Keeping up with Industry 4.0: An Analysis of Sharing Economy's Implications on Philippine Political Economy

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Abstract

Philippine firms are optimistic about the opportunities presented by Industry 4.0 but only 27 percent can keep up with the changing technological landscape due to high fixed-capital and licensing costs. The World Economic Forum's 2018 Readiness Assessment underscores that the country has a strong production base for Fourth Industrial Revolution-related activities but is perennially challenged by weak institutional framework, inadequate technology platforms, and insufficient human capital. The government responded through key Industry 4.0-related policies and plans such as the Comprehensive National Industrial Strategy and Inclusive Innovation Industrial Strategy, National Technical Education and Skills Development Plan (2018–2022), and Science for Change Program. Despite this stride, the country is still perennially beset by issues of poverty, corruption, and wealth inequality. Hence, the introduction of the sharing economy (SE) in the Philippines may be taken as a welcome development given the current state of the country's political economy. Using a descriptive-exploratory approach, this study generated two key findings: (1) the tenets of the liberal perspective are the same forces that continuously underpin the emergence of Industry 4.0 and SE but few deviations can be observed; and (2) SE is expected to further empower Filipino individuals through introducing new means of carrying out production and consumption-related tasks but a proactive regulatory agency is necessary to ensure inclusive growth; and. This study concludes that embodiment of adaptive agility by Philippine government is a key element in effectively competing in an environment increasingly being driven by unprecedented ideas and never-before-seen technologies.

Keywords: sharing economy, political economy, Fourth Industrial Revolution (Industry 4.0), development, globalization

Introduction

The advent of Fourth Industrial Revolution (Industry 4.0) in various parts of the world attests to the countries' increasing recognition of the need to adapt to a digital environment that is underpinned by a wide spectrum of novel technologies encompassing physical, biological, and digital spheres; thus affecting all sectors, actors, and aspects of life (Schwab, 2015). Industry 4.0 is exemplified by advanced technologies such as internet of things (IoT), artificial intelligence, cloud computing, big data and analytics, augmented reality, among others that have substantially transformed how businesses, organizations, and people operate and co-exist simultaneously. The Fourth Industrial Revolution present massive opportunities such as greater connectivity, improved efficiency and productivity, and possible regeneration of resources, but Schwab (2015) warns that unhindered technological advancements may leave firms and governments behind, generate unique security concerns, perpetuate more inequality, and catalyze the fragmentation of societies.

Notably, the rise of unprecedented cyber-physical systems prompts corporations and industries to fundamentally reforge their values and identities. Christensen, Raynor, and McDonald (2015) refers to this as disruptive innovations because of their ability to extensively shape economy and society. McKinsey Global Institute (2013) lists several potential disruptive technologies including mobile internet, IoT, advanced robotics, 3D printing, cloud technologies, and next generation genomics, among others. Interestingly, the emergence of the sharing economy (SE) may be considered as an actualization of the disruptive innovations. SE has been described as *"organized interactions in which individuals or entities exchange with others the untapped "surplus" or "idle"* capacity of their assets, typically for some form of payment or service" (World Economic Forum, 2017, p. 6).

Bannered by the likes of Uber, Airbnb, TaskRabbit, Amazon, Alibaba, and Lazada, SE has gained momentum among policy circles and economic agents due to its far-reaching implications to socio-economic policy, business landscape, and dynamics of a society (World Economic Forum, 2017). More importantly, SE has been continuously moving to the mainstream discourse because of its potential to level the playing field and open new market segments and opportunities for all players. Hence, this topic is projected to slowly embed itself within development circles and the subject of political economy.

In the Philippines' case, local firms are optimistic about the opportunities presented by Industry 4.0 but only 27 percent can keep up with the changing technological landscape due to high fixed-capital and licensing costs (ILO, 2017). The World Economic Forum's (WEF) (2018) Readiness Assessment underscores that the country has a strong production base for Fourth Industrial Revolution-related activities but is perennially challenged by weak institutional framework, inadequate technology platforms, and insufficient human capital. Another assessment by United States Agency for International

Development - Science, Technology, Research and Innovation for Development (USAID-STRIDE, 2019) finds that the Philippine innovation ecosystem suffers in three main areas, namely, education and human capital (e.g., reducing barriers to participation), research and knowledge (e.g., research and development investments and mechanisms), and enabling environment (e.g., burdensome procurement regulations).

In response to the cited challenges, the government has crafted and implemented key Industry 4.0-related policies and plans such as the Comprehensive National Industrial Strategy and Inclusive Innovation Industrial Strategy, National Technical Education and Skills Development Plan (2018–2022), Science for Change Program, National Broadband Strategy, and ICT Ecosystem Development (Asian Development Bank, 2021). It has also partnered with the private sector and the academe to launch programs and projects encompassing automated traffic management, electric vehicles, pilot factory, artificial intelligence, and skills upgrading. These efforts have contributed to the country's impressive performance in the Global Innovation Index (GII), after ranking 54th out of 129 economies in 2019. It placed 100th in the 2014 GII (Cornell University, INSEAD & WIPO, 2019).

Despite these achievements, around 17.7 million Filipinos or 16.7 percent of the population still experienced poverty in 2018 (Philippine Statistics Authority, 2020). The COVID-19 pandemic is projected to adversely impact poverty incidence, unemployment levels, and external debt due to business closures and job losses. Further, there was considerable wealth inequality among the population as it registered a 0.42 (or 42.3 percent) Gini coefficient in 2018 (World Bank, n.d.). The country has yet to improve its performance in corruption mitigation since 2012, as illustrated by ranking 115th out of 180 countries in the 2020 Corruption Perceptions Index (Transparency International, n.d).

Previous administrations have tried to address these development-related problems through their centerpiece projects such as the conditional cash transfer program, globalization of micro, small, and medium-sized enterprises (MSMEs), free tertiary education in state universities and colleges and free medicines for indigents, and the Ease of Doing Business Act (Katigbak, 2018). Nevertheless, much is to be done in fostering a political-economy landscape that is conducive for all participants to effectively realize a broad-based, people-centered, sustainable growth of the Philippine economy.

Indeed, the ability of the SE to redistribute idle capacity of assets and access to resources via digital platforms presents opportunities for the government as it seeks to open avenues of participation for all actors, especially MSMEs. The country has welcomed various SE platforms and firms but their effect on the former's political economy is yet to be explored. The SE is likewise an interesting subject in the study of political economy. Thus, this paper seeks to answer the inquiry, "*How has sharing economy impacted the current state of the Philippine political economy?*" The significance of this study lies in its effort to effectively accomplish two things: 1) identify the potential impacts of SE on the country's politico-economic system; and 2) provide fresh insights on the study of political economy set in the context of Industry 4.0.

Objectives of the Study

This paper aims to examine the implications of sharing economy (SE) on the structure and dynamics of the Philippine political economy as well as the former's similarities and deviations vis-à-vis the liberal perspective. Along with the overarching objective, this study seeks to attain five major purposes, namely: (1) describe the Fourth Industrial Revolution and the sharing economy; (2) review the state of Philippine political economy from 1986 until the present; (3) identify the similarities and differences between liberalism and sharing economy; (4) discuss the nature of SE in the country; and (5) examine the implications of SE on Philippine political economy.

Literature review

This section is sub-divided into three parts, namely: 1) revisiting the liberal perspective; 2) a new breed indeed: describing industry 4.0 and the sharing economy; and 3) who controls what? An overview of Philippine political economy (1986-present).

Revisiting the Liberal Perspective

Liberalism in international relations is commonly linked with Keohane and Nye's (1987) concept of complex interdependence which posits that states, transnational corporations, and people are engaged in a complex set of relations in a giant web of interdependence. Hence, a fundamental belief held by liberal theorists is the cooperative nature of the world system wherein actors pursue a positive-sum game that tends to benefit all entities (O'Brien and Williams, 2010). They stressed that liberals condemn protectionist policies as these contribute to future conflicts, whereas an open and more interconnected system would foster peace and prosperity. Even though liberalism view states as not unitary actors, the former still regards the latter as rational and will enact policies and strategies that will best enhance their absolute wealth.

In (international) political economy, the origins of liberalism can be traced from the Enlightenment thinkers of the 18th- and 19^{th}-century Britain (O'Brien and Williams, 2010). During the era of classical liberalism, theorists emphasized the notion that society is made up of rational and self-interested individuals who seek to maximize wealth and accumulate capital (Clark, 1998). Thomas Hobbes claimed that the quest for private interests is the sole objective of human existence hence putting the society and government at the backseat as secondary and unnatural features (Clark, 1998). Nonetheless, Hobbes (1651) contended that these individuals would voluntarily form a "social contract" with others to institute a government possessing absolute authority to introduce and enforce laws. John Locke followed Hobbes' intellectual footsteps and asserted the inviolability of property rights thereby making them natural; thus governments must safeguard those natural rights (Clark, 1998). The prominence of Adam Smith brought laissez-faire economics to the fore and further advanced the principles of individualism, free market, and non-interference by the government (Clark, 1998). He urged governments to focus on the provision of public goods such as infrastructure, printing of money, and law enforcement. David Ricardo is also credited for proposing the theory of comparative advantage which postulates that every nation may benefit from free trade by pursuing specialization (O'Brien and Williams, 2010). Other classical liberals that have written and theorized extensively on the nature of individuals, justice, and the role of government include Thomas Malthus, Friedrich Hayek, and Robert Nozick (Clark, 1998).

The Great Depression of the 1930s shook classical liberalism at its core by convincing a large number of states that the free market is unable to manage economic activities on its own hence government must be brought back in. What emerged from this event was the modern liberal perspective which likewise took stock of radical and conservative ideas. Jeremy Bentham was responsible for underlining the nature of individuals as utility-maximizers and called for government intervention to promote the welfare of the greatest number of people in a society (Clark, 1998). Consequently, Thomas Hill Green reconfigured some of the pillars of classical liberalism. He argued that individuals are out to fulfill certain self-images thus the need to ensure positive freedom. Green believed the redistribution of wealth by the government should be based on the property rights' contribution to positive freedom (Clark, 1998). John Maynard Keynes is another prominent figure in modern liberalism due to his work on demand management theory which accentuates the role of the state in stimulating economy activity to address the problem of unemployment. John Stuart Mill, Alfred Marshall, and John Rawls are also labeled as modern liberals.

Modern liberalism enjoyed its heydays until the early-1970s and experienced declining support due to several factors. Taking the cudgels was the neo-liberal perspective which took off in the 1980s and 1990s and currently dominate the global economic thinking and system. The term "Washington Consensus" which was associated with the restructuring policies of the International Monetary Fund (IMF) and the World Bank (WB) became synonymous with neoliberalism as it mandated states to practice fiscal austerity and to deepen economic liberalization through privatization, deregulation, trade and investment liberalization, and competitive exchange rates (Williamson, 2004). For Gill (1994) however, neo-liberalism has enabled large, transnational, oligopolistic companies and major capitalist states to direct the trajectory of globalization. The global political initiative of warranting increased freedom of market forces as evidenced by greater movement of factors of production and finance has led to a decline in economic sovereignty of states as well as reduced involvement of governments in providing social services (Gill, 1994). Gill (1994) noted the proliferation of "competition states" which sought to aggressively attract foreign investments and to retain skills and technologies within their borders, even if it means resorting to "race to the bottom policies".

A New Breed Indeed: Describing Industry 4.0 and the Sharing Economy

Schwab (2015) notes that the Fourth Industrial Revolution (Industry 4.0) can be aptly portrayed as a technological revolution that blurs the delineations and boundaries between the physical, biological, and digital worlds. The unfettered velocity, extensive networks, and profound impacts brought by the present technological breakthroughs are poised to transform how people, firms, industries, and governments produce goods and services, manage resources, and exercise governance (Schwab, 2015). The advancements in areas such as the Internet of Things, robotics, 3-D printing, artificial intelligence, quantum computing, nanotechnology, energy storage, biotechnology, and materials science are perceived as accelerators of the mentioned changes. While Industry 4.0 offers massive opportunities in terms of greater connectivity, improved efficiency and productivity, and possible regeneration of resources, Schwab (2015) also cautions that the rapid technological revolution may leave firms and governments behind, generate unique security concerns, perpetuate more inequality, and catalyze the fragmentation of societies. European countries such as France, Germany, the Netherlands, among others, have already adopted national Industry 4.0 policies to keep in step with the recent developments in an increasingly digital world (European Commission, 2017). In Asia, Singapore and Malaysia have taken the lead in crafting their respective national strategies that revolve around the potentials and perils of Industry 4.0 (Raman, 2017; Bernama, 2018).

Moreover, crucial to understanding the Industry 4.0 is the concept of disruptive innovations. This occurs when smaller businesses with fewer resources focus on delivering enhanced products and/or services to customers in low-end markets and eventually move up to the higher-end of market segments thereby challenging established competitors (Christensen, Raynor, and McDonald, 2015). The disruption is completed when entrants finally displace the incumbents. A concrete manifestation of this concept is the emergence of the sharing economy (SE) bannered by the likes of Uber, Airbnb, TaskRabbit, Amazon, Alibaba, and Lazada. Undoubtedly, the said subject has gained momentum among policy circles and economic agents due to its far-reaching implications to socio-economic policy, business landscape, and dynamics of a society (WEF, 2017). SE is projected to expand from just USD14 billion in 2013 to USD335 billion by 2025 (PricewaterhouseCoopers, 2014). Moreover, the SE sectors are forecasted to grow by an average of 34 percent over the mentioned period, which is quite enormous when compared to the growth rate of traditional rental sectors which is at 1.8 percent. Petropoulos (2017) identified accommodation, transportation, online labor markets, and finance as the leading sectors of SE.

Despite the lack of a universally-agreed definition of the term, SE can be described as a "*web of markets in which individuals use various forms of compensation to transact the redistribution of and access to resources, mediated by a digital platform operated by an organization*" (Mair and Reischauer, 2017, p.12). For Schor (2014), activities under the said economy can be classified into four groups, namely, recirculation of goods, greater use of durable assets, exchange of services, and sharing of productive assets. The WEF (2017) highlights that there are three distinguishing features of SE, namely, online platforms and/or marketplaces that match buyers and sellers, taking advantage of the spare capacity, and the existence of trust-verification mechanisms. The rise of a wide range of novel business models has also led to the association of the term "sharing economy" with concepts such as "collaborative consumption", "collaborative economy", "peer-to-peer economy", "gig-economy", "crowd economy", and "on-demand economy" (WEF, 2017).

Mair and Reischauer (2017) explained the convergence and divergence between traditional economy and the sharing economy. Accordingly, both economies have markets as their transaction locus with individuals acting as transaction partners. The traditional economy also incorporates organizations as vital transaction partners in the process. In terms of focus, individuals and firms in the traditional economy are engaged primarily on production, distribution of, and access to resources while the SE zooms in on the redistribution of and access to resources. Distribution channels between individuals and organizations are established in the traditional economy and digital platforms run by organizations are existent in both economies. A key difference is the mode of compensation as the traditional economy employs one method which is through payment while SE utilizes various mechanisms such as bartering, trading, gift giving, and payment (Mair and Reischauer, 2017).

In terms of actors, the SE pay hosts to an array of entities which include individual users of goods and services, for-profit enterprises, social enterprises/cooperatives, non-profit enterprises, local communities and/or cities, and the public sector (WEF, 2017). The gains that mobilize these actors into conducting SE-oriented activities cover economic, social, and environmental dimensions. In particular, economic benefits include employment generation, additional sources of revenue, access to high quality of goods and services at a cheaper rate than ownership, and opening up of new market segments. These are expected to positively contribute the economic growth of countries that have capitalized on SE. The cited economy is likewise being tapped for effectively building social capital and for promoting sustainable consumption patterns (WEF, 2017).

Conversely, there are also attendant issues and challenges brought by the adoption of SE. Major areas of contestation include establishing trust and safeguarding the safety and security of actors from physical, reputation, platform, supply, and regulatory risks (WEF, 2017). Furthermore, the threat of social inequality may also be perpetuated in SE as participants experience racial discrimination (cases were reported in Uber and Airbnb) and wider income inequality (i.e., in the United States). The digital divide is then perceived to exacerbate the exclusive nature of many SE platforms (WEF, 2017). Equally significant issues that must be addressed by the concerned actors are the alignment of SE-oriented activities towards more socially-driven objectives and the cultivation of transparency and accountability in collective/collaborative governance.

How does the SE disrupt the roles of actors in the traditional economy? Murillo, Buckland, and Val (2017) compiled a list of controversies that go against the main propositions of the SE movement. They stress that the presence of a handful of dominant intermediaries exacerbate the unequal distribution of wealth and income, hence contradicting the assumption that SE is a flat, democratic, and beneficial system. Katz (2015) contends that firms engaged in SE are likewise similar to any other segment of the economy as they are motivated to eradicate competition and monopolize markets. Murillo, Buckland, and Val (2017) further pointed out that the mentioned economy has prompted traditional companies to either adapt novel strategies or risk losing their current market share. Botsman (2015) and Cusumano (2015) observed that traditional businesses have ventured into investment, development, acquisition, and sponsorship and partnership of new hybrid models (e.g., BMW and Peugeot has already launched car pool services).

Another critical topic for discussion is the role of the state vis-à-vis the SE. Murillo, Buckland, and Val (2017) underscored that the mentioned economy has resulted in individual empowerment and a move towards more decentralized, self-regulating markets. The essence of a retreating government is encapsulated by Cannon and Summers' (2014) assertion that regulation appears to be the top impediment to the growth of SE firms and that enterprises must employ an offensive approach towards regulators. Due to the novelty of SE along with outdated regulations, the operations and fiscal obligations of firms involved in such market are not properly monitored (Murillo, Buckland, and Val, 2017). The issue of taxation therefore comes to the fore (Duhigg and Kocieniewski, 2012). Other issues surrounding the SE include the veracity of online reputation, privacy of data, and the psychological disposition of users (Murillo, Buckland, and Val, 2017).

Who Controls What? An Overview of Philippine Political Economy (1986-present)

Terms associated with Philippine politics include cacique democracy, booty capitalism, anarchy of families, ersatz capitalism, and non-substantive democracy, among others (Magcamit, 2016). Quimpo (2005) disputed the accuracy of these terms and referred to Philippine politics as a 'contested democracy' wherein the struggle for hierarchical structures is undertaken by two main factions: 1) oligarchs and bosses comprising the elite democracy; and 2) people's organizations, non-governmental organizations, and opposition parties making up the democracy from below.

For Hutchcroft and Rocamora (2003), the institutional deficiencies of the Philippine democracy are rooted from the innovations introduced during the American colonial era which have resulted in the exclusion of the masses and elite primacy over democratic institutions, an overreaching presidency, and the ascendancy of patronage politics as the foundation of political parties. Moreover, the installation of a national oligarchy – instead of a national government – has forced voters to elect into office their respective patrons in exchange for personal favors that were already provided and/or promised to be granted once put into power (Manacsa and Tan, 2012).

Bello et al. (2004) contended that since the overthrow of the dictatorship of Ferdinand Marcos in 1986, no fundamental changes took place in the country's political economy over two decades. He adds that the "political economy of permanent crisis" in the Philippines is caused by a combination of various factors such as the inability of previous administrations to enforce a truly impactful agrarian reform, past presidencies decision to overwhelmingly service foreign debt obligations, and the dominance of neo-liberal ideology among policy makers that was embodied by unilateral liberalization and entry into the World Trade Organization (WTO).

Consequently, Magcamit (2016) reviewed in detail the prominence of patrimonial administrations and patronage-backed presidencies from the Corazon Aquino administration until the Benigno Aquino III government. The re-democratization of the nation under President Aquino is supposed to mark a new chapter for Philippine politics. However, Manacsa and Tan (2012) observed the effort of laying the groundwork for a development state in the country was hampered by two aspects of the political system, namely, the plurality voting method which hindered the sufficient constituency from citizens, and the lack of provision in the 1987 Philippine Constitution of the creation of ideology-based political parties. The inability of the Aquino-led government to enact a land reform program and the anti-dynasty law left old patronage politics unchecked (Magcamit, 2016).

The Ramos presidency (1992-1998) sought to nurture a "Strong Republic" and hired revisionist political leaders to achieve a market that is free from oligarchic control and interests. However, the said administration eventually embodied traditional political practices and customs to further his political agenda (Magcamit, 2016). The 1997 Asian Financial Crisis dealt a crushing blow to the neo-liberal pronouncements of the Ramos presidency as it exposed the country to erratic flows of capital. The succeeding Joseph Estrada administration (1998-2001) banked on a pseudo-populist support from the masses but the president decided to foster a "padrino system", which is characterized by the involvement of Estrada's closest allies and relatives as his official cabinet members and de facto advisers. A culture of corruption caused Estrada's ouster from office.

Subsequently, the Gloria Macapagal-Arroyo (2001-2010) presidency is considered as one of the most corrupt presidents, next to President Ferdinand Marcos, in Philippine history (Magcamit, 2016).

Her pledge to convert the country's personality-based politics towards one that is founded on genuine party programs and increased participation of ordinary citizens went to naught as she wisely utilized her position to strengthen the existing patron-client relationships. Traditional politicians were able to pursue their predatory objectives and this resulted in elevated repression of civil society organizations and media, weak rule of law, rigged elections, and greater military influence in politico-economic affairs (Magcamit, 2016). Lastly, the Benigno Aquino III (2010-2016) administration was able to deliver some surprises as the country's economy expanded continuously and corrupt personalities were persecuted. In spite of these achievements, Magcamit (2016) argues that oligarchs successfully practiced patronage politics within the Aquino III administration.

The ascension of President Rodrigo Duterte into power in June 2016 appears to signal a heightened role for the government in attaining development objectives. His administration's commitment to guiding the nation towards its "golden age of infrastructure" along with providing more basic social services for Filipinos seem to draw a semblance of parallelism to a welfare state. On the flip side, President Duterte is ostracized for spearheading a brutal "War on Drugs" and for accommodating the demands and interests of some oligarchs and even top drug personalities. The current administration is also tasked with resolving essential socio-economic problems of poverty, inequality, and corruption.

Methodology

This research can be classified as descriptive-exploratory. It characterizes the actors, dynamics, and tenets associated with the sharing economy (SE) and liberalism. The state of SE in the Philippines is also described. This research mainly utilizes a qualitative approach to ascertain the impact of SE on Philippine political economy and on the study of political economy. The main method for data gathering is secondary research which involves review of related literature and content analysis. It uses secondary sources such as books, journals, news articles, data from research studies, and institutional reports that features discussions and analysis on SE in the Philippines. These materials are to be gathered through formal requests, visits to an organization's website, and/or internet downloads. Given the novelty of the phenomenon being analyzed and the dearth in literature, this study is exploratory in nature as it tries to gain valuable insights and familiarity with the said topic.

The collected data were scrutinized to underline common themes and other patterns that describe the topic being studied. A synthesis of the study was then formed to elucidate a better understanding of the implications of SE on Philippine political economy. Another synthesis was also developed to shed light on the similarities and differences between SE and liberalism.

Findings and discussion

This section contains three sub-portions, namely: 1) two sides of the same coin? Sharing economy vis-à-vis liberalism; 2) characterizing sharing economy in the Philippines; and 3) implications of sharing economy on Philippine political economy.

Two Sides of the Same Coin? Sharing Economy vis-à-vis Liberalism

Similarities between the sharing economy and the liberal perspective can be deduced from the previous portions of this paper. Evidently, the underlying elements of the liberal perspective are the same forces that catalyzed and underpin the rise of Fourth Industrial Revolution (Industry 4.0) and the sharing economy (SE). More particularly, both subjects view the individuals as key economic actor that is self-interested, rational, and utility maximizer. This is demonstrated through consumers, sellers, and intermediaries using various sharing platforms, especially online marketplaces such as Amazon and Alibaba, to enhance their incomes. The said economy is likewise parallel to liberalism as it promotes the maximization and efficiency of economic activity and exchange by mobilizing "*untapped "surplus" or "idle" capacity of their assets*" (World Economic Forum, 2017, p. 6).

In addition, both perceive transnational corporations (TNCs) as a beneficial partner in distributing material wealth in different parts of the world. The presence of Uber, Amazon, Lazada, to name a few, across the globe reflects many governments' recognition of these TNCs as a viable partner in sustaining economic expansion. Identical to the liberal perspective, free market is central to the dynamics of SE. The current overall state of SE also seems to suggest that it is more attuned to the principles of Friedrich Hayek as it shuns government intervention. The essence of a retreating government is encapsulated by Cannon and Summers' (2014) assertion that regulation appears to be the top impediment to the growth of SE firms and that enterprises must employ an offensive approach towards regulators.

Notably, SE deviates from the liberal perspective in two aspects. First, SE incorporates a sustainability principle as initiatives tend to pursue non-economic objectives such as social and/or environmental purposes, either explicitly or implicitly, mostly through community-based sharing initiatives. This move to incorporate a more comprehensive approach towards growth can be credited to the emergence of sustainable development as a central concept to the current understanding and practice of development. Lastly, a unique characteristic of the SE is the role played by TNCs and homegrown firms in redistributing and increasing access to resources even without formal ownership. Accordingly, modern liberals believe that it is the government's duty to enforce redistribution measures which will benefit the disadvantaged and marginalized groups in the society. Instead, what the SE is doing is enabling businesses to play a direct role in facilitating the transfer of physical assets and human capital from an area where both are abundant towards a location where they are needed. However, the possession of mobile devices, internet connectivity, and the ability to navigate specific features will remain essential factors in determining the effectiveness of many SE platforms.

SE likewise offers fresh insights on the possible direction of the study of political economy. Scholars and practitioners describe TNCs as bearer of new technologies, managerial skills, and capital. However, the cases of Uber, Airbnb, and Alibaba demonstrate the fact that multinational corporations can extensively expand their networks across the globe even without owning their own products and/or services and by merely acting as platforms/intermediaries for interested sellers and consumers. To illustrate, firms who are engaged in "collaborative", "on-demand", "gig", or "crowd-based" economies capitalize on the abundance of idle assets that are ready to be shared by individuals or organizations in a specific network/market segment.

Next, SE challenges the established distinction between production and consumption of resources as empowered individuals can now conveniently interchange between the two roles or fulfill both functions simultaneously. Barnes and Mattsson (2016) call this "prosumption". Lastly, the rise of Industry 4.0, disruptive innovations, and the SE seem to reaffirm the ascent of informational economy as one of the top up-and-coming issues in the field of political economy. What is peculiar to Industry 4.0, including SE, is its pervasive nature which results in the blurring of lines between physical, biological, and digital worlds, and between the public and private spheres.

Characterizing Sharing Economy in the Philippines

Little has been written about sharing economy (SE) in the Philippines. This may be attributed to two reasons: 1) the vagueness of the cited emerging market segment, and 2) the low level of familiarity with SE among policy-makers and local firms, especially MSMEs. Nevertheless, a couple of studies on the level of adoption of SE in the Philippines are worth perusing. The first study refers to the 2014 research by Nielsen which placed the country at the fourth spot globally in terms of readiness to participate in the SE. 85 percent of the Filipino respondents expressed that they are willing to rent products or services from a share community (Nielsen, 2014).

For the second study, Roxas (2016) examined the status of SE in Metro Manila via two sustainability-related frameworks. She found that SE platforms in the country are engaged in eight main sectors, namely, transportation, services, money, goods, space, logistics, food, and learning. The transportation and goods sectors are thriving but around 50 percent of its total platforms have already ceased their operations more likely because of the entrance of other international and regional players. The learning sector also lost its only platform when Khawna exited the market due to insufficient demand for such service. Roxas (2016) likewise discovered that there is low diversity in terms of transaction modes as all require monetary payments, except for Magpalitan which focuses on the swapping of pre-owned goods, and that luxury goods and services have yet to enjoy popularity among platform users. The study then addressed some claims associated with the three aspects of sustainability, namely, economic, social, and environmental. Under the economic facet, SE platforms in Metro Manila are indirectly viewed to stimulate economic activities and open up new economic opportunities and serve as alternative sources of income/funding but not as a total substitute. Further, firms under the transportation, logistics, and food sectors are premised on the provision of more efficient and cheaper products and services while this may not always be the case of the goods and services segments as enterprises offer brand new products or high-quality services. The advancement of human capital is similarly being attained through SE platforms as transportation (i.e., *Beep a Ride*), service (i.e., *Freelancer*), and food (i.e., Plato) sectors promote micro-entrepreneurship and facilitate skills improvement workshops and trainings.

On the matter of social sustainability, Roxas (2016) observes that social connections carried out through the platforms are described as highly superficial since interactions are mostly temporary and do not lead to long-term relationships. The socio-economic profiles of the majority of platform participants are people ages 18 to 34 that are students and young professionals from almost all social classes. Barriers to increased participation include the payment method and the lack of mobile devices and internet connectivity, especially among lower income groups. Philippine businesses likewise pursue various social advocacies (e.g., *Cropital* extends financial assistance to farmers; *The Spark Project* gives support to socially-oriented projects) aside from the obvious economic rationale. Relating to the environmental dimension, it is found that there is the lack of environmental sustainability principle in the core business models of enterprises, notwithstanding several environmental programs.

More importantly, SE in Metro Manila is best categorized as complementary to existing services and not as a direct substitute. Platforms are also able to dodge immediate opposition from incumbent players due to the former's thrust on specific and underserved market segments. The space to further develop their products and services makes the SE more inclined to comply with the traditional market standards rather than underpin sustainable practices. Direct resistance by incumbent firms to SE platforms is generally absent, except in the transportation sector as evidenced by statements of taxi unions and associations against ride-hailing apps such as Uber and Grab. The result was the issuance of a regulation labeling these service providers as Transport Network Companies (TNCs). Nonetheless, Roxas (2016) posits that sharing economy initiatives will enjoy greater support from the Philippine government because of its efficiency- and innovation-oriented effects.

Implications of Sharing Economy on Philippine Political Economy

Highly touted as a viable strategy in leveling the playing field and in opening up new market opportunities, the sharing economy (SE) in the Philippines, appears to indirectly stimulate economic activity but only serves as a source of additional funding for sellers or service providers (Roxas, 2016). Moreover, SE in Metro Manila is positioned as a complementary to existing services hence the pace of its expansion will greatly depend on the economic performance of the primary sectors. The digital divide exacerbates the low level of adoption of the said economy in the Philippines as lower income households and individuals are unable to participate in the digitally-based transactions. In addition, Roxas (2016) highlighted that the present SE initiatives enjoy a conflict-free status with existing industries due to their target market segments. A sector that somehow exhibits vulnerability to disruptive innovation is the transportation sector. Thus, the current dominance of big businesses, which comprises less than 1 percent of all enterprise in the country, is projected to remain in the near- to medium-term. A development that is worth closely monitoring is the buy-in of participants in the objectives and activities of SE platforms.

In terms of its effects on actors, SE is expected to further empower Filipino individuals through introducing new means of carrying out production and consumption-related tasks. The provision of skills training and promotion of micro-entrepreneurship by several platforms may also contribute to the enhancement of level of human capital of the country. Meanwhile, firms are being gradually prompted to adopt strategies that are akin to the dynamics of the sharing economy. They may likewise have to account for the digitization of transactions and processes, flexible work arrangements, ICT-related skills of workers, and the demography of the labor force. The fear of losing out on possible opportunities brought by the Industry 4.0 and the SE and the threat of being replaced by new entrants are other motivations enterprises for aligning several components of their business models.

For the Philippine government, the novelty of SE exposes the regulatory loopholes, especially relating to taxation, inherent in old and outdated legislative measures. The case of the transportation sector portrays the unpreparedness of the government in dealing with innovations that truly disrupt the dynamics of market segments and challenge the dominance of incumbent players. Its response to the issue which came in the form of a regulation which bares restrictive requirements for interested transport network vehicle service (TNVS) and which prioritizes the existing service providers attest to the state's practice of a patron-client relationship with the local transport groups and unions (except for the jeepneys which are the target of an ambitious modernization program by the current administration). Nevertheless, Roxas (2016) is correct in pointing out that the Philippine government is generally supportive of the SE initiatives because of their promise in raising the efficiency and innovative spirit of certain industries and individuals.

It is therefore necessary to ask: *Will there be a change in the government's response when other sectors substantially experience the effects of disruptive innovations?* The answer is quite unclear, but this is an important area to keep track of. Aside from the regulatory concerns, the state is also tasked with establishing protective measures against various risks - physical, reputation, platform, privacy, and supply – for users of the platforms. Finally, SE proffers an opportunity for cities and local government units (LGU) to take the lead in enacting policies which optimizes the utility of resources in sustainable manner.

Conclusion

It is no doubt that the tenets of the liberal perspective are the same forces that continuously underpin the emergence of the Fourth Industrial Revolution (Industry 4.0) and the sharing economy (SE). Alongside its economic, social, and environmental benefits, SE is also viewed as an enabling strategy in leveling the playing field and opening up new market segments and opportunities for all players. For a developing country like the Philippines, the SE serves as a possible shining light in resolving pervasive socio-economic issues of poverty and inequality. However, the evidence suggests that the nation's level of adoption of SE is still at its infant stage due to the novelty of the sector and the lack of awareness of policy-makers and stakeholders. Thus, a collective effort must be undertaken to mainstream the potentials and perils of the said economy.

Looking at the bigger picture, it is without question that the phenomenon of globalization connects more people, economies, and societies. Hence, there is a need to constantly recalibrate political-economic structures, policies and strategies towards local, regional, and international developments. More importantly, the conceptions and perceptions associated with conventional approaches to political economy are bound to be tested and reworked to account for the substantial changes in how individuals, localities, states, the international system, and even online communities and social networks interact and transact towards one another. Indeed, the preceding segments portrays that this is true for the study of political economy, development practice, and the Philippine political economy.

With the SE yet to reach its full swing, it is essential for the Philippines to position itself in a favorable spot to optimize and fully reap the gains of this emerging sector. Indeed, the realization of this objective would entail the government to play different roles simultaneously – regulator, enabler, collaborator, and advocate. As with any development, there will be winners and losers particularly so since novel technologies and techniques revolutionize how firms transact and operate. Hence, it is important to highlight to skeptics and critics that the economy, at all levels, is heading towards an increasingly digital future. Thus, actors with strong sense of agility and adaptive capacity have a higher chance of consistently thriving in an innovation-led, creativity-filled environment. The SE may be an important test for the country in its attempt to fast-track high quality growth and international competitiveness.

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