents from different cultures and backgrounds can bring unconventional approaches and enhance creativity and innovation (Barlage et al., 2019). Another important reason is cost-efficiency. Freelancers work remotely, most often from home, and companies are almost as a rule not obliged to provide them with space and equipment for work (Donina et al., 2021). Moreover, since the considerable wage arbitrage, services delivered by freelancers coming from developing countries are much cheaper. In addition, freelancers are usually hired on a short-term basis and are paid for their work by the hour or by the task, which considerably reduces costs since idle time costs, health insurance, retirement benefits or other contributions are not covered. Freelancers can be hired and start working within hours, avoiding lengthy recruitment cycles. Next, the risks and problems due to unsatisfactory cooperation are minimized, as the engagement can be terminated relatively easily, without complicated legal procedures (Huđek et al., 2020).

3. Methodology

Following Project's methodological framework (ENTEED, 2025b), one of the largest and most significant general labour platform was selected as a relevant representative of such platforms. Data collection was performed by web scrapping, using custom-build tool instead of commercial scraping software, primarily because of the need for greater flexibility and control (ENTEED, 2025a). Developed software was able to successfully address technical challenges such as pagination, dynamically loaded content, and avoiding anti-scraping mechanisms by incorporating features like user-agent rotation and request delay management, collecting only publicly available data on the platform without storing personally identifiable information unessential to the research.

Analysis of the demand side in freelancing was performed by using job postings collected in January 2025. Initially, 38,634 job postings from more than 160 countries were

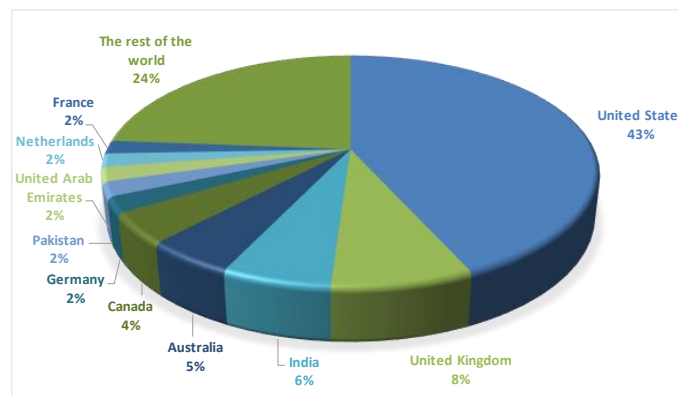
collected, but after data pre-processing, removing duplicates and incomplete postings, 33,594 job offers left. Generally, job postings are offered to the global market. But, in some cases, the employers may condition job posting on geography, asking only for freelancers from its own country, which is usually the case with employers from the USA. However, recent research (Kalinić, 2024) found that 89% of job postings on Upwork were intended to the global market.

In the post-processing phase, a Python script was developed to integrate the ChatGPT API, used for classification of professions based on the set of skills necessary to perform the job (which was published and collected for each job offer). In order to categorize all job postings into comparable yet distinct categories-professions, the approach used for Online Labour Index (Stephany et al., 2021) is used, by which all professions are divided into six categories: Software Development and Technology, Creative and Multimedia, Sales and Marketing Support, Professional Services, Writing and Translation, and Clerical and Data entry. All collected data were anonymized, converted into structured formats suitable for analysis, and securely stored using encryption protocols that comply with institutional data governance standards (ENTEEF, 2025a).

4. Results

In order to determine which countries are the major demand markets in platform economy, the analysis of the origin of the companies which posted job offers on the platform was done. The results are presented in Figure 1.

Figure 1: The distribution of the job offers by countries



Source: Authors' elaboration

The United States are by far the major demand market in global freelancing, with 43% of all job offers coming from this country. United Kingdom is second on the list, with a share of 8% of published job offers, followed by India with 6%, and Australia and Canada with 5% and 4%, respectively. The most important conclusion is that the demand for digital services is not exclusive feature of developed markets. However, in developing countries, such are Pakistan and India, there are huge imbalance in demand and supply, since there are dominating in the global supply of freelancers (ENTEEF, 2025a). Indian freelancers take

Global Demand in Freelancing: What are the Major Markets in Platform Economy and What are They Looking For?

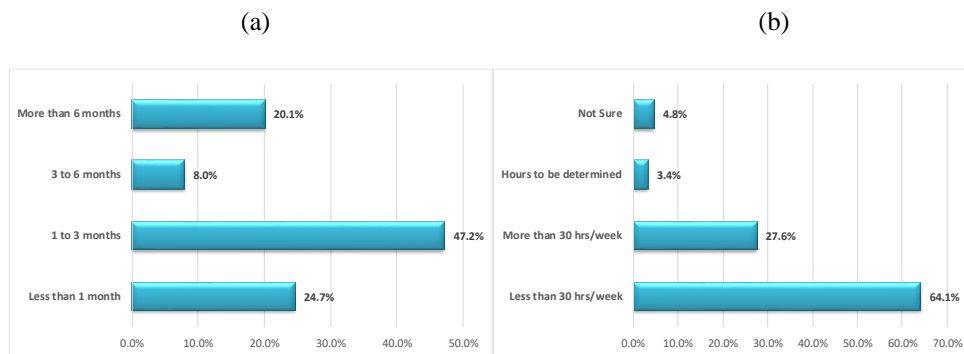
up to 40% of online jobs globally (Leung et al., 2021), while, based on our sample, only 6% of job offers are posted by companies from India.

Job postings on digital labour platforms can be analysed by several parameters. First one is according the mode of payment, i.e., whether is it paid by the hour or as a lump-sum payment. Generally, fixed price for a task is more frequently used for smaller tasks, such as short translation or logo design, while payments by the hour are usually used for tasks performed in a longer period (e.g., marketing campaign). The results show that 59.1% of the job postings are paid by hour, while remaining 40.9% are paid by task (fixed-price). This often depends on the local characteristics of the market. For example, in Asia 54.5% of jobs are paid by task.

Average hourly wage in our sample is \$26.13. Geographical distribution is, however, uneven, because it is higher than hourly wages in Europe (\$23.90) and Asia (\$23.25), where the United States, as the major demand market, offer the highest hourly prices (\$28.54). In case of fixed-price projects, global average is \$586. If one combines this amount and average hourly wage, it reaffirms the claim that fixed projects are dominantly with very short time horizon, lasting, on average, 22,4 working hours.

A look on distribution of jobs paid on hourly basis by estimated job duration (Figure 2 (a)), reveals that most of the jobs are short-time tasks, with more than 70% of them with estimated duration of less than 3 months. Similarly, the distribution of hourly-paid jobs by estimated weekly workload (Figure 2 (b)), shows that majority of the job postings (64.1%) expects part-time engagement i.e. less than 30 hours per week. These figures confirm the that freelancing is primarily used for small pieces of production process within the firms.

Figure 2: The distribution of hourly-paid jobs by estimated job duration (a) and by estimated weekly workload (b)

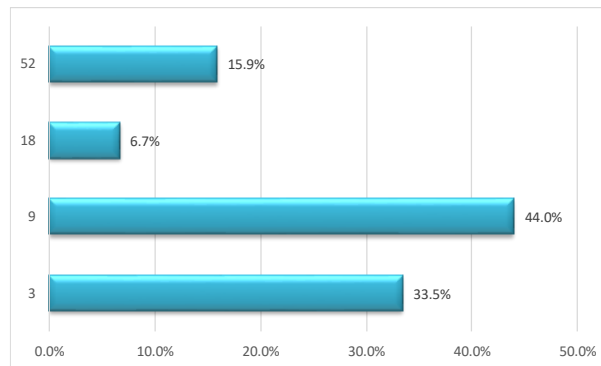


Source: Authors' elaboration

Looking at the distribution of job postings by engagement duration (in weeks) for all the jobs (Figure 3), since there aren't available data only for jobs paid by tasks, reconfirms the fact that the most freelance jobs are short-term, lasting up to three or up to nine weeks. Since 77.5% of all job offers have estimated duration of 9 weeks or less (which equals to two months and a week), and linking it with the fact that 69.3% of jobs paid by the hour are

shorter than 3 months, it is clear that the jobs paid by fixed price are usually very short, even more frequently shorter than jobs paid by the hour.

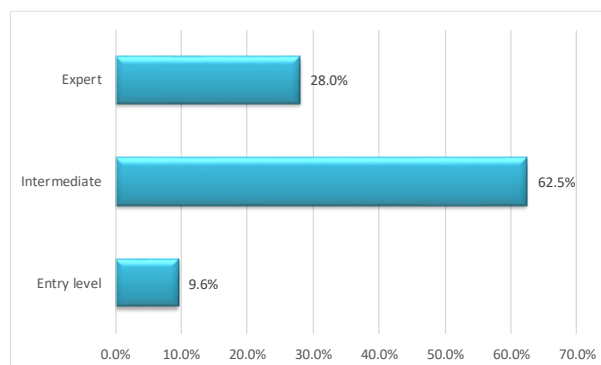
Figure 3: The distribution job postings by engagement duration (in weeks)



Source: Authors' elaboration

Freelancer experience plays an important role in searching, finding, obtaining and performing jobs on digital labour platforms. As it could be expected, the fewest job offers required entry-level experience (Figure 4). Employers often do not want to cooperate with beginners and inexperienced freelancers, without any work history or they use them only for very simple, generally short, and, by rule, low-paid tasks. Most of the job offers required an intermediate level of experience, followed by an expert level. Of course, hourly wages are strongly dependent on freelancer experience, and therefore businesses are ready to pay \$35.4 per hour for an expert, \$22.9 for a freelancer with intermediate experience and only \$19.4 per hour for a beginner.

Figure 4: The distribution job postings by required experience



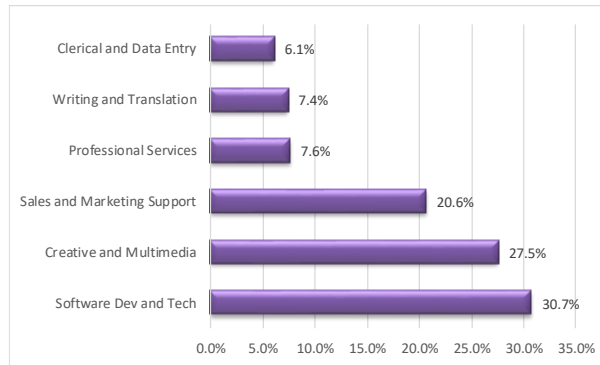
Source: Authors' elaboration

The distribution of the job postings across different professions (Figure 5) clearly indicates domination of three professions (software development and technology, creative and multimedia, and sales and marketing), among which almost 4/5 of job postings belongs

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to. It is closely related to most frequent skills that are demanded (Figure 6), the skills are related to graphic and web design and development, followed by video editing and production, digital marketing, content writing, and programming, dominate. It is in line with previous studies (Kalinic, 2024).

Figure 5: The distribution of the job postings across different professions



Source: Authors' elaboration

Figure 6: The most frequently required skills by job offers

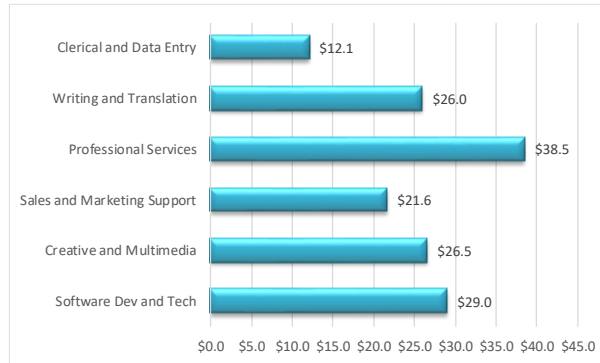


Source: Authors' elaboration

Although only 7.6% of all job postings is in professional services, this profession is the most paid one, with \$38.5 average hourly wage (Figure 7). It encompasses, however, quite diffuse professional profiles, including some of the high-value services, such as specialised consulting, accounting, or legal services.

Far behind, but still high, are the offers for Software Development and Technology (\$29.0) and Creative and Multimedia (\$26.5). Again, as expected, the least paid profession is Clerical and Data Entry, with only \$12.1 per hour, because tasks in this category usually do not require any specific and sophisticated knowledge and experience.

Figure 7: Offered hourly wages across job categories



Source: Authors' elaboration

These findings not only reflect different rates for different professions on demand side of the online labour market, then also are in accordance with the structure of hourly rates on the demand side of the market (see Anđelković et al., 2025), suggesting that wage adjustments, both increases and decreases, are happening through “pure market mechanism” unconstrained by regulative burden.

3. Conclusion

Hiring freelancers instead of full-time employees provides many benefits to the businesses, including cost-efficiency, access to global pool of professionals, short-term cooperation with top domain experts, less administrative and legal burden, which makes them desirable elements in rapidly changing technological and business environment. By far, the key demand market for platform workers is the United States, by the number of posted job offers, but also by offered hourly wages, determining dominantly key global trends when demand for freelancer services is in question. While the short-term nature of job postings prevails, in both modes of engagement of freelancers (on hourly basis and task related), there are considerable differences in professional structure of this demand and remuneration across professions. The most demanded areas are software development, creative and multimedia services and services related to sales and marketing, while the most well-paid jobs usually come from the broad area of professional services, where sophisticated services such as consulting, accounting, financial, or legal services, belong to.

One of the major limitations of this study is that it analysed only one platform, although one of the most important one. In future studies, more platforms should be included, but not only general ones but also domain-specific (i.e. 99designs, which is specialized in design, or ProZ, which is specialized in language services).

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GLOBALNA POTRAŽNJA U FRILENSINGU: KOJA SU GLAVNA TRŽIŠTA U PLATFORMSKOJ EKONOMIJI I ŠTA ONA TRAŽE?

Rezime: *Uspon frilensinga i globalnog digitalnog tržišta rada, izazvan revolucionarnim razvojem digitalnih tehnologija i njihovom širokom primenom u poslovnim procesima, stvorio je ogromne mogućnosti i za poslodavce i za zaposlene. Korišćenjem podataka prikupljenih web-scraping metodom sa jedne od vodećih globalnih platformi (Upwork), baziranih na više od 33.500 oglasa za posao iz 160 zemalja, rad analizira tražnju za digitalnim uslugama. Kombinujući geografsku distribuciju, preferirane oblike angažovanja, tražene veštine i strukturu profesija, istraživanje ukazuje na glavne karakteristike globalne tražnje za digitalnim uslugama. Dok Sjedinjene Američke Države zauzimaju 43% tržišta, nalazi dodatno otkrivaju da je većina poslova kratkoročnog karaktera (do devet nedelja), da je skoro 4/5 oglasa u oblastima razvoja softvera, kreativnih usluga i multimedije i prodaji i marketingu, a da je najviša cena u oblasti profesionalnih usluga (u proseku 38,5 USD na sat).*

Ključne reči: *Frilensing, Upwork, gig rad, veštine, digitalne radne platforme.*



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