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Identification and Analysis of Factors Influencing the Development of Sports in the Islamic Republic of Iran's Army Using Foresight Methodology (Focusing on Health and Lifestyle)



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ABSTRACT

Objective: Sport has gained attention from health policymakers as a significant factor in promoting health. Therefore, sport is of crucial importance and requires the identification of relevant drivers and scenarios. The aim of this study is to identify and analyze the factors influencing the development of sports in the Islamic Republic of Iran's Army using the foresight methodology.

Material and Methods: This research is applied-developmental in nature and descriptive-analytical based on data collection and analysis methods.

Results: According to the findings, 30 drivers were identified in six general categories: social, technological, environmental, economic, political, and value-based. Subsequently, considering three dimensions—critical uncertainty, the wellness movement and lifestyle, the management skills of army sports managers, and sufficient sports budget—four alternative future scenarios were created: Bright World (Green Land Scenario), the Land of Sports and Health Seekers, the Static Land, and the Desert Land.

Conclusion: According to the research results, in the policy-making for the development of sports and health in the Islamic Republic of Iran's Army, the drivers, particularly the strategic drivers of the wellness movement and lifestyle, the management skills of army sports managers, and a sufficient budget, should be taken into consideration for greater success in this field.

Keywords: Sports Development, Foresight, Islamic Republic of Iran's Army

1. Introduction

Today, sports hold a significant position in various programs such as leisure, social, and cultural activities. Additionally, sports provide an appropriate

platform for executive participants and athletes to engage in other social, political, and economic arenas. The ability of sports to promote growth is increasingly recognized by researchers and health professionals (1). Predictive

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components of success for countries participating in international events are classified into three areas: 1) macro-level variables, 2) meso-level variables, and 3) micro-level variables (2). The distant or peripheral level includes macro-political, economic, social, cultural, and technological factors. The intermediate or meso level encompasses sports organizations (federations and national Olympic committees, etc.), while the close or micro level includes factors directly related to the athlete. Evidence and study results indicate that engaging in physical activities as part of a healthy lifestyle is the most effective and sustainable way to prevent the rise of non-communicable diseases (3).

The direct relationship between decreased physical activities and increased diseases necessitates that governments and policymakers at all levels consider sports as a priority in their policies. Programs should be designed to realize the motto of "sports for all," and physical activity programs should be appropriately designed and culturally relevant (4). In a study titled "The Impact of Anthropometry on the Physical Fitness Test Performance of Army Cadets," Agostinelli and colleagues (2024) examined the impact of anthropometric measures such as arm and leg length on performance in the physical fitness test. This study showed that arm and leg length significantly affect performance in some fitness test events such as deadlift, standing power throw, and sprint-drag-carry. The study's results suggest that it is necessary to review the events and equipment used in the physical fitness test to ensure that performance is not limited by factors that do not represent physical fitness or job requirements (1). A study on the National Physical Activity Plan in the United States indicated that physical activity requires a national planning process that introduces necessary policies, actions, and initiatives (5). Therefore, a national strategic plan for physical activity was designed, specifying the roles of various sectors such as public health, education, private sector, media, healthcare, and sports.

In Iran, the health transformation plan, regardless of the composition of meetings and working groups, has primarily taken a medical and therapeutic approach to health, often neglecting the health promotion and healthy lifestyle approach (including sports), which are the main determinants of health. Furthermore, a review of past documents shows that not only does the current health system document, but also previous documents do not consider any place for sports and physical activity despite its unique potential in health development (6). On the other hand, numerous studies have been conducted on the prospects, goals, and policies of the health sector, but there

is no research integrating these two related areas with a health and sports policy-making approach. Developing group sports programs at the organizational level, especially in the Islamic Republic of Iran's Army, can impact social health through social cohesion, in addition to promoting physical health. Sports in the Islamic Republic of Iran's Army play a vital role in maintaining the physical and mental readiness of soldiers, enhancing discipline, and strengthening national and patriotic spirit. The development of sports in the army requires the precise identification and analysis of influential factors. Foresight methodology is an efficient tool for predicting trends and challenges facing sports development in the army and providing suitable solutions to overcome them. A study showed that CrossFit training, due to its impact on strength, endurance, and cardiovascular fitness, is suitable for use in military training. Results indicated that in the CrossFit group, the average BMI, fat mass, heart rate, systolic and diastolic blood pressure significantly decreased compared to the control group (7). Despite attention to military sports in macro programs, it is unclear to what extent these programs' capacities have been used for military sports development, and even a model for military sports development has not been presented. It has also not been determined how to achieve the approved military sports policies and goals, and which development axes, programs, or activities should be emphasized to achieve these goals. Therefore, identifying the factors and dimensions of development helps us design a general model based on the development of military sports with a foresight approach, revealing differences between factors, dimensions, and components, creating a new order and framework in this field, and ultimately introducing a comprehensive and practical model for correcting, improving, and enhancing the level of military sports development. This study aims to design a military sports development model based on identified factors, components, or dimensions with a foresight approach. It is expected that by designing and optimally implementing the military sports development model, the growth and development of military sports will be further facilitated, paving the way for the flourishing of abundant talents among military personnel, and also laying the groundwork for designing an effective national development model for military sports. Investigating and analyzing factors influencing sports development in the Islamic Republic of Iran's Army is of great importance. Sports play a crucial role in enhancing physical readiness, mental health, and the overall performance of military personnel. Given the rapid changes

in various fields, including technology, culture, and society, using foresight methods can significantly aid in more effective prediction and planning for military sports development. With the development of appropriate sports programs, physical injuries resulting from improper or insufficient training can be prevented. This will lead to reduced healthcare costs and increased efficiency of forces. Military personnel with higher physical and mental readiness will perform better in their missions, contributing to increased efficiency and effectiveness of military operations. Using foresight methods to analyze factors influencing sports development enables the prediction of future changes and developments. This helps military managers and planners design and implement optimal sports development programs, considering future changes. Sports policymakers in the Islamic Republic of Iran's Army should, like in advanced countries, accept sports as an essential factor in enhancing the health and physical readiness of military forces and use it to achieve the country's development goals and modern military dimensions. Therefore, it is necessary to determine how to achieve the Islamic Republic of Iran's Army sports development goals, which is possible through analyzing the role of strategic sports foresight.

2. Methods and Materials

This research is applied-developmental in terms of its objective and descriptive-analytical in terms of data collection and analysis methods. In this study, qualitative data were first collected through interviews, followed by quantitative data collection, and finally, the results were integrated during the interpretation phase. For environmental analysis, the STEEP-V method was used, and for identifying critical uncertainties, cross-impact analysis was employed using MICMAC software. Scenario development was conducted using Scenario Wizard software. The statistical population consisted of sports managers in the army, and participants were selected based on their familiarity and close relationship with the research topic and the importance of their participation in the study. The participants included a wide range of individuals, such as sports policymakers, managers, and university professors. Ultimately, 15 individuals were selected using purposive snowball sampling.

3. Findings and Results

The macro trends (drivers) affecting the development of sports in the army, based on environmental scanning and obtained through a literature review and expert interviews, are categorized into six general groups, as shown in [Table 1](#).

Table 1. Macro Trends Affecting the Development of Sports in the Army

Study Area	Macro Trends (Drivers)	Abbreviation
Social	Wellness movement and lifestyle in the armed forces	A1
	Development of public sports in the army	A2
	Management skills of army sports managers	A3
	Sports NGOs	A4
	Sports celebrities in the armed forces	A5
	Sports brands	A6
Technological	Development of sports applications	B1
	Smartening of army sports facilities	B2
	Design of sports websites in the army	B3
	Development of media literacy in the army	B4
Environmental	Establishment of safe and clean waste disposal systems in army sports facilities	C1
	Use of suitable and clean fuels in sports events	C2
	Energy management	C3
	Pollution management	C4
	Waste management	C5
Economic	Sufficient budget	D1
	Privatization in championship and professional sports	D2
	Sports sponsors in the armed forces	D3
	Inflation and its impact on national sports	D4
	Sports fans in the armed forces, especially the army	D5
Political	Strengthening national identity	E1
	Sports diplomacy and international relations	E2
	Depoliticization in sports with a developmental view	E3

Values	Comprehensive sports law development	E4
	Membership in international organizations	E5
	Professional ethics	F1
	Heroic spirit	F2
	Educational and training movement	F3
	Reform movement	F4
	Spiritual health and defense of the country governing the values of army sports	F5

Table 2. Indirect Influence and Impact of Macro Drivers Based on MICMAC Software Output

Drivers	Impact	Influence
Wellness movement and lifestyle in the armed forces	283839	271641
Development of public sports in the army	245691	293517
Management skills of army sports managers	301932	275917
Sports NGOs	209520	193716
Sports celebrities in the armed forces	209423	192404
Sports brands	195777	232458
Development of sports applications	192716	204810
Smartening of army sports facilities	197099	220597
Design of sports websites in the army	203470	228291
Development of media literacy	235409	247882
Establishment of safe and clean waste disposal systems in army sports facilities	178453	198779
Use of suitable and clean fuels in sports events	152840	211730
Energy management	166506	284140
Pollution management	172792	272703
Waste management	177287	266408
Sufficient budget	279880	265125
Privatization in championship sports	243363	217822
Sports sponsors in the armed forces	232019	230410
Inflation and its impact on national sports	239702	203719
Sports fans in the army	261638	233084
Strengthening national identity	233806	248579
Sports diplomacy and international relations	251771	198121
Depoliticization in sports with a developmental view	251269	204537
Comprehensive sports law development	281935	215009
Membership in international organizations	254931	198936
Professional ethics	252038	215721
Heroic spirit	228487	192490
Educational and training movement	247437	258014
Reform movement	247437	201440
Spiritual health and defense of the country governing the values of army sports	232968	183435

Now, to determine the scenario space, we need the main trends that have high importance and uncertainty. Although other uncertainties are also important or require continuous monitoring, they do not form the subject of foresight. Therefore, variables with high impact but are uncontrollable cannot be considered strategic variables. If we assume the status diagram of the variables as a coordinate network, variables located in Area 2 have such a status. Variables in

Area 3 of the coordinate network have very low impact and influence and cannot be considered strategic variables. Variables in Area 4 also do not have strategic properties due to their strong dependency on other variables and are more considered as results of other variables. However, variables in Area 1 of the coordinate network are strategic variables as they can be controlled by the management system.

Table 3. Position of Variables in the Influence-Impact Diagram

Influential Variables	Bidirectional Variables	Influenced Variables	Independent Variables	Regulatory Variables
Privatization in championship sports in the army	Wellness movement and lifestyle in the army	Energy management	Sports NGOs	Development of media literacy
Inflation and its impact on national and army sports	Development of public sports in the army	Pollution management	Sports celebrities	Sports sponsors in the army

Sports fans in the army	Management skills of army sports managers	Waste management	Sports brands	Strengthening national identity
Sports diplomacy and international relations	Sufficient budget in national and army sports		Development of sports applications	
Depoliticization of sports for development purposes	Educational movement		Smartening of army sports facilities	
Comprehensive sports law development			Design of sports websites in the army	
Membership in international organizations			Establishment of safe and clean waste disposal systems in army sports facilities	
Professional ethics			Use of clean fuels in sports events	
Reform movement			Heroic spirit	
			Spiritual health and defense of the country governing the values of army sports	

Finally, the strategic drivers, which are the main uncertainties shaping the future, identified through MICMAC software, are:

1. Wellness movement and lifestyle in the army
2. Management skills of sports managers in the Islamic Republic of Iran's Army
3. Sufficient budget for the development of sports in the Islamic Republic of Iran's Army

Table 4. Key Drivers Affecting the Development of Sports in the Islamic Republic of Iran's Army

No.	Driver	Uncertainty
1	Wellness movement and lifestyle	Active and effective participation in achieving the optimal level of sports and lifestyle development in the army Partial participation in achieving the optimal level of sports development in the army No participation in achieving an optimal level of health
2	Management skills in army managers	Improvement of management skills in army managers Continuation of the current trend
3	Budget	Lack of attention and weakness in management skills in army sports Allocation of sufficient budget for army sports No allocation of sufficient budget for army sports

A cross-impact analysis questionnaire among various uncertainties of the key drivers was prepared. The central question of this questionnaire is, if the first uncertainty of the key trend A1 occurs in the future, what will be its impact on the occurrence or non-occurrence of the first uncertainty of the key trend A2, rated on a scale from -3 to 3.

Results show that the development of sports in the Islamic Republic of Iran's Army faces four scenarios. The most important variables affecting the development of army sports are the wellness movement and lifestyle, management skills of army sports managers, and sufficient budget for sports in the country and army.

Table 5. Stability and Impact in Each Scenario

Scenario	Status	Stability Value	Overall Impact
Scenario 1	Wellness movement and lifestyle: Active participation in achieving optimal physical and mental health Management skills of army sports managers: Improvement of triple management skills Sufficient budget in national sports: Access to sufficient budget in national and army sports	2	11
Scenario 2	Wellness movement and lifestyle: Partial participation in achieving optimal physical and mental health Management skills of army sports managers: Improvement of triple management skills Sufficient budget in national sports and army: No access to sufficient budget	0	1
Scenario 3	Wellness movement and lifestyle: Partial participation in achieving optimal physical and mental health Management skills in army sports managers: Continuation of the current trend Sufficient budget in national and army sports: No access to sufficient budget	0	2
Scenario 4	Wellness movement and lifestyle: No participation in achieving optimal physical and mental health	2	10

Management skills of army sports managers: Lack of attention and weakness in triple management skills
Sufficient budget in national sports: No access to sufficient budget

3.1 Scenario 1: Green Land

This scenario is formed from the combination of three main uncertainties from the three main drivers, as described

Table 6. Uncertainties Constructing Scenario 1

Driver	Uncertainty
Wellness movement and lifestyle	Active participation in achieving optimal physical and mental health
Management skills of army sports managers	Improvement of triple management skills
Sufficient budget	Access to sufficient budget

The positive drivers governing this scenario indicate active participation in achieving optimal physical and mental health, improved management skills, and access to sufficient budget. Promoting sports development goals in the army is pursued seriously by various institutions and is of significant importance.

3.2 Scenario 2: New World of Sports Development, Health, and Physical and Mental Fitness Seekers

This scenario is formed from the combination of three main uncertainties from the three main drivers, as described

Table 7. Uncertainties Constructing Scenario 2

Driver	Uncertainty
Wellness movement and lifestyle	Partial participation in achieving optimal physical, lifestyle, and mental fitness
Management skills of army sports managers	Improvement of triple management skills
Sufficient budget in national sports	No access to sufficient budget

The status of the drivers in this scenario indicates partial participation in achieving optimal health, improved management skills, but no access to sufficient budget. Promoting health-oriented policy goals is not pursued seriously by various institutions. The long-term impact of this scenario will become evident over time. Positive driver management skills and attention to sufficient budget allocation do not significantly impact the health and performance of the armed forces and the army in the short term, but the long-term effects on army sports development will gradually increase.

Table 8. Uncertainties Constructing Scenario 3

Driver	Uncertainty
Wellness movement and lifestyle	Partial participation in achieving optimal physical and mental fitness
Management skills of army sports managers	Continuation of the current trend

below. This is the most favorable and significant scenario for the health sector, including positive drivers and uncertainties.

below. In this scenario, one driver is in a relative state, one driver is in a favorable state, and one driver is in an unfavorable state. This scenario represents a mixed outlook for sports development, health, and physical and mental fitness, including positive and negative drivers and uncertainties. It partially aligns with the sports development policy goals.

3.3 Scenario 3: Static Land

This scenario is formed from the combination of three main uncertainties from the three main drivers, as described below. In this scenario, two drivers are in a relative state, and one driver is in an unfavorable state. No signs of movement, dynamism, or progress are observed; it represents a scenario for sports development and health that is not aligned with policy goals.

Sufficient budget in national sports

No access to sufficient budget

The status of the drivers in this scenario indicates partial participation in achieving optimal sports and health development. However, there is a lack of attention and weakness in management skills among army sports managers, and no access to sufficient budget. The promotion of sports development and health policy goals by various institutions is not pursued seriously, similar to Scenario 2.

3.4 Scenario 4: Desert Land

This scenario is formed from the combination of three main uncertainties from the three main drivers, as described below. In this scenario, all drivers are in a crisis state, and no signs of movement, dynamism, or progress are observed; it represents a crisis scenario for sports and health, including negative drivers and uncertainties, misaligned with the sports and health development policy goals in the Islamic Republic of Iran's Army.

Table 9. Uncertainties Constructing Scenario 4

Driver	Uncertainty
Wellness movement and lifestyle	No participation in achieving optimal physical and mental fitness
Management skills of army sports managers	Continuation of the current trend
Sufficient budget	No access to sufficient budget

The status of the drivers in this scenario indicates no participation in achieving optimal physical and mental fitness, lack of attention and weakness in management skills among army sports managers, and no access to sufficient budget. The development of sports and health in the army's human resources and involved sectors is severely challenged.

3.5 Formulating the Vision for Sports, Health, and Physical Fitness in the Islamic Republic of Iran's Army

Based on the optimal scenario (Scenario 1) and considering sports foresight and its role in the development policy system of army sports, the vision for army sports development is formulated for the next 10 years as follows: "The Islamic Republic of Iran's Army is an organization with active employees and families, with an acceptable lifestyle, a health-oriented sports culture, and exemplary motivation and vitality. It has integrated management, high-level management skills, necessary infrastructure, and sustainable financial provision, achieving a developed level of sports, physical activity, and overall health."

3.6 Policy Strategies for the Development of Army Sports in the Islamic Republic of Iran

3.6.1 Goal: Encouraging all employees and their families to develop sports and strive to maintain health

Optimal selection of suitable locations for establishing sports facilities and equipment, health-oriented planning based on sports, cultural promotion, and raising public awareness about participation in sports and its impact on health, physical and mental fitness, and job and military performance. Planning and managing the maintenance of sports facilities and equipment, fair distribution of sports services, coordination and interaction among key stakeholders, enhancing and facilitating public participation through the formation of NGOs, redefining the role of sports in health and fitness, analyzing existing obstacles and problems, optimizing leisure time through sports, and developing and implementing forward-looking studies with a sports approach.

3.6.2 High level of management skills

Developing managerial skill assessment indicators and incorporating them into army programs, institutionalizing managerial skills training and enhancement at various levels, effective communication of relevant managers with social institutions, paying special attention to the needs of human resources in sports to increase satisfaction, providing

necessary communication infrastructure for establishing connections among relevant organizations, using other countries' experiences, institutionalizing a sports-oriented mindset in the army, and utilizing national expertise, encouraging startups to offer creative and technology-driven solutions.

3.6.3 Access to sufficient budget in the army

Appropriate and targeted allocation of financial resources to relevant organizations, sustainable financing mechanisms, formulating specific sports policies and goals in the army budget, increasing investment in the development of army sports policies, improving resource allocation to strategic priorities in army sports, necessary training for army sports managers in credits, joint investments, encouraging sports companies to invest in army sports, and utilizing financial experts in army sports.

4. Discussion

This study aimed to analyze the role of foresight in the development of sports in the Islamic Republic of Iran's Army. In today's era, sports play a fundamental role in human life as a social phenomenon, culture, national identity, and profitable industry. Given the current changes and transformations in various social, technological, economic, political, value-based, and environmental fields, which significantly impact various aspects of life and community health, considering national sports macro trends and foresight, which involves being prepared for the future, can utilize available resources optimally to build a desirable future. By understanding the challenges ahead, one can engage in policymaking and management. Therefore, with a mixed-methodology approach and using qualitative tools such as interviews and expert panels, and quantitative tools like the MICMAC questionnaire and Scenario Wizard, efforts were made to identify national sports macro trends. Through literature review and expert opinions obtained via interviews, 30 macro trends were identified and categorized into six general groups: social, technological, economic, environmental, political, and value-based. Then, using cross-impact analysis, these macro trends were analyzed, revealing that the identified macro trends fall into five categories: influential, bidirectional, influenced, independent, and regulatory. Privatization and commercialization in sports, inflation, sports fans, sports diplomacy and communications, depoliticization of sports, development of sports law, membership in international

organizations, professional ethics, and the reform movement are influential macro trends. Energy management, pollution management, and waste management are influenced variables. The wellness movement, public sports development, management skills, sufficient budget, and educational movement are bidirectional variables. Sports NGOs, sports celebrities, sports brands, development of sports applications, smartening sports facilities, designing sports websites, establishing safe and clean waste disposal systems in stadiums, using non-fossil fuels in sports events, and heroic spirit are independent variables. Spiritual health is an independent variable, and the development of media literacy, sports sponsors, and strengthening national identity are regulatory variables. Furthermore, evaluating the mentioned macro trends identified three critical uncertainties with the most impact and influence in the system: the wellness movement and lifestyle, management skills of army sports managers, and sufficient budget. Then, using Scenario Wizard software, four scenarios were identified for the future development of sports, health, and physical and mental fitness of the human forces in the Islamic Republic of Iran's Army. Based on this, the first scenario is the optimal and optimistic scenario for army sports, shaped by very active participation in achieving optimal sports, health, and physical and mental fitness, improvement of management skills of army sports managers, and access to sufficient budget. The second scenario is intermediate with a slight improvement trend. The third scenario is static, continuing the current trend, which, if these macro trends are ignored in the short or long term, will result in an undesirable status for sports and health in the army. The fourth scenario is undesirable and pessimistic, characterized by no participation in achieving optimal sports, health, and physical fitness, lack of attention and weakness in management skills of army sports managers, and no access to sufficient budget.

Therefore, sports hold a special place in the Islamic Republic of Iran's Army, playing a vital role in maintaining physical readiness, enhancing morale and discipline, and promoting a healthy lifestyle. Developing sports in the army requires precise identification and analysis of influential factors.

4.1 Advantages of Using Foresight Methodology:

Forecasting and Analyzing Future Trends: Foresight helps us predict and analyze future trends, allowing for more precise planning for sports development in the army.

Identifying Opportunities and Challenges: Using foresight, one can identify the opportunities and challenges facing sports development in the army and plan to address the challenges and leverage the opportunities.

Strategic Planning: Foresight is a powerful tool for strategic planning. The results of foresight can be used to develop a strategic plan for sports development in the army, achieving desired goals.

In conclusion, based on the mentioned points, recommendations are made to advance the goals of foresight in the development of sports, health, and physical and mental fitness:

Since foresight visualizes unknown aspects of the future by identifying desirable futures, and the surest way to succeed in the future is to build it in the present, managers, policymakers, planners, and other relevant officials should consider all identified macro trends and their interrelationships. Ignoring any of them will not be beneficial and will create gaps in future programs and policies.

Given the obtained results and the scenarios defined from the strategic macro trends, better preparedness for facing the future can be achieved, providing appropriate strategies and solutions. However, no human prediction can be considered absolute; therefore, the resulting scenarios should be periodically reviewed and reassessed based on continuous information gathering for future research.

5. Conclusion

This study aimed to analyze the role of foresight in the development of sports in the Islamic Republic of Iran's Army. In today's era, sports play a fundamental role in human life as a social phenomenon, culture, national identity, and profitable industry. Given the current changes and transformations in various social, technological, economic, political, value-based, and environmental fields, which significantly impact various aspects of life and community health, considering national sports macro trends and foresight, which involves being prepared for the future, can utilize available resources optimally to build a desirable future. By understanding the challenges ahead, one can engage in policymaking and management. Therefore, with a mixed-methodology approach and using qualitative tools such as interviews and expert panels, and quantitative tools like the MICMAC questionnaire and Scenario Wizard, efforts were made to identify national sports macro trends. Through literature review and expert opinions obtained via

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Therefore, sports hold a special place in the Islamic Republic of Iran's Army, playing a vital role in maintaining

physical readiness, enhancing morale and discipline, and promoting a healthy lifestyle. Developing sports in the army requires precise identification and analysis of influential factors.

5.1 Advantages of Using Foresight Methodology:

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Strategic Planning: Foresight is a powerful tool for strategic planning. The results of foresight can be used to develop a strategic plan for sports development in the army, achieving desired goals.

In conclusion, based on the mentioned points, recommendations are made to advance the goals of foresight in the development of sports, health, and physical and mental fitness:

Since foresight visualizes unknown aspects of the future by identifying desirable futures, and the surest way to succeed in the future is to build it in the present, managers, policymakers, planners, and other relevant officials should consider all identified macro trends and their interrelationships. Ignoring any of them will not be beneficial and will create gaps in future programs and policies.

Given the obtained results and the scenarios defined from the strategic macro trends, better preparedness for facing the future can be achieved, providing appropriate strategies and solutions. However, no human prediction can be considered absolute; therefore, the resulting scenarios should be periodically reviewed and reassessed based on continuous information gathering for future research.

Authors' Contributions

M.S.K., the corresponding author, conceptualized the study, designed the research methodology, and supervised the overall implementation of the study. He also led the data collection process and analysis using the foresight methodology. M.N.N. assisted in the identification and categorization of drivers and contributed to the development of future scenarios. M.T. supported the data collection, helped with the literature review, and participated in the analysis of critical uncertainties. S.A.B. assisted with the

recruitment of participants, facilitated the expert interviews, and contributed to the drafting and revising of the manuscript. All authors collaboratively discussed the findings, critically reviewed the manuscript for important intellectual content, and approved the final version for publication.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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