# DIGITAL LABOUR MARKETS IN CENTRAL AND EASTERN EUROPEAN COUNTRIES

## COVID-19 and the Future of Work

Edited by Beata Woźniak-Jęchorek and Kamilla Marchewka-Bartkowiak

First published 2023

ISBN: 978-1-032-35411-8 (hbk) ISBN: 978-1-032-35412-5 (pbk) ISBN: 978-1-003-32677-9 (ebk)

# 12

## INDIVIDUAL WORK PRICING BY NON-FUNGIBLE PERSONAL TOKENS ('NFT GIG TOKENS') – A NEW OPPORTUNITY FOR GIG WORKERS

Kamilla Marchewka-Bartkowiak, Michał Litwiński, and Karolina Nowak

(CC BY-NC-ND 4.0) DOI: 10.4324/9781003326779-15 The funder for this chapter is the University of Primorska Poznan University of Economics and Business



## 12 INDIVIDUAL WORK PRICING BY NON-FUNGIBLE PERSONAL TOKENS ('NFT GIG TOKENS') – A NEW OPPORTUNITY FOR GIG WORKERS

Kamilla Marchewka-Bartkowiak, Michał Litwiński, and Karolina Nowak

#### Introduction

The COVID-19 pandemic transformed the way people operate in all fields of their activity – individual, social, economic, cultural, civic, to name the most essential spheres. One of the crucial changes to the rules existing within pre-pandemic societies was the modification of the work environment and principles (Ralph et al., 2020; Masood et al., 2022). The patterns developed within the gig economy, which are based on the idea of flexibility and the use of technological communication platforms, proved to be the most common response to the change (Diab-Bahman & Al-Enzi, 2020).

When it comes to specific problems that were highlighted by the pandemic, the issue of labour pricing occurred to be of concern. The development of online communication tools created new opportunities to provide services and share results of one's work via the Internet. It is worth noting that even before the COVID-19, the issue of work valuation was crucial for some groups, for example, for artists. The token became an important way of work monetisation both for them and the new services providers. More and more one hears about artists converting their artworks (the results of their work) into non-fungible tokens (NFT tokens). But will only celebrities (artists, actors, and influencers) use this tool in the future? This question occurred to be an extremely relevant matter in a (post)pandemic world. It seems that NFT gig tokens are an answer to the challenges occurring on the labour market, related to the popularisation of the employment model in the gig economy and the issue of valuing work offered by gig workers.

The main aim of our research is to find out whether NFT gig tokens can provide an answer to the problem of how to value work in the world of new technologies, in particular – whether NFT gig tokens can be a tool of valuing one's own work that considers both the financial and network dimensions of the individual. We therefore formulate the thesis that NFT gig tokens has the potential to become a new tool of labour valuation for and by gig workers.

Research on the gig economy has so far been undertaken in relation to the main ideas behind it, such as flexibility or Wikinomics (De Groen et al., 2017; Tapscott & Wiliams, 2006), key features such as openness and horizontality (Florida, 2019) and the risks involved (social security, and cyber security). However, research is lacking on how (means, tools) to value the services, offered by gig workers. This chapter should partially fill this gap. In the gig worker context, personal tokens (PT) can serve as a tool enabling not only a simple market valuation of a labour service but also a network valuation based on the network participants' trust in the token issuer. It is worth noting that the network valuation of work or enterprise is usually performed only in two dimensions – financial (e.g., using the Network-Value-to-Transaction Ratio - NVT) and technological (Marchewka-Bartkowiak et al., 2022). However, we propose a new way of approaching network valuation based on the axiological dimension. We assume that network valuation is based on trust, which is constructed primarily by a similar axiological vision of the world respected by the issuer and the network participant, that is, the same hierarchy of values, captured as the sense of their actions undertaken in the network (observed on social profiles or purchasing PT). A personal token would therefore not be a tool for valuing the services offered, but rather a means of valuing the issuer's broadly defined personal brand (personality). As such, personal tokens can build the long-term credibility of gig workers in the network as a service provider. Those features of the personal token, referred to by the authors as the 'NFT gig token', are relevant not only for issuers already recognised in social media (celebrity PT) but also for those who are beginning to build their personal brand online (common PT). In the first case, tokens strengthen the celebrity's position by providing a modern and attractive gift for their fans and followers; in the second case, tokens initiate participation and often confirm the credibility of the network participant willing to offer their service. The increased turnover of personal tokens can also be evidence of the market attractiveness of their issuers, also from a financial point of view.

The article is based on empirical data concerning the owners of tokens, which are issued on an intentionally created personal token platform (https://personal-tokens.io/) in the period December 2020–June 2021. The indicated platform is not only a newly explored source of data (to the knowledge of the authors of the study, no research has yet been conducted using it), but also a valuable collection of information dedicated strictly to the subject matter. The study covers 170 personal token issuers, 45 of which were analysed in detail.

We used as methods the quantitative analysis (mainly t-test of significance of correlation coefficients between the included indicators and descriptive statistics of the created indicators) and content analysis in a framework of the cultural approach.

The first contribution of our research includes a classification of the work offered by digital token issuers considered as a part of a gig workers group. We also conduct an original analysis of the relationship between the valuation of 1 labour/ service hour using personal tokens by both token owners (labour supply) and the

customer network (labour demand). The third contribution of our study is the formulation of the own network valuation proposal, based on the network participants' trust in the PT issuer, by means of identifying the values to which the token issuers referred in their profile description of the work offered.

The remainder of this chapter is organised as follows. We start with a presentation of literature background on NFT, PT, and gig workers. In the subsequent section we focus on research design, namely data and methods. Then we present results of our study. The last section is dedicated to discussion and conclusions.

#### Literature review

Personal tokens are a kind of digital tokens based on blockchain technology, more widely referred to as distributed ledger technology (DLT). The issue of digital tokens is now considered both in the context of cryptocurrencies (narrow approach) and cryptoassets (broad approach). Taking into account the new blockchain technology regulations proposed at the European Union level in 2020, digital tokens can become the basis for developing technological instruments within the framework of open and decentralised finance. This chapter adopts, as a basis for determining the characteristics of personal tokens, the definition proposed by the European Commission in 2020 as part of the drafts of the new regulations that comprise the Digital Finance Strategy, in particular in the Markets in Crypto-Assets Regulation -MiCA. According to this definition, 'crypto-asset means a digital representation of value or rights which may be transferred and stored electronically, using distributed ledger technology or similar technology' (Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, COM(2020)593). Thus, considering the general nature of cryptoassets, it can be pointed out that personal tokens (PT) are a type of token otherwise known as digital tokens, which are characterised primarily by the individual ownership of their issuers (both in the celebrity and common person categories) and are mostly intended to provide digital access to a good or service, available on DLT, that are only accepted by the issuers of that token. Technically, personal tokens are non-fungible (NFT), meaning that their feature is personalised (e.g., created according to the ERC-721 standard on the Ethereum blockchain).

NFTs are non-fungible tokens that are present on the cryptocurrency market but are conceptualised differently from cryptocurrencies. The latter are mainly captured as a means of payment, standardised as to its technical characteristics, which can sometimes be used for speculation (Baur et al., 2018), whereas NFTs are digital assets that are unique and heterogeneous in nature. 'The non-fungibility of NFTs is one of the key asset characteristics that is valued' (Dowling, 2021a).

As NFTs are typically purchased using cryptocurrencies as a medium of exchange based on smart contracts (Lisi et al., 2021) and that the leading traders of NFTs are cryptocurrency investors, similarities between the two markets are identified (Dowling, 2021b). Researchers expect some inefficiency in NFT pricing behaviour, similar to early cryptocurrency pricing (Cheah & Fry, 2015; Urquhart,

2016; Dowling, 2021b). As a symbolic date for NFTs to become established in the (not only digital) market as a new form of asset pricing, one can take 11.03.2021, when the London-based Christie's Auction House sold for \$69.3m. Beeple NFT, the digital ownership record for Mike Winkelmann's work 'Everydays: The First 5,000 Days' (Crow & Ostroff, 2021) – this was the third highest price achieved by a piece by a living artist.

Personal tokens preserve the properties of NFTs, as they are a digital record of the right to an asset, which is a person, transferred by the issuer to the investor. When raising the category of personal token, one should focus on three main dimensions: (1) who someone is – personality, (2) what someone means online – social personal brand, and (3) what and how someone offers within PT – product, service (Marchewka-Bartkowiak & Nowak, 2020). Those three main dimensions (personality, social prestige, and service specification) are evoked in the context of characterising gig workers, who represent the so-called reputation economy, that is, those who build their position on the market based on their personal brand (Huws, 2014).

Gig workers are conceptualised in the broadest terms as workers who perform and complete short-term on-demand (i.e., gig) work for various employers (Torpey & Hogan, 2016; Best, 2017). A distinguished group are digital workers, consisting of individuals who use technological tools in their work (Colbert et al., 2016), they are also referred to as crowdsourcing workers or eLancers (Schroeder et al., 2021). The work model adopted here implies the idea of Wikinomics, described as a behaviour that combines openness, partnership, sharing, and global action (Tapscott & Wiliams, 2006). Gig workers, representing the reputation economy, are characterised by: design, timeliness (deadline), value estimation, reputation, horizontal labour market ('claims' of the market, of the principal), independence, creativity, ingenuity, innovation, time and space mobility (characteristics of the worker, the contractor) (Degryse, 2016; Donovan et al., 2016; De Groen et al., 2017; Florida, 2019; Dosi et al., 2021). Thus, these are the characteristics that represent the three dimensions of valuation in PT indicated earlier: personality (worker characteristics)-community status-service specification (market claims/ expectations).

#### **Research methods**

Empirical data for the study were obtained from the personal token platform www. personaltokens.io. in the period December 2020–June 2021. The indicated platform is not only a newly explored source of data (to the knowledge of the authors of the study, no research has yet been conducted using it) but also a valuable collection of information dedicated strictly to the subject matter. The study covers 170 personal token issuers, 45 of which were analysed in detail. Despite the fact that about 500 token issuers are registered on the platform, we decided to analyse only 170 cases as those observations were described in a manner which allowed us to identify the type of services provided and valued by the means of a token.

Moreover, only 45 token issuers specified pricing of their work, enabling us to conduct further analysis as stated in the main text.

Generally, the analysis of types of services offered by personal token issuers was embedded in two classifications. Within the framework of the study, the service descriptions of each of the 170 digital token issuers (personal token issuers who offered services by means of those tokens) were analysed and then classified into a specific group based on the typology characterised in Table 12.1 and Appendix Table 12.6.

It should be foremost said that the development of such a typology is associated with certain challenges: (1) the nature of services is ambiguous (sometimes it is not possible to assign them to a single profession); (2) many services have appeared on the market relatively recently and, in addition, they are performed fully remotely, thus eluding the work typologies recognised in the research community; and (3) the respective literature lacks considerations on classifications of the work offered by digital utility token issuers – typologies of services provided by remote workers were only developed.

Referring to the latter, it is worth noting that the topic most like the area studied by the authors of this chapter is the valuation of work within the gig economy. A classification of that kind of services has been proposed, among others, by Kässi and Lehdonvirta (2018). That typology was adopted by the authors of this paper as the suggested six classes cover the kinds of services offered by digital token issuers relatively well (the classification was presented in appendix, Table 12.6).

Nevertheless, the motivations of utility token issuers seem to be of peculiar nature (especially, because of networking motivation of tokenisation), so their activities in the market of offered services cannot be fully identified with the gig economy. According to the results presented below, some personal token issuers elude the aforementioned typology. The authors of the study therefore developed their own classification of the services offered, based on the motivation for digital token issuers to join the platform on which they can offer their services. These motivations include an interest in new technologies, an interest in financial (or more broadly, economic) issues and a need to be a part of a network. Table 12.1 contains details of the classification.

In the next part of the research, an analysis of the relationship between the valuation of 1 labour/service hour using personal tokens by both token owners (labour supply) and the customer network (labour demand) was conducted. The study used, among other things, financial data relating to the market valuation on a given date (30 June 2021) in the ratio PT:ethereum:dollars.

Lastly, to explore NFT gig tokens as a tool for network valuation of an issuer's personal brand and work, we applied the assumptions of a cultural approach, offering the opportunity to understand how issuers brought meaning to the tokenisation of themselves and their work. We therefore examined the network effect from the axiological perspective – we identified what values issuers referred to when creating and describing their token to make other network participants

Class of services	Examples of provided services
Financial/	Accounting
Economic – E/F	Consulting (financial, investment, real estate,
	business, and tax advisory)
	Currency exchange
	Human resources
Social (community services) - S	Trainings (incl. online courses)
	Platform CEO/founder
	Advertising/Promotion of ideas
	Language courses
	Consulting (e.g., photography, architecture,
	and social media)
	Creative writing
	Travelling
	Celebrity (actor, musician, and athlete)
	Community development (YouTuber and
	blogger)
	Mentoring and coaching
	Fundraising
Technology – T	Web development
	Game development
	Software development
	New technology development
	Software testing
	IT consulting
	Computer graphics
	Video production

TABLE 12.1 Classification of services provided by personal token issuers

Source: Own elaboration.

trust them and become interested in the token, the person, and the service. We conducted our research in a framework provided by the theory of the basic individual values and work values implemented firstly by Shalom H. Schwartz (Ros et al., 1999). We assumed that issuers referred to 10 main axiological areas, such as power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security (each of these areas has its own associated – Figure 12.1).

The selected 45 personal tokens were analysed in terms of issuer's axiological relation to work. The one was estimated in a five-point Likert scale with the use of content analysis of communication artifacts, that is, information shared in the issuers' personal profiles on the examined platform [justification for the choice of the scale – see Höhne et al., 2021]: 5 – necessary, 4 – desirable, 3 – objectionable, 2 – not desirable, 1 – not necessary. The interpretation of the different communication acts was carried out from a cultural perspective, aimed at identifying

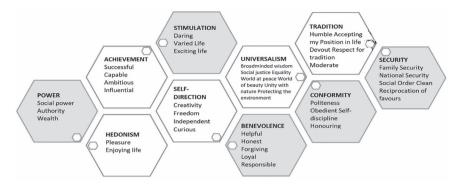


FIGURE 12.1 Types of axiological areas (values) taken into account when evaluating work

Source: Own elaboration based on Ros et al. (1999), p. 52.

the values revealed by the authors (issuers of personal tokens) in the content of the profiles.

#### Findings

#### Classification of services offered by PT

The results presented in appendix in Table 12.7 show that about one-third of personal token issuers offer services of professional nature. However, work related to creativity, software development, and clerical tasks are also quite eagerly provided by PT issuers. Interestingly, more than 10% of services offered by workers from the analysed platform elude the classification, which is not surprising when considering the fact that the typology was developed as a part of the research concerning the gig economy. The PT issuers, which were not covered by the classification, focused mainly on developing relations with the community.

Analysis based on the second typology reveals that more than 60% of the analysed 170 PT issuers provide work related to community services (cases, which in the previous classification were captured by professional and creative kinds of services, were partially covered by this type), while the financial and technology classes each account for about 20% of the remaining token owners (Table 12.2). As the classification developed by the authors of the chapter better corresponds to the structure of services offered by PT issuers (specifically, it covers all the types of services), it will be applied in further analysis.

The 45 tokens, which were analysed in detail, roughly resemble the structure in terms of the nature of the services offered (Table 12.3 and appendix, Table 12.8). The largest proportion of personal token issuers provides work having the character of services to the community (almost a half of considered service providers).

#### 256 Kamilla Marchewka-Bartkowiak et al.

Class of services	Number of cases	Percentage
Social (community services)	103	60.59
Financial/Economic	33	19.41
Technology	34	20.00
Total	170	100.00

 TABLE 12.2 Type of services, according to classification by the authors of the chapter

Source: Own calculations based on data from PT platform.

TABLE 12.3 Share of service types offered by analysed selected 45 token issuers

Class of services	Number of cases	Percentage
Social (community services)	21	46.67
Financial/economic	8	17.78
Technology	16	35.56
Total	45	100.00

Source: Own calculations based on data from PT platform.

TABLE 12.4	Basic statistics on	the amount	of PT per	1 hour	of individual	work of their
	owners					

	Number of tokens per 1 work hour		
	Mean	Min	Max
Social (community services)	2,071	1	10,000
Financial/Economic	10,981	151	70,000
Technology	1,922	3	7,500
Total	3,602	1	70,000

Source: Own calculations based on data from PT platform.

However, the technological class accounts for a greater share than in the whole sample of 170 PT issuers.

#### Personal tokens financial valuation

As can be seen in Figure 12.2 and Table 12.4, 45 owners of utility tokens were quite diversified when it comes to valuation of their work time (from 1 to 70,000 tokens per 1 work hour). The highest average number of personal tokens is observed for the class of financial/economic services (almost 11,000 tokens). The mean for social and technology services is substantially lower and amounts to around 2,000

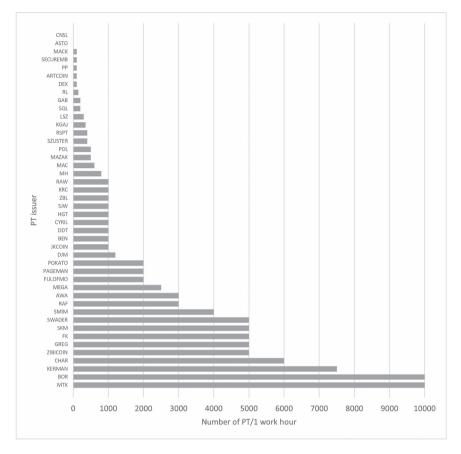


FIGURE 12.2 Market price per 1 hour of individual work of PT owners\*

\* For a clearer graphical presentation, the figure does not include the case with highest price per token – VIP tokens (70,000 tokens per 1 work hour).

Source: Own calculations based on data from PT platform.

tokens. Similar conclusions could be drawn when analysing the minimum and maximum values.

As further analysis shows, the highest valuation of one hour of labour service offered using personal tokens was not directly related to high customer interest as assessed by the price of respective token (appendix, Table 12.9). Specifically, the correlation coefficient between both number of tokens per 1 work hour and USD price of 1 work hour and token price amounts to -0.05 and 0.01, respectively, and is insignificant at 0.05 level according to t-test. Similarly, labour pricing, measured in USD per 1 work hour, is not significantly correlated with number of tokens per 1 work hour (coefficient at the level of 0.03). Interestingly, neither token price

	USD/work hour					
	Mean	Median	Standard deviation	Coefficient of variation	Max	Min
Social (community services)	36.345	2.054	78.395	216%	310.765	0.009
Financial/Economic	1,312.810	52.617	3,383.654	258%	9,674.685	0.044
Technology	135.154	0.437	356.226	264%	1,251.270	0.000
Total	298.40	0.99	1,448.125	485%	9,674.69	0.000

**TABLE 12.5** Work pricing using PT – descriptive statistics

Source: Own calculations based on data from PT platform.

nor the work pricing (based on PT) are significantly correlated with number of months that have passed since the PT issue – coefficient amounts to -0.2 and 0.08, respectively.

It is worth realising that PT issuers differ in terms of their work valuation not only when the number of tokens per work hour but also unit price in USD is considered (Table 12.5). The highest average pricing is observed for the financial/ economic class of services – findings based on mean level are supported by analysis of median value. Substantial difference is also observed for maximum work pricing (up to almost USD per work hour in F/E class) while the minimum values are quite similar across kinds of services. It should be also underlined that PT issuers are considerably diversified within classes. For each type of services standard deviation exceeds 200% of average 1 work hour price.

As follows from the analysis of financial valuation and the study of the type of services offered, at the current, initial stage of development of the personal token market, the financial motivation of the owner, and the class of service offered seem to be secondary criteria for token valuation. The high volatility of pricing, surprisingly low values of the latter and lack of significant relationships between considered categories can support that assumption.

Therefore, we suppose that, in addition to the factors specified above, token owners are driven by an additional motive – obtaining a network effect. This would mean that the main purpose of the token issue is not necessarily to sell services or goods, but to increase the number of users of a given personal token, which may in the long term translate into increased utility of the virtual job offer. In order to confirm the thesis, we carried out the analysis of the axiological background of the decision to use tokens in labour valuation, which was presented in the next section of the chapter.

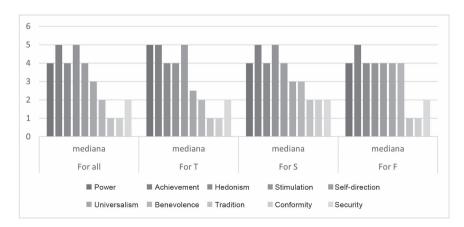
#### NFT gig tokens as a network valuation tool of personal brand and offered work – an axiological approach

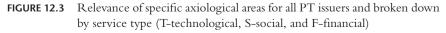
In the study, we assumed that the issuer creates a specific axiological image of themselves and their work, which is intended not only to attract investors/customers, but at the same time to build the issuer's credibility, enhance trust towards them, and increase their network value as a person.

The research conducted on the linguistic layer of the profiles of issuers who offered work as part of their token reveals that the most vital axiological area referred to by all issuers, regardless of the type of services offered, was achievement (5 – necessary). PTs therefore seem to be considered by each issuer as a means of achieving success and strengthening their impact on the environment. It is also related to building one's own position in the world as a person accomplishing financial success and 'sticking' social prestige to it (power: 5 – necessary, 4 – desirable). The results showing the importance of the 10 axiological areas for all PT issuers and by service type are presented in Figure 12.3.

An analysis of the content and style of the statements included in the profile descriptions and posts of the issuers showed that across all groups there were no significant differences in positioning values such as hedonism (4 –desirable), stimulation (5 – necessary, 4 – desirable), self-direction (5 – necessary, 4 – desirable) high, tradition (2 – not desirable, 1 – not necessary), conformity (2 – not desirable, 1 – not necessary), and security (2-not desirable) low (as unimportant).

That allows us to identify the issuers' worldview as one that is directed more towards the realisation of individual values, associated with social success and individual expression, than towards social values, directed towards the common good and socially supported solutions. It is the individualism and uniqueness of the individual, combined with the 'promise' of success, that is supposed to be a factor that attracts investors. This factor makes the latter trust the issuer and encourages the decision to purchase the token and the service it offers. The network effect appreciated by issuers (in our study understood as axiological valuation) is thus based on an individualistic rather than on a community-based worldview.





Source: Own elaboration based on data from PT platform.

The professional group in which interesting axiological differences arose was the one offering financial services. Issuers representing that group much more often revealed the significance of such axiological areas as universalism (4 – desirable) and benevolence (4 – desirable), so on the one hand – they considered the broad context of changes (social and environmental) occurring in the world in connection with the spread of DLT, and on the other hand, the ability to offer support to others (within or through PT) was crucial for them. Hence, the analysis of those data revealed an atypical approach of that group, as this type of reference to value in the previous labour market model (before the emergence of new online or gig economy work models) was attributed to groups of professions offering services of social nature (Autor & Dorn, 2013). In the study, this occupational group represented a reference to these values only at the 3-objectionable level.

The comparison of market price per 1 hour of individual work of PT owners (number of PT/1 work hour) with the network approach presented by issuers (in our study analysed in terms of respect to certain axiological values; appendix, Figures 12.4 and 12.5) shows that there were five axiological areas to which issuers with the same number of PT per 1 work hour referred regularly: self-direction, universalism, benevolence, conformity, security. It is worth noting that only one of those areas was 'meaningful' for issuers (self-direction) and two gained a little relevance (conformity and security). The respect of issuers from each price group to the other two axiological areas (universalism and benevolence) ranged from being of low importance (2 – not desirable, 3 – objectionable) to being the most vital (5 – necessary). Thus, these results show that issuers tended to represent a similar set of values (individualistic values), any differences appeared only with respect to the two axiological areas associated with community attitudes (universalism and benevolence).

Considering the results of the analyses conducted in this and the previous section of the chapter, it should be argued that issuers focused more on the network effect in the valuation of their work by means of a token than on reflecting the market valuation of a specific type of service (valuation of services offered outside the analysed platform, within the traditional labour market). Issuers created a specific axiological image of themselves and their service; content analysis of the linguistic layer of profiles according to the cultural approach revealed that that image was quite homogenous, grounded in a similar value system. In fact, the issuers of all services built their image (personal brand) as people focused primarily on expressing their personality, creativity, bringing success and satisfaction, which cannot only be the basis for trusting them, investing in them and their work by network users, but which at the same time will strengthen their position in the market and within the network.

#### Conclusions

A personal token seems to be an appropriate tool for valuation of services offered online. However, the pricing does not necessarily reflect the respective indicators observed at the regular labour market. In fact, the research conducted in the chapter allowed us to draw some important conclusions.

Firstly, the most important group of services offered by token owners are those of a social nature. That result is based on the analysis carried out with the application of the newly developed classification of services provided by issuers of NFT gig tokens.

Secondly, the high volatility of pricing, surprisingly low values of the latter and lack of significant relationships between pricing and certain categories (e.g., time that passed since token issue) are observed. We were unable to identify any regular pattern in the levels of work pricing for the provided services. Thus, the financial motivation of issuers that offer their work applying personal token seem to be a secondary criterion of valuation. Token owners seem to be driven by the additional motive – acquiring a network effect.

Third, the thesis is supported by the results of PT issuers' profiles analysis. In the context of the axiological dimension of the ways issuers value their services, the dominant values represented axiological areas related to the sphere of individual cognitive activity and emotional experience (power, achievement, hedonism, stimulation, and self-direction). The group that presented a slightly different value system from the others was the one offering financial services.

To sum up, at the current stage of development of the personal tokens market, the main motive for the valuation of the offered work is a new factor – the appearance and the development of a network of contacts (customers) in the virtual world, which will enable issuers to achieve a network effect in the long term. This effect can translate into increased financial benefits of PT issuers in the long term by offering their work based on the analysed platform.

#### Acknowledgements

The chapter was prepared through the project financed within the Regional Excellence Initiative programme of the Minister of Science and Higher Education of Poland, covering the years 2019–2023, grant no. 004/RID/2018/19, financing of 3,000,000 PLN.

#### References

- Autor, D. H., & Dorn, D. (2013). The growth of low-skill service jobs and the polarization of the US labor market. *American Economic Review*, 103(5), 1553–1597. https://doi. org/10.1257/aer.103.5.1553
- Baur, D. G., Hong, K., & Lee, A. D. (2018). Bitcoin: Medium of exchange or speculative assets? Journal of International Financial Markets, Institutions & Money, 54, 177–189. https:// doi.org/10.1016/j.intfin.2017.12.004
- Best, S. (2017). The U.S. Gig economy: Economic imposition or economic choice? *The Business and Management Review*, 8(4). https://cberuk.com/cdn/conference\_proceedings/conference\_93744.pdf
- Cheah, E.-T., & Fry, J. (2015). Speculative bubbles in Bitcoin markets? An empirical investigation into the fundamental value of Bitcoin. *Economics Letters*, 130, 32–36. https://doi. org/10.1016/j.econlet.2015.02.029

- Colbert, A., Yee, N., & George, G. (2016). The digital workforce and the work place of the future. Academy of Management Journal, 59(3). https://doi.org/10.5465/amj.2016.4003
- Crow, K., & Ostroff, C. (2021). Beeple NFT fetches record-breaking \$69 million in Christies sale. *Wall Street Journal*. www.wsj.com/articles/beeple-nft-fetches-record-breaking-69-million-in-christies-sale-11615477732?reflink=desktopwebshare\_permalink
- De Groen, W. P., Lenaerts, K., Bosc, R., & Paquier, F. (2017, August). Impact of digitalisation and the on-demand economy on labour markets and the consequences for employment and industrial relations. Final Study. *CEPS Special Report*. http://aei.pitt. edu/88531/1/EESC\_Digitalisation.pdf
- Degryse, C. (2016). Digitalisation of the economy and its impact on labour markets. (Working Paper 2016.02). ETUI. www.etui.org/Publications2/Working-Papers/Digitalisation-ofthe-economy-and-its-impact-on-labour-markets
- Diab-Bahman, R., & Al-Enzi, A. (2020). The impact of COVID-19 pandemic on conventional work settings, *International Journal of Sociology and Social Policy*, 40(9/10), 909–927. https://doi.org/10.1108/IJSSP-07-2020-0262
- Donovan, S. H., Bradley, D. H., & Shimabukuro. (2016, February 5). What does the Gig economy mens for workers? Congressional Research Service. http://bit.ly/29svwkT
- Dosi, G., Piva, M., Virgillito, M. E., & Vivarelli, M. (2021). Embodied and disembodied technological change: The sectoral patterns of job-creation and job-destruction. *Research Policy*, 50(4). https://doi.org/10.1016/j.respol.2021.104199
- Dowling, M. (2021a). Is non-fungible token pricing driven by cryptocurrencies? *Finance Research Letters*, 102097. https://doi.org/10.1016/j.frl.2021.102097
- Dowling, M. (2021b). Fertile LAND: Pricing non-fungible tokens. Finance Research Letters. https://doi.org/10.1016/j.frl.2021.102096
- Florida, R. (2019). The rise of the creative class. Basic Books. ISBN: 978-1541617742
- Höhne, K., Krebs, D., & Kühnel, S.-M. (2021). Measurement properties of completely and end labeled unipolar and bipolar scales in Likert-type questions on income (in)equality. *Social Science Research*, 102544. https://doi.org/10.1016/j.ssresearch.2021.102544
- Huws, U. (2014). Labor in the global digital economy. The cybertariat comes of age. Monthly Review Press. ISBN: 9781583674635
- Kässi, O., & Lehdonvirta, V. (2018). Online labour index: Measuring the online gig economy for policy and research. *Technological Forecasting and Social Change*, 137, 241–248. https://doi.org/10.1016/j.techfore.2018.07.056
- Lisi, A., De Salve, A., Mori, P., Ricci, L., & Fabrizi, S. (2021). Rewarding reviews with tokens: An Ethereum-based approach. *Future Generation Computer Systems*, 120, 36–54. ISSN 0167–739X. https://doi.org/10.1016/j.future.2021.02.003
- Marchewka-Bartkowiak, K., & Nowak, K. (2020). Get tokenized . . . The specificity of personal tokens in the context of tokenization and axiological categorization [Proceedings]. Proceedings of the 3rd International Conference on Economics and Social Sciences, Sciendo, 823–831. https://doi.org/10.2478/9788366675162–081
- Marchewka-Bartkowiak, K., Nowak, K., & Litwiński, M. (2022). Digital valuation of personality using personal tokens. *Electronic Markets*. https://doi.org/10.1007/s12525-022-00562-y
- Masood, Z., Damian, D., & Blincoe, K. (2022). How New Zealand software companies are adapting work settings with changing times. *IEEE Software*, 39(3), 77–84. https://doi. org/10.1109/MS.2021.3129066.
- Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Markets in Crypto-assets, and amending Directive (EU) 2019/1937 (COM(2020)593.

- Ralph, P., Baltes, S., Adisaputri, G., Torkar, R., Kolvalenko, V., Kalinowski, M., Novielli, N., Yoo, S., Devroey, X., Tan, X., Zhou, M., Turhan, B., Hoda, R., Hata, H., Robles, G., Fard, A. M., & Alkadhi, R. (2020). Pandemic programming. *Empirical Software Engineering*, 25, 4927–4961. https://doi.org/10.1007/s10664-020-09875-y
- Ros, M., Schwartz, S. H., & Surkiss, S. (1999). Basic individual values, work values, and the meaning of work. *Applied Psychology: An International Review*, 48(I), 49–71, https://doi. org/10.1080/026999499377664
- Schroeder, A. N., Bricka, T. M., & Whitaker, J. H. (2021). Work design in a digitized gig economy. *Human Resource Management Review*, 31. https://doi.org/10.1016/j.hrmr.2019. 100692
- Tapscott, D., & Wiliams, A. (2006). Wikinomics. How mass collaboration changes everything. Port-folio, Penguin Group.
- Torpey, E., & Hogan, A. (2016). Working in a gig economy. *BLS.gov.* www.bls.gov/career outlook/2016/article/what-is-the-gig-economy.htm
- Urquhart, A. (2016). The inefficiency of Bitcoin. *Economics Letters*, 148, 80–82. https://doi. org/10.1016/j.econlet.2016.09.019

### **APPENDIX**

All tables can be found under the link: https://zenodo.org/record/6595534#. YzP2k7TP1nJ

Class of services	Examples of provided services
Professional services – P	Accounting
	Consulting
	Financial planning
	Legal services
	Human resources
	Project management
Clerical and data entry - CD	Customer service
	Data entry
	Transcription
	Tech support
	Web research
	Virtual assistant
Creative and multimedia - CM	Animation
	Architechture
	Audio
	Logo design
	Photography
	Presentations
	Video production
	Voide acting

**TABLE 12.6** Classification of services provided by personal token issuers, according to Kässi and Lehdonvirta (2018)

(Continued)

Class of services	Examples of provided services		
Sales and marketing support - SM	Ad posting		
	Lead generation		
	Search engine optimisation		
	Telemarketing		
Software development and technology - ST	Data science		
	Game development		
	Mobile development		
	QA and testing		
	Server maintenance		
	Software development		
	Web development		
	Web scraping		
Writing and translation - WT	Academic writing		
	Article writing		
	Copywriting		
	Creative writing		
	Technical writing		
	Translation		

Source: Kässi and Lehdonvirta (2018).

<b>TABLE 12.7</b>	Type of services,	according to	classification by	y Kässi and Lehdonvirta
-------------------	-------------------	--------------	-------------------	-------------------------

Class of services	Number of cases	Percentage
Professional services	63	37.06%
Creative and multimedia	30	17.65%
Software development and technology	27	15.88%
Clerical and data entry	22	12.94%
Sales and marketing support	5	2.94%
Writing and translation	2	1.18%
Other	21	12.35%
Total	170	100%

Source: Own calculations based on data from PT platform.

Token name	Class of services
RAF	Financial/Economic F/E
DJM	Financial/Economic F/E
AWA	Financial/Economic F/E
RL	Financial/Economic F/E
MAZAK	Financial/Economic F/E
FK	Financial/Economic F/E
SKM	Financial/Economic F/E
VIP	Financial/Economic F/E

TABLE 12.8 Type of services provided by analysed 45 token issuers

(Continued)

Token name	Class of services
BEN	Social (community services) – S
ARTCOIN	Social (community services) – S
ZIBICOIN	Social (community services) - S
LSZ	Social (community services) – S
PAGEMAN	Social (community services) – S
PP	Social (community services) - S
POKATO	Social (community services) – S
DDT	Social (community services) – S
MEGA	Social (community services) - S
CYRIL	Social (community services) – S
SJW	Social (community services) - S
MTK	Social (community services) – S
POL	Social (community services) - S
MAC	Social (community services) - S
MH	Social (community services) – S
KRC	Social (community services) – S
SZUSTER	Social (community services) – S
GAB	Social (community services) – S
BOR	Social (community services) – S
SMIM	Social (community services) – S
CNSL	Social (community services) – S
JKCOIN	Technology – T
DEX	Technology – T
FULOFMO	Technology – T
GREG	Technology – T
CHAR	Technology – T
SECUREMB	Technology – T
HGT	Technology – T
SQL	Technology – T
ZBL	Technology – T
KGAJ	Technology – T
RSPT	Technology – T
RAW	Technology – T
SWADER	Technology – T
KERMAN	Technology – T
ASTO	Technology – T
MACK	Technology – T

TABLE 12.8 (Continued)

Source: Own calculations based on data from PT platform.

TABLE 12.9 Valuation of services and basic information on personal tokens

Token name	Number of months from PT issue	PT price [USD]	Number of PT/1 work hour	USD/1 work hour
VIP	34	0.000554	70,000	38.78
MTK	34	0.000044	10,000	0.44

(Continued)

Token name	Number of months from PT issue	PT price [USD]	Number of PT/1 work hour	USD/1 work hour
BOR	35	0.009116	10,000	91.16
KERMAN	14	0.105116	7,500	788.37
CHAR	28	0.000466	6000	2.80
ZIBICOIN	32	0.000068	5000	0.34
GREG	34	0.250254	5000	1,251.27
FK	34	1.934937	5000	9,674.69
SKM	28	0.108603	5000	543.02
SWADER	33	0.000088	5000	0.44
SMIM	1	0.000093	4000	0.37
RAF	26	0.000266	3000	0.80
AWA	26	0.022151	3000	66.45
MEGA	27	0.000044	2500	0.11
FULOFMO	34	0.000091	2000	0.18
PAGEMAN	32	0.025276	2000	50.55
POKATO	35	0.020535	2000	41.07
DJM	29	0.147357	1200	176.83
JKCOIN	34	0.028854	1000	28.85
BEN	35	0.025276	1000	25.28
DDT	34	0.02735	1000	27.35
CYRIL	10	0.003351	1000	3.35
HGT	34	0.000066	1000	0.07
sjw	24	0.000532	1000	0.53
ZBL	13	0.000066	1000	0.07
KRC	33	0.005987	1000	5.99
RAW	18	0.000433	1000	0.43
MH	34	0.250254	800	200.20
MAC	32	0.00098	600	0,59
MAZAK	29	0.000088	500	0.04
POL	27	0.000066	500	0.03
SZUSTER	32	0.000022	400	0.01
RSPT	34	0.002279	400	0.91
KGAJ	34	0.250254	350	87.59
LSZ	35	0.009876	300	2.96
SQL	29	0.000621	200	0.12
GAB	25	0.000421	200	0.08
RL	35	0.012451	151	1.88
DEX	35	0.009876	100	0.99
ARTCOIN	34	0.00011	100	0.01
PP	34	0.020535	100	2.05
SECUREMB	34	0.00364	100	0.36
MACK	34	0.000113	100	0.01
ASTO	1	0.000023	3	0.00
CNSL	17	310.7645	1	310.76

Individual Work Pricing by NFT Gig Tokens 267

\* PT prices as on 30th June 2021

Source: Own calculations based on data from PT platform.

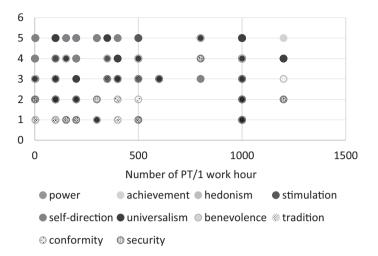
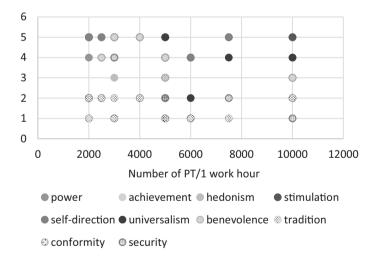


FIGURE 12.4 Market price per 1 hour of individual work of PT owners and network (axiological) valuation (in a range from 1 PT/1 work hour to 1,200 PT/1 work hour)

Source: Own elaboration based on data from PT platform.



- FIGURE 12.5 Market price per 1 hour of individual work of PT owners and network (axiological) valuation (in a range from 2,000 PT/1 work hour to 10,000 PT/1 work hour)\*
- ★ For a clearer graphical presentation, the figure does not include the case with highest price per token VIP tokens (70,000 tokens per 1 work hour).

Source: Own elaboration based on data from PT platform.