THE CHALLENGES OF INDUSTRIAL ERA 4.0: A QURANIC PERSPECTIVE

Zamakhsyari bin Hasballah Thaib

Program Studi Pendidikan Agama Islam, Fakultas Agama Islam, Universitas Dharmawangsa, Indonesia

Author's e-mail: dr.zamakhsyari@dharmawangsa.ac.id
Corresponding author: dr.zamakhsyari@dharmawangsa.ac.id

Abstract

This paper discusses the industrial era 4.0 and the various challenges that arise from the perspective of the Quran. The industrial revolution 4.0 was marked by the basis of digitalization in all lines of human life, which then fundamentally changed the way of life, work, and interaction. The concept offered by industry 4.0, of course, is tempting and promising to be applied considering the rapid flow of globalization. As a country with the largest Muslim population in the world, Indonesia in its efforts to enter the industrial era 4.0 is faced with five challenges faced in the industrial era 4.0, namely aspects of knowledge, politics, technology, economy, and social. This is where the need to return to the instructions of the Quran in dealing with the vortex of industrial revolution 4.0. This paper discusses several Quranic perspectives regarding the challenges that arise in the industrial era 4.0, ranging from hoaxes, hate speech, economic inequality to literacy, using the thematic interpretation method. Among the results of this study, the Qur'an provides a very adequate explanation regarding how to deal with changes that occur including the industrial era 4.0, which proves that the Qur'an is relevant for all times and places.

Keywords: *The Challege of industrial Era, Industrial Era 4.0, Quranic Perspective*

INTRODUCTION

Indonesia, as a country with the largest Muslim population in the world, has the vision to be included in the top 10 countries with the strongest economy in the world by 2030, using the term Making Indonesia 4.0 (Venti, 2018: 19).

In general, many countries in the world have entered the industrial era 4.0, an era marked by the basis of digitalization in all sectors of human life. Humans who used to play a vital role in the growth and development of the breath of the economy have been slightly displaced by the digitalization of technology and mechanical automation in driving the pattern of the human economy. (Hendra, 2017: 103).

Technological innovation has scorched several types of jobs. In the next five years, continued Hendra (2017: 103) around 52.6 million types of work will experience a shift or even disappear from the earth's surface. And it is estimated that by 2030 around 800 million jobs worldwide will be lost because they are taken over by robots (Venti, 2018: 20)

We can find automation and digitization of machines around us, for example, toll gates, which used to be filled with smiling people when they wanted to pass through, have now been replaced by machines. Seeing the phenomena and impacts caused by the industrial revolution 4.0, it is necessary to refer to the Quran, which is believed to be the word of God

whose truth-values are universal, the values contained in the Quran can be presented in the era of globalization which is very dynamic, and responds to the complex needs of mankind.

METHODOLOGY

This study is a literature review using the thematic interpretation method. According to Quraish Shihab (1994: 175), the thematic interpretation method was initiated by Ahmad Sayyid al-Kumiy when he was the head of the commentary department of the Faculty of Usuluddin, al-Azhar University. Such a method later became the interest of the reviewers of the Qur'an. In subsequent developments, several commentators emerged who gave the concept of the maudhû'î interpretation method. They included Abdul Hayy al-Farmawi, Mustafa Muslim, M. Quraish Shihab, and others.

According to Al-Farmawi, thematic interpretation is an interpretation that collects verses of the Quran that have the same purpose, in other words, they both discuss one problem topic and arrange them based on chronology and the reason for the revelation of the verse. In this method, an interpreter provides information or clarity and concludes. For example, in a study of alcohol using the thematic interpretation method, an interpreter must first collect all the verses related to alcohol, then arrange them according to chronological order, collect the *asbab nuzul* verses as information and clarity on the verses being discussed, then the interpreter concludes several verses related to wine.

In the context of the theme of the challenge of the industrial revolution 4.0, the definition of industrial revolution 4.0 will be described, then described how its characteristics are, and what are the challenges and problems that arise in this era. Next, the author collects the verses of the Quran related to these problems, then interprets them to provide an overview of the Quranic perspective in responding to these challenges.

RESULTS AND DISCUSSION

The Industrial Revolution 4.0 consists of two words, revolution and industry. In the KBBI, revolution means a radical and sudden change, and industry means the production activity of processing goods by using means and tools. The industrial revolution is a radical and sudden change in the effort to achieve production by using machines, both for processing power and for propulsion. While the number 4.0 is the stage that is passed after the previous 1.0, 2.0 and 3.0

Experts differ in defining this term because it is still in the research and stabilization stage. Angela Merkel, for example, as quoted by Hoedi and Wahyudi (2018: 19) argues that industry 4.0 is a comprehensive transformation of the industrial aspect through integrity between conventional and non-conventional industries. digital technology and the internet, Schelechtendahl et al. emphasize the term on the element of the speed of information availability, the industrial environment where all users can always connect and share information with others.

A more technical definition is stated by Kegerman et al, who continued Hoedi and Wahyudi (2018: 19) that industry 4.0 is the incorporation of Cyber-Physical Systems and the Internet of Things and Services into industrial processes, including logistics and manufacturing and other processes.

The term industry 4.0 was born in Germany in 2011, precisely when the Hannover Fair was held. Germany has a strong ambition to always be at the forefront of the world of manufacturing. Other countries also take part in this global competition but use different terms, such as Smart Factories, Industrial Internet of Things, Advanced Manufacturing, or Smart Factories (Hoedi and Wahyudi, 2018: 18). Even though they have different names, all of them have the same goal, which is to increase the competitiveness of each country's industry in the face of a dynamic global market vortex.

The Republic of Indonesia also takes part in this global arena, using the term Making Indonesia 4.0. Indonesia seeks to build an internationally competitive manufacturing industry. The Ministry of Industry developed this strategy with an integrated and implemented roadmap aimed at creating a strong and sustainable economy. Five focuses become the implementation of this roadmap, namely food and beverage, chemical, textile, electronics, and automotive (Venti, 2018: 21).

Industry 4.0 is inevitable, Indonesia must also draw up strategic steps to face this era and become a developed country that is watched by the international community. Historically, the 1.0 industrial revolution occurred in 1784 in England, when the steam engine and mechanization were invented and began to replace human jobs. The second revolution occurred at the end of the 19th century when electric-powered production machines were used for mass production activities. Then in 1970 entering the industrial era 3.0, when the use of computer technology for manufacturing automation, and now entering the industrial era 4.0.

The industrial world is an economic activity that processes and processes raw materials into finished or semi-finished goods, including large, medium, and small industries. The industry has an important role in the rate of economic growth in all lines of life. This is because industrialization concerns the needs and needs of people's lives.

The industrial revolution 4.0 was marked by the basis of digitalization in all lines of human life, which then fundamentally changed the way of life, work, and interaction. The concept offered by industry 4.0, of course, is tempting and promising to be applied considering the current globalization fast. Many benefits and advantages can be obtained from this era. Among them are faster and more flexible production activities, encouraging income growth, the need for skilled workers, customer needs that can be handled individually, and so on. But on the other hand, it also has challenges, for example, fluctuating political conditions, limited resources, risk of natural disasters, and so on.

Industry 4.0 is also still not directed, only in the form of real ideas from all aspects offered, so that it can create possible development directions. Broadly speaking, there are five challenges faced in the industrial era 4.0, namely aspects of knowledge, politics, technology, economy, and social. (Hoedi and Wahyudi, 2018: 18).

The challenges faced are a shared responsibility, and depend on each Individual or groups or groups can process and package these challenges into opportunities, or even become threats to human life. The smartphone is one of the fruits produced by industry 4.0 which has many advantages and benefits. Relatives and friends whose whereabouts were unknown in overseas countries, by using the video call feature, can now be contacted by clearly seeing what they are doing. But on the other hand, the impact of the use of smartphones must be paid for with aspects of morality that have dropped drastically. Hate speech, hoaxes, racism, porno-action, and pornography are rampant as if unstoppable. Private and taboo things to talk about have now become public consumption. In Yuli's research (2018: 143), cellphones or smartphones are one of the triggers for divorce.

The industrial revolution has the character of capitalism (Ilyas, 2016: 90), in social life, there is a transformation in almost all lines of human life. The social orders that were previously humanist are starting to be replaced by individualistic capitalist societies. The hegemony of the culture of capitalism breaks the joints of humanistic epistemology. Those who are literate in technology, economy, and production factors can easily expand compared to those who only have sweat capital.

Launched from www.okezone.com, Kasatgas Nusantara, Inspector General of Police Gatot Eddy Pranomo said that from mid-2017 to December 2018, there was around 3,884 hoax content and hate speech spread on social media. The human character of the industrial era 4.0 is a petty character, spreading content without filtering it first. All users appear as

journalists and editor-in-chief, just by moving their thumb, they can spread hoaxes, hate speeches, and so on, without being skeptical and selective in reading and spreading sub-news.

Then, on November 1, 2018, Indonesian President Joko Widodo, as written by Supratin on the official Merdeka.Com website, said the industrial revolution 4.0 brought new challenges to the morality of society, both in Indonesia and the world. The challenge is the emergence of social media. This is where the need to return to the instructions of the Qur'an in dealing with the vortex of industrial revolution 4.0, as well as proving an adage of the Qur'an that is always relevant to all times and places.

The Qur'an which is a guide and for guidance for humans is a book in which there is no doubt (Surah Al-Baqarah: 2). The Qur'an is also believed to be the last message of the heavens for the benefit of mankind (Al-Baqarah: 185). The Qur'an is also believed to be a holy book that is relevant in all times and places, a holy book whose truth-values are universal and can apply at any time and place.

There are at least three reasons for propagating an adage from the Qur'an *Salih Likulli Zaman wa Makan*. First, Muslims firmly believe that the Qur'an is a divine word that functions as a guide for humans at the end of time so that they are believed to be able to "save" humans. Second, the Qur'an is also believed to be an eternal miracle because it can weaken those who doubt it, at any time and condition. Third, the results of scientific findings, both Muslim and non-Muslim, gain legitimacy in the Qur'an, thus making it superior to other holy books.

The face and characteristics of the Qur'an in today's society, according to Nasaruddin Umar (2018: 305), still stands out as a book of the law, which only contains commands and prohibitions, rather than as a book containing moral guidelines. Verses that should function as moral values are forced to become legal verses. As a result, the society that is formed is a religious people, a condition when humans are in the confines and pressure of religion. And the consequences furthermore, the adherents of many religions leave the teachings of religion. This should not happen, because the Qur'an is a guide for humans. If you return to the instructions of the Qur'an in the face of the industrial revolution 4.0, you will find proper relevance.

Hoaxes, for example, in the Qur'an, according to the research of Sadiq and Darwis (2018), are widely described in it.

Allah Said in QS. An-Nur verse 11-12: "*Those who brought forward the lie are a body among yourselves: think it not to be an evil to you; On the contrary, it is good for you: to every man among them (will come the punishment) of the sin that he earned, and to him who took on himself the lead among them, will be a penalty grievous Why did not the believers - men and women - when ye heard of the affair,- but the best construction on it in their minds and say, "This (charge) is an obvious lie"?*

This verse talks about the case that befell the Prophet's wife, Aisyah ra., that she had been accused of having committed an indecent act with one of her companions.

Continued Sadiq and Darwis (2018: 56-61), preventive actions that can be taken in dealing with hoaxes are first, always husnudzan to the accused person, this is based on the QS. An-Nur: 12. Second, cooperate to reveal the validity of news, in QS. An-Nur: 13. third, the formation of anti-hoax media flows, QS. An-Nur: 14. Fourth, don't underestimate hoaxes, QS. 15. And fifth, stop talking about hoaxes, this is based on the QS. Al-Nur: 16. In another verse also described the method taken to check the validity of news, in QS. Al-Hujurat: 6, if there is news, it should be clarified first.

Hate speech is also an issue that needs to be reviewed – for the context of the industrial revolution 4.0 – in the Qur'an. Islam strictly prohibits backbiting, fighting, cursing, and abusing (Surat al-Hujurat: 11), this is marked by the use of *La Nafi* (the letter lam which means prohibition) because it can injure the honor of an individual or group. Something unavoidable, at the social level, is the rooted ideology and monistic attitude, namely

understanding and attitudes that assume that others are wrong and that they are right (Zuhairi 2010: 291) or truth claims. Because they feel they are the most correct, all news and content that does not agree with their political, economic, social, and cultural ideology will be disseminated, to bring down their opponents.

The right to freedom of expression is the argument for the perpetrators of hoaxes and hate speech. Islam, with its source of teaching, the Qur'an, really appreciates the principles of freedom of expression, because it is an award that is highly valued high for human glory. This can be found in QS. Al-A'raf: 185, as follows: "*Do they see nothing in the government of the heavens and the earth and all that Allah hath created? (Do they not see) that it may well be that their terms are nigh drawing to an end? In what message after this will they then believe?*"

From this verse, it can be understood that humans are freed to contemplate and think, by knowing and paying attention to the universe which is owned and created by God Almighty will reveal the secrets of nature that can be used by humans for their needs. However, as a condition of rights It is used to spread goodness, and not to spread evil (Ahmad, 2007: 229-234). Likewise, it is clear that in the era of the industrial revolution 4.0, the rich are getting richer and the poor are getting poorer.

It is Adam Smith, according to Ilyas (2016: 90-93) who is one of the figures who played an important role in formulating the concept of capitalism, with his book The Wealth Of Nation, recommends the struggle for each individual in reaping wealth, and the wealth of these individuals can have implications for increasing the welfare of a country. The effects that can be generated from the system and practice of capitalism are not only in the economic sector but are also felt in almost all social, political, legal, environmental, and so on.

Even though it has been emphasized in QS. Al-Hashr: 7, "*so that it may not (merely) make a circuit between the wealthy among you*."

One of the purposes of the Quran is to prevent inequality and social injustice. The poverty rate will continue to increase if wealth is only circulated in the hands of a few people (Nasaruddin Umar, 2018: 323). In another verse, it is also recommended to pay attention to the fate of others, And render to the kindred their due rights, as (also) to those in want, and the wayfarer: But squander not (your wealth) in the manner of a spendthrift. (QS. Al-Isra' verse 26)

The tactics and arrangement of property rules in a country or nation are the main joints of the nation's life (Hamka, 2015: 145), as well as taking sides with the weak and oppressed is something that is appreciated by the Quran, and is cross-border. There is no differentiation of religion, ethnicity, or socio-political groups (Nasaruddin Umar, 2018: 317).

However, people, especially those who believe in the Quran as a holy book, have long neglected and ignored the teachings contained in the Quran, so that the verses were only written but there was no actualization. The happiness of human life will only be achieved if it returns to the Quran (Hamka, 2015: 156)

The era of the industrial revolution 4.0 also has challenges in terms of knowledge or technology. Literacy culture initially used pen, ink, and paper as a medium of literacy, then replaced with a typewriter, not long after that, inventions occurred in hardware, with the invention of the computer, but it was limited and could not be carried anywhere after it began to be developed for making laptops, and entering the era of the industrial revolution 4.0, literacy tools were replaced by devices that were smaller in shape, easy to carry everywhere and had advanced features. Likewise, books are starting to be replaced by digital books. In the Quran, the verse that is used as the basis of literacy is QS. Al-Alaq: 1-5

Allah said: "*Read! in the name of thy Lord and Cherisher, Who created Created man, out of a (mere) clot of congealed blood: Read! And thy Lord is Most Bountiful,- He Who taught (the use of) the pen,- Taught man that which he knew not.*"

Iqra' comes from a word that means to collect. From this basic meaning, several different meanings were born, such as conveying, studying, exploring, researching, knowing the characteristics of something, reading written texts, or not (Quraish, 2014:569).

The repetition of the command to read in this verse continued Quraish Shihab, the ability to read should be done by repeating it until it exceeds the maximum limit. And there are two ways of acquiring knowledge, namely Allah teaches with a pen that has been known by humans before and teaches humans without a pen something that the human has not known before or *ladunni* science.

Allah urges all mankind to continue to improve the achievements of their civilization, which is balanced between physical and spiritual aspects, through a culture of literacy, which is based on morality to Allah Almighty, if it is more severe on In the physical aspect, humans will become losers, and their safety will be threatened, as well as if it is more severe on the mental aspect, humans will lose to compete in this world (Salman, 2018: 253-254). This is how the Qur'an, early on, underlined the importance of reading and the necessity of sincerity and skill in choosing readings that are suitable for consumption (Quraish, 1994: 168).

Literacy in Oxford (2008:258) "ability to read and write". Two kinds of literacy developed and emerged in the 4.0 industrial revolution era, old literacy, which includes reading, writing, and arithmetic skills. And new literacy includes data literacy, technological literacy, and human literacy (Hendra, 2017; 106) Data literacy is related to the ability to read, analyze, and make thinking conclusions based on data and information (big data). Technological literacy is related to the skill of understanding mechanization, and human literacy is closely related to communication, collaborative, critical, creative, and innovative skills (Hendra, et al. 2017: 2016).

Therefore, this is a joint task and in particular the government, to regulate special regulations related to these two literacies, so that the nation's successors are competitors who are capable of facing the industrial era 4.0, not the generation of geeks (technological stuttering), ignorance of the function of a technological product is created and don't know how to use it wisely.

Technological sophistication is one of the important mediums in the 4.0 industrial revolution era, tracking the views of the Quran on technology can be found in QS. Al-Jatsiyah: 13, "*And He has subjected to you, as from Him, all that is in the heavens and on earth: Behold, in that are Signs indeed for those who reflect.*"

When the Qur'an chooses the word *Sakkhara*, which means the basis of subjugating or degrading, then the meaning is so that the entire universe and with all its benefits can be achieved by humans (Quraish, 2014: 586).

The nature of technology is ambiguous, good or bad depending on the application. Technology is here to help humanity's task as caliph on earth. But when the presence of technology alienates humans, then this problem should be discussed further.

CONCLUSION

The industrial revolution 4.0 is something that cannot be avoided, its impact will sweep the economic, political, social, knowledge, and technology sectors. There are many advantages and benefits offered by this era, but there are also many inequalities that will occur, one of the most critical aspects that will be attacked is the aspect of cultural and religious morality which is no longer being ignored.

The Qur'an as an ark for navigating the rigors of globalization and information has provided early solutions on how to respond to the industrial era 4.0, mankind is expected to return to the values contained in the Qur'an. In conditions like this, religious values and doctrines are felt to be a necessity and are felt by those who practice them which will ultimately create a religious-mindedness society.

REFERENCES

Ahmad Abu Bakar. Diskursus HAM dalam Al-Qur'an, Cet. I; Ciputat: Pustaka Mapan.

Ahmad Syafi'i Ma'arif, dan Said Tuhuleley. 1993. "Al-Qur'an dan Tantangan Modernitas". Cet. II; Yogyakarta: SIPRESS.

Faisal Ismail. 2016. "Islam, Doktrin dan Isu-Isu Kontemporer". Cet. I; Yogyakarta: IRCiSoD.

HAMKA. 2015. "Keadilan Sosial dalam Islam". Cet.I; Gema Insani Press.

Hendra Suwardana. 2017. "Revolusi Industri Berbasis Revolusi Mental". Jati Unik: Vol. 1, No.2.

Hoedi Prasetyo dan Wahyudi Sutopo, 2018. " Industri 4.0: Telaah Klasifikasi Aspek dan Arah Perkembangan Riset". Jurnal Teknik Industri: Vol.13, No.1.

Ilyas Syarifuddin. 2016. "Islam, Politik dan Kapitalisme". Cet. I; Yogyakarta: Gramasurya.

Schwab, Klaus. 2019. "The Fourth Industrial Revolution", diterjemahkan oleh Farah dan Andi Tarigan dengan judul "Revolusi Industri Kempat". Cet. I; Jakarta: Gramedia Pustaka Utama.

KBBI.Web.id/Revolusi, diakses16 Juli 2019.

Kartini Kartono. 1981. "Patologi Sosial". Cet. I; Jakarta: Rajawali.

Komaruddin Hidayat. 2011. "Memahami Bahasa Agama". Cet. I; Bandung: Mizan

Kuntowijoyo. 2017. "Paradigma Islam: Interpretasi Untuk Aksi". Cet. I; Sleman: Tiara Wacana.

M.Quraish Shihab. 2014. "Wawasan Al-Qur'an: Tafsir Tematik Atas Pelbagai Persoalan Umat". Cet. II; Bandung: Mizan Pustaka.

M.Quraish Shihab. 1994. "Membumikan Al-Qur'an: Fungsi dan Peran Wahyu dalam Kehidupan Masyarakat. Cet. VII; Bandung: Mizan.

M. Nur Kholis Setiawan. 2012. "Pribumisasi Al-Qur'an, Tafsir Berwawasan Keindonesiaan". Cet. I; Yogyakarta: Kaukaba.

Moh Mukri. Dkk. 2019. "Quran-Integrated Science in The Era of Industrial Revolution 4.0". Journal of Physics.

Pahriadi. 2018. "Ujaran Kebencian Perspektif Al-Qur'an". Skripsi: UIN Alauddin Makassar.

Rahtikawati, Yayan dan Dadan Rusmana. 2013. "Metodologi Tafsir Al-Qur'an". Cet. I; Bandung: Pustaka Setia

Sadik Sabry dan Darwis Ridwan. 2018. "Wawasan Al-Qur'an Tentang Hoaks: Suatu Kajian Tafsir Tematik". Tafsere: Vol.6, No.2.

Salman Harun. 2017. "Secangkir Kopi Juz Terakhir". Cet. I; Tanggerang: Lentera Hati.

Sarah Hutagaol. 2019. "Berapa Jumlah Hoaks dan Ujaran Kebencian". www.okezone.com, diakses 18 Juli 2021.

Venti Eka Satya. 2018. "Strategi Indonesia Menghadapi Industri 4.0". Singkat: Vol.X, No.9

Wahbah Az-Zuhaili. 2007. "Al-Tafsir Al-Munir fi Al-Aqidah wa Asy-Syariah wal Manhaj". Cet. VII; Suriah: Darul Fikri Damsyiq.

Wahyuddin Halim, 2007. "Islam dalam Pusaran Wacana Kontemporer". Cet.I; Makassar: PUKAT.

Zuhairi Misrawi. 2010. "Al-Qur'an Kitab Toleransi: Tafsir Tematik Islam Rahmatan lillalamin". Jakarta: Pustaka Oasis