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To cite this article: Jeremy Julian Sarkin & Saba Sotoudehfar (2024) Artificial intelligence and arms races in the Middle East: the evolution of technology and its implications for regional and international security, *Defense & Security Analysis*, 40:1, 97-119, DOI: [10.1080/14751798.2024.2302699](https://doi.org/10.1080/14751798.2024.2302699)

To link to this article: <https://doi.org/10.1080/14751798.2024.2302699>



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Published online: 29 Jan 2024.



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ESSAY



Artificial intelligence and arms races in the Middle East: the evolution of technology and its implications for regional and international security

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ABSTRACT

Artificial Intelligence is now deeply connected to weapons systems. It therefore plays a critical role in matters concerning international peace and security. AI has also seen military competition take on a new dynamic. However, few studies have addressed the distinct dynamics of AI and its effects on Middle Eastern arms races. Given that these issues have the potential to fuel regional conflicts and jeopardise international security, it is contended that it is crucial to investigate their impact in both the medium and long-term. This article argues that the Middle East has had several arms races in past, which need to be understood to learn the lessons about what might happen in the future. It is also important to understand how a variety of international actors have negatively affected peace and stability in the region with their arms sales. The research argues that at present, there is a lack of understanding about the implications of AI and its economic, legal, security, and political consequences. The article makes a variety of recommendations on the implications of AI, including that states in the region should be coordinating, planning, and developing policy with respect to AI and arms matters.

KEYWORDS

Artificial intelligence; arms races; Middle East; technology; regional and international security; peace and security; autonomous weapons

1. Introduction

Instability and insecurity have always threatened international relations amongst states. Therefore, various weapons and systems have been built for the purposes of deterrence,¹ although at times for offensive purposes as well. The demand for security and deterrence has led to the acquisition by states of advanced weapons and has stimulated them to enter into arms races². Importantly, various studies reveal that half of all armament races result in conflict or wars.³

Artificial Intelligence (AI) is now deeply connected to weapons systems. A whole range of arms now use AI. As a result, AI is playing a critical role in matters of international peace and security.⁴ Various studies indicate that the development of AI has

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fundamentally changed societies around the world since World War II.⁵ In particular, the development of autonomous weapons and such vehicles, which do not require human intervention, has already had a dramatic effect. These have altered military tactics as well as conflict dynamics.⁶ As a result, future battles and arms races are likely to be technology-driven.⁷ Therefore, this technology needs to be implemented responsibly by the legal community, states, and all other international organisations in ways that reduce conflicts and risks of arms races.⁸ However, currently, AI technology belongs only to a few powerful, wealthy countries that have the capacity to invest in robotics, AI research, and other related resources.⁹ Countries such as China, Russia, and the US have the capability to intensify the autonomy of machines and robots, giving them significant life-and-death decision-making powers.

In this context, the development of AI has seen military competition take on a new dynamic.¹⁰ AI is the reason autonomous weapons such as unmanned combat aerial vehicles (UCAVs) were developed.¹¹ These drones are capable of performing various operations, from long-range aerial surveillance and deterrence to spying on the nuclear developments of other countries and conducting attacks.¹² At least 76 countries have acquired such capabilities, including Middle Eastern states.¹³ Drones are becoming a commonplace technology.¹⁴ In 2013, the US Federal Aviation Administration anticipated that almost 30,000 patrolling drones would be in use around the world by the end of 2022.¹⁵ Investment in such technology has increased and, for example, in 2019 the European Commission announced a US\$260 million investment in drone programmes.¹⁶ These technological advancements will see an aggressive drone market amongst various world geopolitical players, including China, Russia, the US, and the Middle East.¹⁷ This will result in a new type of global arms race, with long-term effects for regional and international security.¹⁸

Despite the challenges that AI developments bring, few studies have addressed the distinct dynamics of the AI revolution and their subsequent effects on the Middle Eastern arms race. Given that these issues have the potential to fuel regional conflicts and jeopardise international security, it is crucial to investigate their impact in both the medium and long-term. This is because if arms races are recognised early enough, the underlying political issues can be addressed, ensuring regional and international security.¹⁹ Understanding how arms races happen, where they materialise, amongst which parties, and what can be done to negate them is important to reduce such events.

In this study, an arms race is defined as the participation of two or more states in competitive, or interactive attempts to increase the quantity or quality of war material and persons under arms.²⁰ Whilst arms races usually involve at least two independent states, it is often that one of them may be far more committed to arms acquisition than the other.²¹ An arms race may, however, occur in isolation because one party has a fear, exaggerated or not, of a potential opponent.²² It might even be that a state might enter an arms race against a friendly nation in case things between them change. It may be that an arms race is perceived as a threat by the other party, which would then respond in kind.²³

In this context, this article argues that while concerns about nuclear development programmes in the Middle East have prevented sufficient attention from being paid to the significance of AI-driven arms races in the region, these issues are already on track to become significant matters. This article's main argument will be made by critically examining AI emergence and its role in Middle Eastern nations. To understand how the Middle Eastern countries can co-exist with the current superpowers without getting

involved in any AI-driven arms races, or becoming a market for their intelligent armaments, various international players' approaches in this region, including the US, Russia, and China, will also be taken into consideration.

The research contends that the Middle East has had several arms races in the past that have significantly impacted the region. Understanding the historical background is important to learn lessons about what might happen in the future. It is also important to understand how a variety of international actors have negatively affected peace and stability on the region with their arms sales. They have caused arms races in the Middle East. The context in the third decade of this century is that AI is again causing arms races due to its enhanced role in conflicts. Indeed, the developing weapons systems can have dramatic effects for arms races amongst neighbours; therefore, it is argued that states need to invest in AI.

This paper argues that at present there is a lack of understanding in the region about the implications of AI. The development of AI will have important economic, legal, security, and political implications, and, unless a variety of steps are taken by states in the region, they will have severe negative consequences in terms of increasing the pace of existing arms races in the region. Given that there are several large countries seeking to exploit the AI market in Middle East, states in the region should therefore be co-ordinating, planning, and developing policy to avoid being taken advantage. It is additionally clear that recent technological developments, e.g. UCAVs, have already transformed the nature of the arms race, and posed a challenge to all the participating actors.

Aiming to understand these issues, this article is structured as follows. The first part provides a brief history of arms races; then some of the most significant Middle Eastern arms races are examined which include those between Arab states and Israel, between Iran and Saudi Arabia, and between Iran and Israel. The historical role of foreign states, including the US, Russia, and China, in creating and stimulating various arms races will be discussed. The next section discusses the emergence and evolution of AI and its place between superpowers and Middle Eastern states. The subsequent section focuses on the dynamics of various AI-driven arms races in the Middle East and will indicate how these dynamics accelerate the AI arms race and affect security both regionally and internationally. The last section of the study provides the conclusion and a variety of recommendations for Middle Eastern countries, suggesting how they can adopt the new technologies, while avoiding participating in AI-driven arms races.

It must be noted that understanding a territory's population, including its cleavages and divides, is essential to understanding its stability and security issues. Stability can be affected by ethnic and religious issues.²⁴ Therefore, the diversity of religious and racial dynamics in the Middle East can function to fuel new arms races. In the Middle East, because there is often a lack of religious tolerance; and the prevalence of opposing ideological and ethnic viewpoints, there has been a significant threat to domestic and regional security.²⁵ Conflicting ideologies have led to the emergence of Takfiri groups, such as ISIS and al-Nusra; as well as different religious groups, including the Sunni and Shia, and their related sects.²⁶ While the majority of the population in countries like Iran, Iraq, and Bahrain, are Shiite, the Sunni population is predominant in other countries.²⁷ Ideological disagreements have played a major role in the region's conflicts, which have created competition amongst countries such as Yemen, Saudi Arabia, and Iraq.²⁸ This is critical as non-state actors, which include religious extremists,

are potential users of intelligent armaments. As the Middle East is home to various religious and other opposing groups, these organisations may influence the region's AI arms trade, and this spark a new arms race. These weapons can give these groups more power, endangering both regional and global security.

2. The historical evolution of arms races

Whilst arms races have always occurred between enemies, the foundations of the modern international arms races began in the mid-twentieth century.²⁹ This is when the United States of America (US) and the Soviet Union both acquired nuclear weapons.³⁰ The US was the first to achieve successfully nuclear weapons capability, which it did in July 1945. Soon after that, in 1949, the Soviet Union unveiled its nuclear acquisition by exploding an atomic bomb.³¹ An arms race then began between the two states.³² Both countries constantly increased their military expenditures and tried to gain superiority over one another.³³ This was especially so in the period before the end of the Cold War.³⁴ Indeed, the nuclear arms race is the most significant result of the rivalry between the US and the Soviet Union.³⁵ This rivalry affected not only these two countries but also other states in their attempts to gain nuclear capabilities,³⁶ and resulted in the following countries gaining nuclear weapons on the following dates: the United Kingdom (1952), France (1960), and China (1964).³⁷

Before 1945, most arms races were of a quantitative nature.³⁸ However, after 1945, the development of artificial intelligence (AI) and innovation in armaments revolutionised these races, turning them into more qualitative ones.³⁹ At present, states are tempted to develop their AI knowledge and capabilities, as those who prevail in the various rivalries will have the possibility to enhance both their domestic and international surveillance as well as other advantages.⁴⁰ However, the states' interest in AI development has two other benefits, one domestic and one international. On the one hand, AI supports domestic economic and technological sovereignty growth, and also acts as a solid deterrence to others.⁴¹ On the other hand, AI capabilities also provide countries with international economic and political prestige.⁴² Therefore, many observers anticipate ongoing "arms races" between states that seek to deploy AI in their military applications, including the US and China.⁴³ While after the Cold War and the East–West arms race competition over armaments and weapons declined gradually, the emergence and evolution of military advancements, particularly in regions such as the Middle East, have led these countries to escalate their competition on these matters.⁴⁴ A study by Rider reveals that rivalries can result in arms races, and therefore increase the risks of war.⁴⁵ This is seen in the Middle East, when as a number of states including Iran, Turkey, and Saudi Arabia began to modernise their military equipment, it had an impact on other states in the area, which affected regional security.⁴⁶

3. The history of the various arms races in the Middle East

The Middle East has also experienced distinct non-nuclear arms races. These occurred between Arab states and Israel (from 1950 to 1967-with an exacerbation again in 1973), between Iran and Israel (since 1980), and more recently, between Iran and Saudi Arabia (since 2005).⁴⁷ Due to its situational dynamics, the Middle East has

emerged as one of the most significant regions where arms races have taken place.⁴⁸ These arms races have been affected by the region's geopolitical situation, issues of deterrence, hostility, ambitions, enmity, unstable security, as well as the frequent presence and roles of foreign states, including the US, Russia, and China.⁴⁹ However, the region's military confrontations, and the various arms races, have evolved over the last few years.⁵⁰ As a result, issues concerning the armed forces in various states in the Middle East have affected the possibility of durable peace in the region and have therefore remained a matter of major international concern.

Despite the international community's efforts to reduce the escalation of a nuclear arms race in the Middle East; states like Israel and Pakistan have never ratified the 1968 Non-Proliferation of Nuclear Weapons (NPT) treaty. The international community's efforts to pressure them to do so have failed.⁵¹ In spite of Iran's membership of this agreement, its actions have violated its provisions and therefore, attempts have been made to hinder the Iranian government's nuclear development programme.⁵² Indeed, if "Iran develops nuclear weapons, there are five or six [other] Middle Eastern candidates for creating and acquiring nuclear capabilities".⁵³ However, the international community has neglected to consider adequately the other various arms races in the region.⁵⁴ This includes the fact that the Middle East's rapid development of AI and autonomous military systems has been undermined by the focus being primarily on nuclear issues.⁵⁵ Soon AI and technology improvements will outpace the issues concerning nuclear weapons and will threaten new regional arms races.⁵⁶ Therefore, it needs to be understood that both modern technology and nuclear weapons are serious problems for the region.

Iran's role in the region concerning AI and autonomous weapons systems is pre-eminent.⁵⁷ It has developed multiple drone programmes and has become a supplier of this technology for the rest of the Middle East.⁵⁸ Various countries, including Syria, Lebanon, and Hezbollah have used Iranian-made drones,⁵⁹ and have become Iran's largest drone-export destinations.⁶⁰ Iran has been in negotiations with other countries, including Russia and Turkey, on the supply of drones. It was negotiating with Russia the sale of Iranian-made UCAVs to be deployed in the Russian-Ukraine conflict.⁶¹

Apart from Iran, Israel, and Turkey are also important players in the drone market. Israel began developing drones after the 1973 Arab-Israeli War. It marketed its drone around the world, resulting in an intense rivalry between itself and Iran. The economy of Turkey also has been significantly enhanced by producing and trading in drones from 2016. The Bayraktar TB2 unmanned combat aerial vehicle, is the most important Turkish-made drone, being purchased by at least thirteen countries. It has played a role in protecting Ukraine from Russian attacks in 2022.

In these contexts, the emergence and further evolution of AI may pose new challenges for regional and international security by causing new arms races.⁶² Therefore, a historical understanding of previous arms races and the actors involved is important to ensure that the future does not replicate the past. This section, therefore, examines the history and background of previous Middle Eastern arms races and investigates the evolution of AI in the region as well as the various responses by countries to the development of the technology. It seeks to give an understanding of the potential role AI might play in sparking and accelerating new technological races.

3.1. *The Arab–Israeli arms race*

There have been several arms races between the Arab nations and Israel over the last 50 years.⁶³ These arms races have stemmed from mistrust, or the so-called “survival syndrome” between the various nations. As a result, each state has acquired and developed more sophisticated weaponry.⁶⁴ Arab countries concerned about Israel’s role in the region, and even its existence, have strengthened their military,⁶⁵ and acquired more sophisticated weapons to increase pressure on Israel’s security.⁶⁶

The Tripartite Declaration Regarding Security in the Middle East was adopted by the US, Great Britain, and France in 1950 to try and arrest tensions and halt possible arms races.⁶⁷ Unfortunately, however, the agreement was only effective for a short time, and was soon disrupted by a deal between Czechoslovakia and Egypt for weapons.⁶⁸

Despite some claims that the Arab world’s armament development was driven by a fear of Israel’s military force, which increased regional stability,⁶⁹ the spark for arms races in these Arab countries in fact leaned more toward offence. Conflicts between Arab nations and Israel accelerated after acquiring the most advanced weapons of the time, as was evident in the wars between Arab states and Israel in 1948, 1956, and 1973.⁷⁰

Due to the financial difficulties experienced by the Middle Eastern countries, there was a decline in their investment for weapons development. However, currently the Russia–Ukraine war is affecting the purchase price of oil and gas by the west from Russia.⁷¹ As a result, Middle Eastern countries have seen increased revenue because of these price rises but also because of the larger amount of oil being purchased from them. They therefore have more funding for arms.⁷² On the other hand, the emergence of AI weaponry systems such as UCAVs might also affect Arab–Israeli relations and increase the risk of another arms race as other countries seek to keep up with such acquisitions elsewhere. This will affect regional and international security.⁷³

Therefore, while security, deterrence, and the fear of other countries’ military superiority have become some of the main drivers behind the constant advancement of armaments between Arab states and Israel, several arms races have sparked wars and conflicts between them, as noted above. In this context, the development of AI may spark sophisticated weapons races, posing threats to both regional and international security.

3.2. *The Iran–Saudi Arabia arms race*

The section evaluates how the Iranian Islamic Revolution of 1979 escalated and accelerated weapons competition between Iran and Saudi Arabia. It also notes how the recent technological advancements have contributed to the escalation of arms races between these two states. These are important to understand what may happen in the future.

Historically, before the Iranian revolution in 1979, Iran and Saudi Arabia’s relationship was overseen by the US.⁷⁴ It was the US that instigated Iran and Saudi Arabia breaking from the Soviet Union’s influence in the Middle East during the Cold War.⁷⁵ However, after Iran’s Islamic Revolution in 1979, the relationship between Iran and Saudi Arabia these two nations quickly deteriorated.⁷⁶ Saudi Arabia’s attempts to fuel sectarianism in the Middle East⁷⁷, by providing financial support for Saddam Hussein during the Iran–Iraq war and increasing oil production to lower prices to place more pressure on Iran, affected their international relationship, and led them towards conducting arms races.⁷⁸

It was the financial support from Saudi Arabia and its allies (i.e. Kuwait, the United Arabs Emirates, and the US) to Iraq during the Iran–Iraq war that placed Iran under more pressure.⁷⁹ It slowed down Iran’s nuclear weapons acquisition plans and made these two countries significant competitors in the Middle East.⁸⁰ As a result, there has been an arms race between these two nations for some time. Since the revolution, Iran has mainly had to depend on its domestic armament production because of international sanctions. By contrast, Saudi Arabia is a significant importer of advanced military technologies and weapons.⁸¹ Most of its requirements are met by the US, the UK, and France. Indeed, 11 percent of worldwide weapons imports between 2016 and 2020 were purchased by Saudi Arabia.⁸² It seems, therefore, that Saudi Arabia will continue to seek modern weapons systems, regardless of whether it is in a state of war or peace, or whether it is part of a specific arms race, which may result in regional power imbalances.⁸³

As a result of Iran and Saudi Arabia’s opposing approaches, there has been an increase in animosity between them since 1997. The Cold War motivated their efforts to acquire nuclear weapons, and today’s development of intelligent armaments may encourage them to start a new arms race and jeopardise international security.

3.3. The Iran–Israel arms race

Since Israel came into being in 1948, it has suffered from an almost permanent conflict with its neighbours for its survival.⁸⁴ This insecurity has led Israel to focus on, and improve its, technology and armaments.⁸⁵ The Israeli arms industry has steadily grown since 1948. This is to provide the country with more security, as Israel believes that it must be sufficiently prepared to defend itself.⁸⁶ This growth has led to much economic prosperity.⁸⁷ In fact, the country’s finances have been significantly affected by its arms sales.⁸⁸ As a result, Israel has continuously been able to spend large amounts on weapons research and on improving its weapons.⁸⁹

Therefore, this section indicates how the 1979 Iranian Islamic Revolution significantly affected relations between Iran and Israel. It further discusses how armament advancements enhanced economic growth, and how the price of maintaining an edge over competitors – both qualitatively and quantitatively – has put financial pressure on Middle Eastern nations to modernise constantly their armaments. As each new generation of weapons only enjoys technological superiority for a short time, it necessitates ongoing, expensive research and development, to ensure Israel’s security and its ongoing weapons competitions with Arab neighbours and Iran.

Before the 1979 Iran Islamic Revolution, Israel, and Iran had a variety of matters of mutual interest. They co-operated in exploiting technology with the support and supervision of the US.⁹⁰ For example, when Saddam Hussain assumed power in Iraq, before Iran’s revolution, the two countries were close in matters of technology and weaponry, to provide domestic and regional security.⁹¹ Moreover, until the end of the era of the Shah, Iran was one of the best customers of Israeli arms. By 1979, Iranian weapons purchased from Israeli supplies reached around \$5 billion dollars.⁹² However, the effect of the Iranian revolution saw considerable change in terms of the country’s political and international relations. As a result, Iran and Israel began to distance themselves from each other from 1980.⁹³ In 2004, this changing relationship led Iran to support financially

Hezbollah in south Lebanon, and Hamas in Gaza.⁹⁴ Iran has also participated in several proxy wars in Gaza and Lebanon, endangering the regional security of Israel. As a result, the risks of armed conflict between the two have increased, and they have become competitors in armaments and technologies.⁹⁵

Therefore, the Iranian revolution had a dramatic impact on Iran and Israel's relationship and prompted arms rivalries. These arms races have not only added significant economic pressure, but have also encouraged Iran to pursue nuclear weapons, which has led to a direct rivalry between Iran and Israel. Both nations have invested in intelligent weapons as they become more prevalent, and therefore a new AI-driven arms race may again threaten the Middle East's stability.

4. The role of international actors in the middle eastern arms races

For many years, the Middle East has served as a focal point of international activities. Since World War II, the region has experienced numerous crises and events of international significance.⁹⁶ It is however energy resources that continue to ensure the Middle East's geopolitical importance. This is due to the continuation of nearly 70 years of the Middle East's key role in providing energy, particularly crude oil, and the fact that 60 percent of the world's oil reserves are in the Middle East, particularly the Persian Gulf.⁹⁷ At the end of 2021, Saudi Arabia alone had more than 258 billion barrels of oil reserves, which accounted for 19 percent of the world's total oil reserves. Iran, Iraq, Kuwait, and the United Arab Emirates had 208 billion barrels, 143 billion barrels, 101.5 billion barrels, and 111 billion barrels of oil reserves respectively.⁹⁸ As a result, the dominance of the region will continue until alternative sustainable energy sources reduce the dependence on oil.⁹⁹ As such, one can see that the strategic and geopolitical situation of the Middle East is an important dynamic that fuels arms races.

In this context, the US, Russia, and China have enhanced their presence in the Middle East. To ensure their access to energy resources, they have improved their monitoring efforts in the area.¹⁰⁰ They can therefore be considered rivals, deploying sophisticated systems to protect their interests, which might lead them into further technological arms race to further expand their role in the region.

As far as the supply of weapons to the region is concerned, it has been the US that has been one of the leading suppliers of arms in the Middle East over the last few decades. The UK and France have not lagged too far behind.¹⁰¹ China and Russia have also emerged as primary weapons exporters in recent years. Accordingly, it is countries from outside the region that have sparked arms races in the region.¹⁰² Therefore, to have a better understanding of the current Middle East situation and how to prevent future technological arms races, this section indicates how these foreign superpowers in the Middle East with AI technology will affect regional security. It also discusses how these foreign states benefit from selling, accelerating, and sparking a new AI-driven arms race.

4.1. The role of the US

The US has played a vital role in the Middle East since 1924, once it realised the geostrategic and economic importance of this area.¹⁰³ The opportunities presented by the

Middle East became clearer to the US with the discovery of oil in Bahrain in 1932, in Kuwait and Saudi Arabia in 1938, and in Qatar in 1939. As a result, the US prioritised acquiring political and military control over the region.¹⁰⁴ It was particularly in the Cold War years from 1947 to 1991 that the Americans sought any opportunity to lay the groundwork for their dominance over Middle Eastern countries.¹⁰⁵ The dominance of the US in the region today can be seen in the fact that there are now 21 military bases operated by the US in Middle Eastern countries, specifically in Iraq, Saudi Arabia, Kuwait, Bahrain, Qatar, Oman, and the United Arab Emirates.¹⁰⁶

Historically, Iran served as the foundational point of American security strategy in the Middle East. However, after the Iranian Islamic Revolution, American distrust in the Middle East grew.¹⁰⁷ Middle Eastern countries have seen national and regional crises due to the US military presence.¹⁰⁸ While the US has made several attempts to achieve stability in the region, including the taking of preventive measures, mediation for peace, diplomatic pressure, threats, and military intervention, none have achieved long-term peace and stability.¹⁰⁹ Instead, these activities have arguably caused arms competition between the Middle Eastern nations and other foreign powers present in the area.¹¹⁰

Due to the Middle East's geopolitical situation, and the US's need for oil, the US has progressively extended its surveillance and influence over the region by deploying its military forces there. Indeed, the American presence in the area, along with its display of military success in seducing allies from Middle Eastern countries, has pushed other regional states to modernise constantly their arsenals to ensure their security, which has caused others to acquire even more weapons.

4.2. The role of Russia

Russia's role in the Middle East's affairs dates back to the time of Tsars.¹¹¹ However, because of the Middle East's geopolitical situation, Russia is presently showing great interest in the region.¹¹² As a result of the Arab Spring, Russia has adopted new policies toward various Middle Eastern governments to promote its interests.¹¹³ This section, therefore, seeks to understand how Russia affects other Middle Eastern nations' weaponry. It argues that Russia's strategy has evolved because of the various regional uprisings and Russia's relatively strong ties to Iran.

As a result of the increasing presence of the US in the region after 11 September 2001, Russia has sought to play a larger role, and for this reason has taken a number of steps to do so. With Iran's assistance, Russia assisted Bashar al-Assad during the 2011 civil uprising in Syria, changing it into a long civil war. Russia also supported the Iranian nuclear programme and supported other various Middle Eastern states such as Egypt, so as to be more influential in the Middle East.¹¹⁴ Russia has also played a major arms supplier role in the region. In fact, it is one of the leading suppliers of weapons despite its own fragile economy.¹¹⁵ The supplying of weapons has increased Russia's role in the region, as well as adding to its economic development. Moscow has as a result become the second-largest supplier of weapons in the world. However, it needs more potential customers to expand its market.¹¹⁶ Consequently, Russia views conflicts and wars, especially in the Middle East, as an opportunity to market its weapons.¹¹⁷ Russia's role is however not passive as far as these conflicts are concerned. It continually seeks to destabilise the international order, which it perceives as being governed by the US and other

western democracies.¹¹⁸ It seeks to reclaim its former dominance and authority that it had before the collapse of the Soviet Union at the end of the 1980s.¹¹⁹

Russia has attempted to take advantage of the US's withdrawal from the Middle East and to fill the void left by its departure. This attempt by Russia to enhance its role in the region has been assisted by the Arab countries' tendency to purchase Russian technology and military equipment.¹²⁰ Indeed, the selling of armaments by Russia is a feature of Russian interference in the Middle East.¹²¹ Currently, more than 50 percent of Russian weapons production ends up in the Middle East. This number has recently risen significantly, as it was only 36 percent in 2015.¹²²

In particular, over the last few years, Russia has enhanced its role in the Middle East region by sending equipment and soldiers to assist the Syrian government.¹²³ The Syrian war¹²⁴ has helped Moscow sell more arms in the region and provided an opportunity to show off its weapons and build a future market, which has simulated Middle Eastern states into beginning another race to purchase military equipment.¹²⁵ Other governments of the Middle East have also recognised Russia as an alternative weapons supplier. According to the Stockholm International Peace Research Institute's database on arms sales, Egypt spent \$3.3 billion between 2016 and 2020 purchasing weapons from Russia,¹²⁶ and Iraq has also bought weapons from Russia.¹²⁷

As can be seen, over the past few decades, Russia has tried to forge close ties with various Middle Eastern states. To accomplish this goal and ensure its role as a counterpoint to the US, Russia has sought to gain the trust of some Middle Eastern countries by offering them modern armaments systems. It has therefore adopted a particular strategic plan for each Middle Eastern state.

4.3. The role of China

The Middle East was not much of a concern for China throughout the Cold War. However, as China's energy needs significantly increased, the region began to have greater significance for it.¹²⁸ Despite being a relative newcomer to the Middle East, compared to the US and Russia, China has emerged as one of the region's most significant traders and investors.¹²⁹ Through investments and construction of essential infrastructure, China has gradually increased its political and economic operations in the Middle East.¹³⁰

After the Arab Spring in 2011, China's role in the Middle East changed as it sought access to the region's energy resources.¹³¹ This is because China's energy needs have grown significantly in recent times, and now it is highly dependent on the Middle East's energy resources. As a result, China and Middle Eastern nations are cementing their relationships and growing their co-operative partnerships. China's role has been enhanced in several areas, including in the supply of modern technology to these nations. This has had an enormous effect in several areas of business, including in the supply of surveillance technology and in arms sales.¹³² While China has a specific foreign policy for each Middle Eastern nation, as far as their potential benefits for China are concerned, its primary interests in the region can be categorised into three areas: diplomatic, economic, and military. These are issues which are seen to support China's aspiration to become a significant global power, but also to assist its domestic needs.¹³³ This has partly been possible because of the decline in the US's footprint in

the region.¹³⁴ However, while China and Russia have attempted to displace American dominance in the Middle East, they are seen as not yet having the ability to succeed in doing so.¹³⁵ They still need advanced technology infrastructure, including AI, and more stable political and economic structures to make headway.¹³⁶

China and the US are still however close rivals in AI development and sales. China has declared its intent to take the lead in this technology by 2030.¹³⁷ To achieve this goal, \$30 billion has been allocated to achieve this objective, with the Chinese government contributing \$5 billion. The remaining funds are to come from private companies and other investors in China.¹³⁸ The US and China are competing closely, with the US government spending around \$4.4 billion on AI.¹³⁹ It is however believed that Chinese researchers will soon surpass American researchers in this field, not only as far as research budget is concerned, but also in terms of the number of top publications emanating from the country.¹⁴⁰ While China has lagged behind other countries in providing skilled AI personnel, this seems to be changing as more resources are allocated.

To increase its role in the region, China has established relations with various Middle Eastern states because of its technical advancements in arms and energy demands. Its presence in the region has ensured that the Middle East has become an economic battleground for the superpowers as an example, according to SIPRI data between 2016 and 2020, China's export of intelligent armaments to Saudi Arabia and United Arab Emirates has increased to 365 percent and 169 percent respectively, compared to 2011–2015.¹⁴¹ These are important issues as China's provision of advanced weapons has the potential to spark several AI-driven arms races in these states.

5. The emergence of AI and its significance

AI is a significant subject that is being used in a variety of sectors. However, international peace and security are significantly challenged by AI's current role, particularly in the military.¹⁴² While the international community has specifically concentrated on preventing nuclear programmes in the Middle East to avoid a reoccurrence of the Cold War's effects in this region, it has delayed and has not placed enough emphasis on the regulation of AI and the potential security threats it may pose internationally.¹⁴³ The international legal system has not yet made adequate preparations for this development. Not only is there no specific supervision for the trade of these systems in international law, but the international community also lacks the flexibility to recommend any form of restrictions and enforcement for the present and future challenges of AI implementation in military and hostile situations.¹⁴⁴

Due to this lack of preparedness for AI, Russia has been purchasing drones from Iran to use against Ukraine. Since these interactions between Russia and Iran encourage China to produce more advanced weaponry for the region and provide them to Russia, these nations may decide to join forces and threaten US interests and benefits in the Middle East. This might be a turning point in terms of sparking of AI arms races in the Middle East and may jeopardise international security.

This section, therefore, argues that the world is insufficiently equipped to deal with the military implications of AI emergence. It also indicates that the world's economy and security have been significantly impacted by the rise of AI. However, the law regulating it at both national and international level remains underdeveloped. States therefore need

to develop their own laws to ensure proper regulation of the AI various applications.¹⁴⁵ It is also necessary at the international level to create a framework to ensure an international approach to its use. Therefore, it is vital to adopt some international conventions to prevent its detrimental use.¹⁴⁶ This is important because, according to Russian President Vladimir Putin, a country that wins the AI research race will dominate the world in the future.¹⁴⁷ Already China has declared its intention to lead the world in this area by 2030.¹⁴⁸ Other countries have taken the lead on AI in number of ways, including the US. President Donald Trump launched an AI plan in February 2019 to rival what other countries were doing in sectors such as infrastructure, governance, politics, labour, and international relations.¹⁴⁹ This is because it is recognised that tools and systems based on AI offer very particular advantages to countries. AI can provide countries a competitive economic edge, and also have a positive effect concerning the balance of power that they have within the international system.¹⁵⁰ AI has the potential to be a game-changer for the various superpowers as they seek to promote their intelligence capabilities.¹⁵¹ AI will have the ability to undermine their regional rivals and assist states to impose their political will on others that are not at the same AI technological levels in terms of advancement as well as amount of equipment.¹⁵²

AI has not only transformed the military landscape of Middle Eastern countries and posed challenges to international law, but is projected to have a critical effect on the region's economy.¹⁵³ For example, AI's effect on Middle Eastern non-oil industries is estimated to reach \$320 billion by 2030; therefore, at least 56 nations around the world are trying to develop robotic forces.¹⁵⁴ These robots will operate independently and will be able to gather information automatically. They will also be able to update themselves and make significant decisions themselves on the battlefield.¹⁵⁵

However, there is insufficient understanding of the implications of this technology and how to react to those.¹⁵⁶ States, companies, and various militaries are insufficiently considering the long-term social and political consequences of using this technology as they race to develop or acquire these weapons.¹⁵⁷ In addition to the lack of regulation and the inflexibility of international law toward technological advancement, AI can cause challenges for employment rates.¹⁵⁸ AI might see an increase in the unemployment rate in the Middle East region, with fewer people being employed as the technology reduces the need for people.¹⁵⁹ While more people will be employed in the AI development and manufacture sectors, these will be highly skilled positions that will not compensate for the many jobs that fall by the wayside as AI displaces people who were previously doing the work.¹⁶⁰ Thus, an excessive reliance on AI in societies can result in increased unemployment.¹⁶¹ This may have large negative effects on stability and may result in social unrest in areas of the world such as the Middle East. It could threaten regional and international security.¹⁶²

The effect of AI in regions such as the Middle East may be particularly dramatic, as nations in this region are likely to be a growing market for the purchase of AI-based weapons from the various superpowers, such as the US, China, and Russia.¹⁶³ However, these countries have not adapted their economic and commercial infrastructures to become AI-based economies.¹⁶⁴ This is an issue that such states ought to take up for a range of reasons, including the need to maintain employment levels.¹⁶⁵ Employees need to be reskilled to work in these industries and become proficient in the areas of research and development, as well as in the manufacturing arena.¹⁶⁶ It is also essential to train employees in new technological skills; there needs to be knowledge transfer in a

range of technologies, such as those used to analyse vast amounts of data, create AI algorithms, automate robotic procedures, etc.¹⁶⁷

The issue of upskilling the labour market is necessary in many sectors. One of them is the defence sector, because nations that are unable to employ successfully AI to improve the precision of their military operations may cede the ability to be successful to their adversaries in future conflicts.¹⁶⁸ Without advances in such technology, these nations will not be able to compete in a range of industrial and other sectors.¹⁶⁹

As far as the implications of the growth in spending and research on AI are concerned, this will have significant consequences in a range of areas of international relations.¹⁷⁰ If a state has a solid AI basis, it has the potential to threaten the existence of other countries and in fact change the balance of power at regional and global levels.¹⁷¹ Another implication of the developments around AI is that it might become a tool more often used by non-state actors. Their use of autonomous weapons might increase their ability to play destructive and violent roles.¹⁷² This is because non-state actors, particularly terrorist groups, would be able to employ cheap autonomous drones to harm their opponents and cause chaos.¹⁷³ The use of AI-based weapons by non-state actors will allow them to compete with the extensive military equipment of the armies of countries that are not yet equipped with this technology.¹⁷⁴

Consequently, the emergence of AI has had international legal and economic effects. One of these is that AI and the deployment of autonomous weapons systems can transform the nature of wars and conflicts into remote warfare that may impact world security policy and pose a challenge to international law.¹⁷⁵ The critical concern is how international law can propose solutions and regulate growing AI deployment. Additionally, AI emergence can impact the economy. Firstly, it has placed more pressure on Middle Eastern nations to purchase these advanced weapons and has therefore begun a regional rivalry. Secondly, the superpowers, including the US, China, and Russia, have ongoing competition to create and sell intelligence armaments. They are benefitting from this trade and view the Middle East as their AI armaments market. However, because of religious extremism, AI weapons deployment may be deployed by non-state actors, which will jeopardise regional and global security and further accelerate AI-driven arms races.

6. The dynamics of technological arms races

Each nation around the world is responsible for its own security, sovereignty, and independence.¹⁷⁶ If a nation's security is ensured, it can pursue other purposes, including welfare initiatives.¹⁷⁷ However, where a government lacks faith and trust in its neighbours' intentions, this can affect its attitude towards purchasing and acquiring armaments.¹⁷⁸ To ensure their own security, nations strive to increase and modernise their weaponry for offensive and defensive means.¹⁷⁹

As noted above, because of ongoing negative sentiments towards peace and stability, the Middle East has been the arena of different arms races. Today, the emergence of AI and lack of regulatory systems to restrict their deployment has complicated the situation. It is the geopolitical situation of the Middle East, its racial and religious diversity, and the lack of an international legal framework which may fuel further AI-driven arms races. Therefore, this section argues that these dynamics may influence and facilitate technological arms races in the region.

One of the causes of arms races is that states provide weapons and military equipment to others as a response to defensive and offensive activities that occur.¹⁸⁰ This means that other states then acquire more weapons to increase their own security.¹⁸¹ The rivalry between nations, as this unfolds, is usually the beginning of an arms race. Each state's security, and consequently its stability, will be impacted by how many, and what kind of military weapons, are obtained.¹⁸² Charles Glaser in this regard argues that a nation's security situation is what necessitates its acquisition of arms, which leads to rivalries between it and other states.¹⁸³ In the Middle East, the threat of qualitative arms races has increased particularly after the development of AI deployment in the military and Russia's recent drone purchase from Iran.¹⁸⁴ The US, Russia, and China have already started to compete in the region on matters concerning AI as they are trying to improve their technological arsenals in the region.¹⁸⁵ At the same time, Iran is emerging as a significant producer and exporter of UCAVs and Russia is interested in Iranian-made UCAVs for use in its conflict with Ukraine.¹⁸⁶ The exchange of AI weapons between these two nations might influence other powers in the region and lead to new arms races that could have a negative impact on security.

As can be seen, the use of AI in combat has developed at an incredible rate. In 2003, the US had fewer than ten UCAVs when it invaded Iraq. It now has more than 7,000, and those are not just the machines in the sky. It also has more than 12,000 unmanned ground vehicles (UGVs) currently in use.¹⁸⁷ The US Navy uses robotic motorboats and submersibles, called unmanned surface vehicles (USVs) and unmanned undersea vessels (UUVs). UCAVs, UGVs, USVs, and UUVs have raised several novel and difficult moral and legal issues.¹⁸⁸

However, the lack of legal regulation is a severe problem and can be considered as a dynamic accelerating the risk of AI-driven arms races. In fact, the use of AI has significantly challenged international humanitarian law (IHL) and international human rights law (IHRL).¹⁸⁹ The recent activities in the Middle East between Russia and Iran about purchasing drones indicate the gaps in the legal supervision and regulatory framework for this technology and it can be considered a dynamic for sparking and accelerating AI-driven arms races, jeopardising international security.

7. Conclusion

AI has been rapidly deployed in the military, particularly over the past decade. Most states are investing in AI and are competing to acquire these systems for both defensive and offensive purposes. However, there is a concern that AI might produce new arms races between states seeking this technology.

This article, therefore, aimed to understand the role of AI in sparking new arms races, specifically in the Middle East. The research enquired whether the development of AI in the military might accelerate the arms races in the Middle East. It sought to understand what part foreign superpowers with AI technology play in the security of the Middle East. The paper reviewed whether AI technology will ensure that Middle Eastern nations' nuclear arsenals become less important and whether it will spark new arms races. It also aimed to understand which states profit from the Middle East's AI-driven arms race and whether the role of AI-driven arms races lean more toward defence or offence.

The article also sought to study the dynamics and role of the present superpowers in this region (the US, Russia, and China) in accelerating AI-driven arms races. An issue raised by the work is the concern about nuclear development programmes in the Middle East and how they have prevented sufficient attention being paid to the significance of AI-driven arms races in the region.

The research also indicates that the US, Russia, and China have been using AI surveillance systems to monitor and protect their interests as well as access to energy resources in this region. Their AI armament implementation has stimulated Middle Eastern states to purchase this modern technology, which has accelerated two distinct arms race streams. These are an arms race amongst the US, Russia, and China to acquire the most recent AI weaponry systems and sell them to the Middle Eastern states, and an AI-driven arms race between the Middle Eastern nations to purchase these weapons. The study indicated that these streams could have three consequences: legal, security, and economic. However, international law and the international community are not sufficiently prepared to regulate and supervise this innovation, and AI expansion in the military will soon influence international security by increasing the risks of new arms races. This can significantly influence the economic situation of the Middle Eastern countries by changing the employment rate, hiring foreign expertise, and posing considerable costs to these states to modernise their military equipment.

Furthermore, the geopolitical situation of the Middle East, as well as the region's problematic religious and beliefs intolerance, together with the lack of legal framework, and the lack of an adequate supervision process over AI may accelerate the spark of an AI-driven arms race in this region. Although international law has been able to resolve to some extent the nuclear weapons arms race, it has lagged behind on new technologies. International law has not been able keep up with technological advancement and is not dealing very well in the regulation and restriction of AI weaponry systems.¹⁹⁰ As a result, AI arms races will surpass those for nuclear weapons in this region, which will affect regional and international security.

What emerges from this article therefore is that there is a need for Middle Eastern countries to co-ordinate and to decide on strategy and policy on AI issues. Therefore, Middle Eastern countries should establish a central headquarters, or command centre. Already, the United Arab Emirates has a dedicated minister for AI, and it might be useful if other Middle Eastern countries likewise created a ministry or some other high-level office.

As far as AI infrastructure is concerned, each state in the Middle East should be more prepared on AI matters. This is necessary to avoid becoming merely a market for the purchase of AI from other countries. Countries that lag behind in developing AI infrastructure will be at greater risk of being exploited by superpower rivals in this region.

Another issue that emerges from this study is that Middle Eastern nations should do much more to demonstrate their rational and peaceful commitment to implementing AI globally. They should do what they can to advance a global legal system to establish a suitable framework for AI. These nations need to emphasise the importance of AI systems that do not undermine or jeopardise global and regional peace and security. The Middle East must also prioritise multilateral discussions and confidence-building measures to address the problems associated with deploying AI.

Whilst there is no accurate analytical data on the extent of AI-driven arms races in the Middle East, countries such as US, China, and Russia are using the region to create a market for the sale of their intelligent weapons. These states seek to stimulate arms races for their own benefit, jeopardising regional and global security. Middle Eastern countries should therefore avoid engaging in arms races over this technology to maintain their relative stability. While arms and technology development and purchases are necessary, these should be carefully planned and not done in ways that simply suit the needs of the manufactures.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was financed by national funds of Portugal through the FCT – Portuguese Foundation for Science and Technology.

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