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FUTURE-READY SAFETY PROFESSIONALS IN SAUDI AVIATION SECTOR IN LINE WITH VISION 2030

PROFISSIONAIS DE SEGURANÇA PREPARADOS PARA O FUTURO NO SETOR DE AVIAÇÃO DA ARÁBIA SAUDITA, EM CONSONÂNCIA COM A VISÃO 2030

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Abstract
The fast growth of the aviation industry in Saudi Arabia, as part of Vision 2030, is leading to a bigger need for skilled and up-to-date safety experts. Keeping aviation safe in a fast-changing and high-tech world needs a team that has strong technical skills along with good knowledge in human behavior, managing risks, and making smart decisions. This study looks into the methods and structures required to train safety professionals in Saudi's aviation industry so they can keep up with future challenges. The study uses a qualitative and conceptual method to combine industry knowledge and views on training management. It looks at important topics like building skills, ongoing professional learning, changes brought by digital technology, and a strong focus on safety. The results show that today's safety experts need to have both technical know-how and good people skills, as well as the ability to keep up with new technologies like artificial intelligence and data analysis. The study also highlights the need to match training programs with global aviation standards and the goals of Vision 2030. The research shows that putting money into organized training, learning based on skills, and continuous learning within organizations is important for creating a strong and prepared aviation safety team in Saudi Arabia.

Keywords: Aviation Safety. Safety Professionals. Saudi Arabia. Vision 2030. Training and Development. Human Factors. Safety Culture. Workforce Development.

Resumo
O rápido crescimento do setor de aviação na Arábia Saudita, como parte da Visão 2030, está gerando uma necessidade cada vez maior de especialistas em segurança qualificados e atualizados. Manter a segurança da aviação em um mundo em rápida transformação e de alta tecnologia exige uma equipe que possua sólidas habilidades técnicas, aliadas a um bom conhecimento sobre comportamento humano, gestão de riscos e tomada de decisões inteligentes. Este estudo analisa os métodos e estruturas necessários para formar profissionais de segurança no setor de aviação da Arábia Saudita, de modo que possam acompanhar os desafios futuros. O estudo utiliza um método qualitativo e conceitual para combinar o conhecimento do setor e as perspectivas sobre a gestão da formação. Ele aborda temas importantes como o desenvolvimento de competências, a aprendizagem profissional contínua, as mudanças trazidas pela tecnologia digital e um forte foco na segurança. Os resultados mostram que os especialistas em segurança de hoje precisam ter tanto conhecimento técnico quanto boas habilidades interpessoais, bem como a capacidade de acompanhar novas tecnologias, como inteligência artificial e análise de dados. O estudo também destaca a necessidade de alinhar os programas de treinamento com os padrões globais de aviação e as metas da Visão 2030. A pesquisa mostra que investir em treinamento organizado, aprendizagem baseada em competências e aprendizagem contínua dentro das organizações é importante para criar uma equipe de segurança da aviação forte e preparada na Arábia Saudita.

Palavras-chave: *Segurança da Aviação. Profissionais de Segurança. Arábia Saudita. Visão 2030. Treinamento e Desenvolvimento.*

Fatores Humanos. Cultura de Segurança. Desenvolvimento da Força de Trabalho.

1 INTRODUCTION

The aviation industry is changing a lot because of fast-moving technology, more global connections, and new safety rules. In Saudi Arabia, this change is happening faster because of Vision 2030, a plan that wants to make the country's economy more varied and turn it into a major center for air travel around the world. The growth of airport facilities, more travelers using airports, and new projects in aviation have made flying operations more complicated. In this fast-changing world, safety professionals play an even more important role than before, which means we need to build a workforce that is ready for the future and can handle new challenges as they come up.

In the past, people who worked in aviation safety mainly paid attention to following rules, looking into accidents, and keeping an eye on how things were running. Today's aviation industry requires a more active and connected way of managing safety. Safety experts today need to have a wider range of skills. They must know how to assess risks, understand how people behave in different situations, analyze data, and make good decisions even when there's not enough information. This change shows that more people are realizing safety isn't just about technical skills, but it also needs input from many different areas and constant learning and adjusting.

IIn the context of Saudi Arabia, the demand for safety professionals who are prepared for the future is closely connected to the goals of Vision 2030. The Kingdom wants to be a top player in the global aviation industry, which means following international safety rules and handling big, complicated operations with a lot of flights. As aviation companies grow, they run into issues like building a skilled workforce, keeping training programs consistent, and adding new technologies to their operations. These challenges show why it's so important to have a team that is skilled in their work, can adjust to new situations, stays strong under pressure, and can handle changes in how things are done quickly.

A major part of building this kind of workforce is focusing on training that develops skills and ongoing learning for professionals. Unlike regular training methods that mainly focus on theory, competency-based approaches pay more attention to practical skills, how people behave in real situations, and applying knowledge in actual work scenarios. For safety professionals, this means being able to spot dangers, evaluate how risky they are, talk clearly with others, and decide wisely when things are really tense. From the point of view of training management, creating and putting into action these programs needs a strong grasp of both what the industry needs and how people perform.

Putting people's needs and abilities into safety training has become more important than ever. Human factors include the mental, emotional, and group-related elements that affect how people perform in complicated systems. By including principles that consider how people think and act in training, companies can help workers stay more alert, make fewer mistakes, and achieve better safety results. This is especially important in the Saudi aviation industry, where different groups work together and there's a lot of activity, so good teamwork and clear talking are really needed.

Another big change affecting how safe air travel will be in the future is the move towards using more digital technology. Using new technologies like artificial intelligence, big data analysis, and automation is changing the way safety is handled and watched. Safety experts need to build their skills in using digital tools to better use them for predicting problems, evaluating risks, and helping make good decisions. This change in focusing on using data for safety management shows that ongoing learning and growing in your job are really important.

Besides having good technical and digital skills, it's also really important to create a strong safety culture. This helps in developing professionals who are ready for the future. A good safety culture makes people take responsibility, talk openly about safety, and always look for ways to improve. Safety experts help build a safe work environment by starting safety projects, teaching workers through training, and making sure everyone follows the company's rules. In Saudi Arabia, building a strong safety culture is very important for meeting the high standards needed to keep up with the global aviation industry. Even though these skills are becoming more important, there is still a lack of proper training programs to prepare safety professionals for the future, especially in new

aviation markets. In Saudi Arabia, despite significant investments in infrastructure and technology enhancement, there remains a pressing need to focus more on the development of individuals' skills and competencies. To address this issue, a comprehensive strategy is necessary that encompasses training, the application of technology, and the optimization of organizational processes.

This study wants to find out the main methods and structures needed to develop safety experts who can keep up with future challenges in the Saudi aviation industry. The study aims to find out the key skills, training methods, and organizational elements that help prepare the workforce by mixing in-depth analysis with real-world experiences from managing aviation training. The study also looks at how these factors connect with the bigger goals of Vision 2030, highlighting why it's important to develop aviation in a way that is both sustainable and safe.

In conclusion, as the aviation industry in Saudi Arabia keeps changing, it's very important to develop safety experts who are ready for the future. This is not just a smart business move, but also essential for keeping operations running well and supporting steady growth over time.

2 LITERATURE REVIEW

Studying how to prepare safety professionals for the future has become very important in the aviation industry. This is especially true because the work environment is changing quickly and new technologies are constantly being introduced. The literature shows that aviation safety is not just about following rules anymore. It now focuses on taking action before problems happen, looking at the whole system, and paying attention to how people perform, the culture of the organization, and the ongoing process of learning and improving.

A key idea that supports safety in today's aviation is the use of Safety Management Systems (SMS). Recent research shows that aviation safety has changed from looking mainly at mistakes made by people on the front line to considering bigger system and organization issues that affect safety. SMS frameworks include important parts like safety policies, risk management, safety assurance, and safety promotion. All of these need experts who can understand how people, technology, and organizations work together in

complex ways. This change shows how important it is for safety experts to have strong technical skills and the ability to look at bigger risk issues.

Human factors research highlights how important it is to understand how people perform in situations where safety is a top priority. Recent studies show that human factors in aviation combine several areas like psychology, ergonomics, systems engineering, and physiology. This helps make flying safer and more efficient. These insights from different fields show that safety experts need to know a lot and be able to use approaches that focus on people in real-life situations. The literature also points out important human factors like tiredness, heavy workloads, stress, and being aware of the situation, all of which have a big impact on how decisions are made and how well operations go.

Training and skill building are always seen as key to creating safety experts who can handle future challenges. Old ways of teaching that mainly focus on learning theory are slowly being replaced by new methods that focus on building actual skills. These methods focus on teaching useful skills, expected behaviors, and learning through real-life situations. Studies show that good training on human factors helps workers be more aware of safety and better able to handle difficult situations at work. However, research shows that for this type of training to work well, it needs support from the organization and should fit with the company's culture.

Besides training, a lot of research talks about how experience and being in the profession also play an important role. Research shows that experienced people in aviation are better at finding problems in the whole system, not just blaming individual mistakes. This means that having more experience helps form how safe someone feels and how well they can make good decisions. So, to create professionals who can handle the future, it's not enough to just give them formal education. They also need ongoing experience in real-world work settings.

Another key topic in the literature is how digital transformation is increasingly affecting aviation safety. New technologies like artificial intelligence, big data analysis, and automation are changing the way safety is handled and watched. New studies show that working together with machines is very important in systems where safety is a top priority. This means that people who make sure things are safe need to learn how to use digital tools and work with smart technologies better. At the same time, scholars believe

that technology should support human decisions instead of taking over, which highlights the importance of finding a good balance between using human knowledge and new technology.

Safety culture is also commonly seen as an important part of creating good safety professionals. A strong safety culture encourages people to talk freely, learn from mistakes, and take action to prevent problems before they happen. Studies show that the culture of an organization plays a big role in how well safety training works and how effectively human factors are applied. When workers feel safe to tell about mistakes without getting in trouble, safety experts can more easily find possible dangers and take steps to fix them.

Recent studies that look at how often research is published show that more people around the world are interested in studying human factors and aviation safety. This interest is especially seen in topics like training, managing safety, and using new technologies. This trend shows that more people are realizing how important it is to use different fields together for safety and to train professionals for the challenges ahead. In the case of Saudi Arabia, the literature shows that the fast growth of the aviation industry as part of Vision 2030 brings both good chances and difficult problems. A lot of money has been spent on building infrastructure and improving technology, but more attention should be given to developing people's skills and abilities. Creating safety experts who can handle future challenges means matching training programs with global standards, including human behavior in company routines, and building a solid safety mindset across the organization. In short, the research shows that creating safety experts who can handle future challenges in aviation needs a thorough method that includes understanding human behavior, training based on skills, keeping up with new technology, and shaping a supportive workplace culture. These elements together help improve safety and support long-term growth in the aviation industry. The findings from past research offer a solid starting point for understanding how these factors can be successfully applied in the Saudi aviation sector to help achieve the goals of Vision 2030.

This study adopts a qualitative and conceptual research methodology to explore the development of future-ready safety professionals in the Saudi aviation sector in alignment with Vision 2030. In view of the multifaceted aspect of aviation safety, which incorporates human actions, organization structure, and technology, a qualitative

approach would be ideal to offer a profound perspective on the issue. The methodology is designed to combine theoretical knowledge with practical perspectives derived from professional experience in aviation training management.

3 RESEARCH METHODOLOGY

This study adopts a qualitative and conceptual research methodology to explore the development of future-ready safety professionals in the Saudi aviation sector in alignment with Vision 2030. In view of the multifaceted aspect of aviation safety, which incorporates human actions, organization structure, and technology, a qualitative approach would be ideal to offer a profound perspective on the issue.The methodology is designed to combine theoretical knowledge with practical perspectives derived from professional experience in aviation training management.

3.1 Research design

The study uses a method that looks into and describes things in a general way. The exploratory part is about figuring out the important abilities, skills, and tools that future safety professionals will need, especially as the aviation industry keeps changing quickly. This is important because the idea of "future readiness" in aviation safety is still being worked out and needs a more comprehensive way of looking at things.

The study uses a method that is both exploratory and descriptive in nature. The exploratory part looks at finding the important abilities, skills, and methods that future safety professionals will need, especially as the aviation industry keeps changing quickly. This is important because the idea of "future readiness" in aviation safety is still growing and needs a wider view to understand it better

The descriptive part of the research considers the current training methods, safety management systems, and organizational structures in the aviation industry. This allows for a thorough analysis of how safety practitioners can be well-equipped to handle the challenges of the aviation industry both presently and in the future.

This study doesn't use data gathered directly from people, like through surveys or interviews. Instead, it uses a conceptual synthesis method that brings together existing

research, industry reports, and expert opinions to form useful and clear conclusions. This method is commonly used in aviation safety studies, especially when dealing with important and people-focused problems.

3.2 Data sources

The study uses information from existing sources and knowledge gained from real-life experiences to ensure it is both scientifically accurate and useful in real situations. The main sources of information are:

* Articles from research studies that have been checked by experts in fields like aviation safety, how humans interact with systems, and improving people's skills at work

* Documents and rules created by big groups that work on aviation, like ICAO, IATA, and FAA

* Materials about how to manage safety in aviation and training that focuses on what people should be able to do

* Papers from Saudi Vision 2030 that talk about the country's plans for the future and reports on how the aviation industry is growing

* Instruction books, step-by-step guides, and safety rules that are used by companies in the aviation field

In addition to these sources, professional insights from experience as a Training Manager in the aviation sector are incorporated. These insights provide valuable real-world perspectives on training effectiveness, competency gaps, and challenges in developing safety professionals. This integration strengthens the practical applicability of the research findings.

3.3 Data analysis method

The study uses a thematic analysis method to look at and understand the data that was gathered. Thematic analysis works well for qualitative research because it helps find patterns and connections in complicated data sets.

The analysis process follows these steps

3.3.1 Data familiarization

Looking through a lot of existing research and industry documents to learn about important ideas in aviation safety, how humans interact with systems, and ways to improve the training and growth of workers in the field.

3.3.2 Theme identification

The main topics are found by looking at ideas that come up again and again in the studies, such as:

* Building up skills and creating training plans
* Including human elements in system design
* Using digital changes and learning new technologies
* Promoting a safe work environment and how organizations behave
* Keeping professionals updated with ongoing learning and growth

3.3.3 Theme categories

The themes have been classified into larger groups to determine connections between training approaches, skills, and safety results.

Interpretations:

1. The themes are examined against the backdrop of the Saudi aviation industry, especially with regard to workforce training related to Vision 2030 goals.

4 CONCEPTUAL FRAMEWORK

The paper proposes a conceptual model that explains the relationships among key variables shaping the future readiness of safety professionals. The model shows the impact of training, human factors, technology, and organizational culture on safety performance.

Competency-Based Training	**Focus on practical skills and behavior**	**Enhances decision-making and adaptability**
Human Factors Integration	**Understanding human limitations and performance**	**Reduces errors and improves safety awareness**
Digital Skills	**Use of AI, data analytics, and automation**	**Enables predictive and data-driven safety**
Safety Culture	**Organizational commitment to safety**	**Promotes proactive risk management**

4.1 Justification of methodology

The decision to use a qualitative and conceptual approach is based on the type of research problem being studied. Becoming a safety professional who can handle future challenges requires skills like learning, adapting, and making good decisions, which aren't easy to measure just by using numbers and statistics.

Including professional experience helps add real-world knowledge, making sure the research results can be used in actual aviation situations. This method connects academic ideas with real-world work situations, which is important for research that focuses on improving jobs and training programs.

4.2 Reliability and validity

To ensure the reliability and validity of the study:

- Data is sourced from credible and internationally recognized publications and organizations
- Multiple sources are used to achieve data triangulation
- Themes are derived from consistent patterns across the literature
- Professional insights are used to validate practical applicability

Although the study does not include statistical validation, the use of established frameworks and authoritative sources ensures the credibility and robustness of the findings.

4.3 Limitations of the study

The study has some limitations that need to be noted:

* There is no primary data, which means it's harder to prove the findings with real examples

* The results come from thinking about ideas, so they might not cover all the different ways things work in practice

* The research focuses only on Saudi Arabia, which may make it less useful for other places

But these issues are lessened because the study uses a lot of existing data and includes information from industry experts, making the research more useful and relevant.

5 CONCLUSION

This study looked into the important part that training safety experts for the future plays in the Saudi aviation industry, all while following the goals set out by Vision 2030. As the aviation industry keeps growing and changing, the need for skilled, flexible, and capable safety experts has become more important than ever. Old ways of handling safety in aviation, which mainly focused on following rules and dealing with problems after they happened, aren't enough anymore to handle the complicated situations in today's airline industry.

The study shows that creating safety professionals who can handle future challenges needs a complete method that includes training based on skills, understanding of human behavior, adapting to digital changes, and having a solid safety culture within the organization. Among these, building skills is a key part, allowing experts to use what they've learned in real-world, risky situations. Training programs that use simulation, real-life situations, and ongoing checks greatly improve decision-making skills and prepare people better for actual work

Including people's needs and behaviors in training programs is really important for making safety better at work. Safety specialists can better spot dangers and come up with good ways to deal with them by knowing about human limits like getting tired,

feeling stressed, and having a heavy mental load. This focus on people is especially important in the Saudi aviation industry, where the need to manage complex operations and a diverse group of workers calls for better teamwork and communication.

The study also highlights how more and more digital skills are becoming essential for ensuring safety in aviation. Using advanced technologies like data analytics and automation has changed how safety is managed. To be ready for the future, professionals need to understand complicated data, use technology well, and still use good judgment from humans.

In addition, building a strong safety culture is seen as an important part of helping safety professionals grow and develop. Companies that encourage honest talk, show strong support from leaders, and keep learning ongoing build a place where safety is possible. This kind of culture helps people perform better and also makes the whole organization stronger and more able to handle challenges.

To conclude, the development of future-ready safety professionals is among the strategies for developing the Saudi aviation industry. Through emphasis on training, the implementation of technologies, and business practices aligned with Vision 2030, it will be possible to foster growth, improved safety performance, and competitiveness. In future researches, practical research might be conducted to prove these results and gain more information about aviation safety.

6 RECOMMENDATIONS

From the results obtained from this study, there are some important recommendations that should be implemented by the aviation safety experts in Saudi Arabia to prepare for the future in accordance with Vision 2030. The first recommendation is that the aviation industry should utilize training approaches which emphasize skill-based and behavioral aspects.

Training programs need to include simulated learning, real-life situation analysis, and ongoing assessments to improve how people make decisions and solve problems. It's also a good idea to take regular training and certification courses to keep your skills up to date and support ongoing learning.

Another important thing is to ensure that training on human factors is included properly at every level of aviation work. The organization needs to concentrate on problems such as managing fatigue, maintaining situational awareness, effective communication, and error management. The inclusion of human factors in the day-to-day operations ensures that errors are minimized, thus ensuring safety at all levels.

Thirdly, aviation organizations need to focus on building digital skills so that safety experts can keep up with new technology developments. Training programs need to have parts about data analytics, artificial intelligence, and safety management systems so that professionals can use digital tools well for predicting and handling safety issues before they happen.

Another equally important aspect is that an organization needs to create a good safety culture. An organization needs to cultivate a culture where people can be open, encourage team work while reporting any incident without fear of any consequences, and leaders are fully committed to all safety initiatives. Safety professionals must be involved in decision-making processes by the organization. In addition, government agencies need to create uniform training rules that follow global aviation standards, so that all parts of the industry stay consistent.

Working together between aviation groups, training schools, and government agencies can help share more knowledge and make the workforce better prepared. It's also good to support studies and new ideas in making air travel safer and improving how the workforce is trained and developed. Keeping on investing in research helps find new trends and lets companies prepare for future problems.

By following these suggestions, Saudi Arabia can create a strong, well-trained, and forward-thinking aviation safety team that will help support long-term growth in line with Vision 2030.

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