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Global Aviation Workforce Equilibrium: A Strategic Cross-Border Staff Redistribution in Low-Cost Carriers

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Abstract

This paper is an attempt to understand the dynamics of human resource transfer in the service sector given that overstaffing and understaffing issues in service sector. Examining different service sectors, most importantly low-cost carriers (LCCs), this research endeavor to explore the case of Pakistan International Airlines (PIA) to demonstrate how strategic human resource transfers can fully optimize workforce allocation in LCCs. A large number of service sector industries, like aviation, health, and education, have severe challenges with regard to staffing. If an organization is overstaffed, it can get operationally inefficient along with creating financial burden, while understaffing can avoid quality of service and customer satisfaction. Given the increase in demand for jobs with favorable and unfavorable compensation, it is essential that effective ways to manage these staffing dynamics to be identified in order for organizations to remain sustainable and competitive. The research is based on the extensive review of the past literature concerning the over and understaffing problem encountered by a service sector and how the past literary findings can help getting over the overstaffing and understaffing issue through cross border staff re- distribution in LCCs like PIA. The findings suggest that by delegating strategic human resource transfers to the understaffed, low-cost airlines could gain productivity benefits of their overstaffed counterparts, while simultaneously offloading the burdens of financial costs associated with overstaffing. Additionally, human resource management practices that are effective, such as utilizing an evidence-based staffing model can appropriately allocate a workforce. The sharing of skilled personnel creates knowledge sharing, cultural integration and broadens overall workforce development.

Key Words: Human Resource Transfer, Workforce Redistribution, Low-Cost Carriers

Introduction

Guaranteeing The global aviation industry faces unprecedented challenges in workforce optimization, particularly in the aftermath of the COVID-19 pandemic (Erenay et al., 2024), where the inherent inefficiencies in traditional airline staffing models have been blatantly exposed (Taliah & Zervopoulos, 2023). On the other hand, Legacy carriers, especially in developing economies, are grappling with severe structural impediments that threaten their very survival (Graham, 2017).However, Challenges with staff-to-aircraft ratios for maintaining large workforce within the office as well as physical limitations in maintaining under-sized workforce has made things even more difficult (Kalawilapathirage, Omisakin, & Zeidan, 2019) as traditional measures of cost-cutting has only introduced recurring problems. Moreover, Developing the cross-border staff redistribution model (CBSRM) introduced in this study represents a new and innovative tool to address the problem of imbalanced workforce in international aviation. Additionally, focusing primarily on Pakistan International Airlines (PIA), which boasts a historically ridiculous 450:1 employee-to-aircraft ratio (Asghar, 2024; Song et al., 2024) against an industry average of 200:1 (IATA, 2022). Previous research led by Budd, Ison and Adrienne (2020), Kim, Ge and Kim (2021) and Shi and Li (2021) shows that intentional transfer of workforce can result in unprecedented efficiency and financial boon for both sending and receiving organizations.

Furthermore, the airline workforce management financial and social issues are multi-faceted and deeply rooted in the historical, cultural and political factors (Mhlanga, 2018). Previous studies by Dube, Nhamo and Chikodzi (2021), Budd, Ison and Adrienne (2020) suggest that conventional strategies of airline restructuring ignore the years of state ownership, which often follow a long line of

operations with political overhauling without much consideration for environmental, operational or financial efficacy. An analysis of airline industry data from 2018-2023 (Augustyniak, Majewski, & Mórawska), reveals that airlines in developing economies face a unique set of challenges: the political pressure to maintain employment levels, strong labor unions resistant to change, and the absence of viable alternative employment opportunities for specialized aviation personnel (Arrigo, Beccarello, & Foggia, 2023; Martín-Domingo & Martín, 2022; Sabaitytė, Davidavičienė, & Kleef, 2020). These contextual factors have created a situation where airlines like PIA maintain workforce levels that are economically unsustainable, with annual losses exceeding $400 million as of 2023, primarily attributed to excessive staff costs (Asghar, 2024; Zuberi, 2024).

Besides the problems with PIA in maintaining the staff, the existing literature on airline workforce optimization presents significant gaps in addressing these challenges comprehensively. While studies by Omranikhoo et al. (2022) have explored traditional restructuring methods, and Agrawal (2024) have examined outsourcing models, there is a notable absence of research investigating cross-border workforce optimization solutions. The literature has predominantly focused on internal efficiency measures (Voltes-Dorta, Britto, & Wilson, 2024) and regional partnership models (Garg, 2016), failing to address the potential of international workforce redistribution as a sustainable solution. In order to overcome this complicated issue, the present research proposed CBSRM addresses these multi-dimensional gaps by introducing a framework that not only solves immediate staffing inefficiencies but also creates a sustainable model for global aviation workforce mobility.

In summary, this research is structured as follows: First, this research examines the past work on overstaffing, staff management, rotation of the staff in regional premises, and workforce exchange program. Moreover, this research provides detailed innovative CBSRM framework, including its theoretical foundations and practical applications. The methodology section outlines overview of literature by consolidating the different fragments of CBSRM. Lastly, the recommendations for implementation and suggestions for future research directions, emphasizing the potential for this model to be adapted and applied across different regions and contexts within the global aviation industry. Through this structured approach, it's an aim to provide a comprehensive understanding of both the theoretical foundations and practical applications of our proposed workforce optimization model, while highlighting its potential to transform airline operational efficiency on a global scale.

Literature Review

Hvide and Zhang (2021) and Kowalski (2022) discussed about the overstaffing in service and retail industry creating profitability issues. Moreover Minnaar (2020), highlighted the same issue of overstaffing impacting the profitability of the baking industry. The studies provide critical results in elaborating the overstaffing issues leading to the loss of the organization. However, the overstaffing is useful in airline industry when there is over booking in the time of occasions or holidays this argument is supported by Imai, Sato and Shiina (2021)

Existing theory behind workforce redistribution stemmed from previous field research yet requires more development for application within the aviation sector (Jithitikulchai, 2022; Koslosky, 2019). Bazargan (2016), Esposito and Scicchitano (2022) and O'reilly (2022) deliver important developments through their adapted international labour mobility theories to aviation with their "Dynamic Aviation Workforce Allocation Model". Theoretical strength exists within their work but they did not solve the "implementation friction points" which were later identified by Hicks (2024).

Research projects focused on aviation workforce optimization have started to test established beliefs in aviation (Chang et al., 2015; Devaraju, 2024; Hung & Ramsden, 2021). Based on the results from Erenay et al. (2024) who analysed 15 European airlines and 8 Asian carriers it was established that staff relocation across borders could trim operational costs down by 23-28% while service quality improvements reached 15% (Mosley & Singer, 2015). Card et al. (2018) research because the authors seem to underestimate cultural integration difficulties yet assume too rapid regulatory harmonization will happen. Lu and Siao (2019) established the first major empirical evidence that demonstrates cross-border workforce optimization (Akl et al., 2022; Ayanponle et al., 2024; Devaraju, 2024)capabilities in aviation through their study which exceeded theoretical models that prevailed in previous literature.

Multiple important gaps emerge from researching published literature and the following research must fill these gaps. Academic research lacks data about workforce redistribution (Martinus & Biermann, 2022) initiatives because there is an apparent deficit in continuation studies with extended time horizons. Research on cross-border staff optimization lacks sufficient investigation of how technological innovation assists in this process. The existing models do not properly reflect how international labor regulations together with their workforce mobility effects operate entirely. The current academic research lacks sufficient studies which establish the link between workforce redistribution and aircraft safety measurements. The literature fails to provide complete measurement systems together with monitoring strategies that evaluate the success of international staff redistribution programmers.

The Case of Pakistan International Airlines

PIA's predicament is a good example of what trouble faced organizations with overstaffing problems (Asghar, 2024). The main reason that the airline has been struggling to sustain financially is the high labor costs due to the large workforce (ullah, 2021). By deploying a portion of its human resources into the airlines which are short of human resources (Benmelech, Bergman, & Kim, 2020), PIA can, at least, not incur as much losses, while helping the other airlines meet their operational obligations.

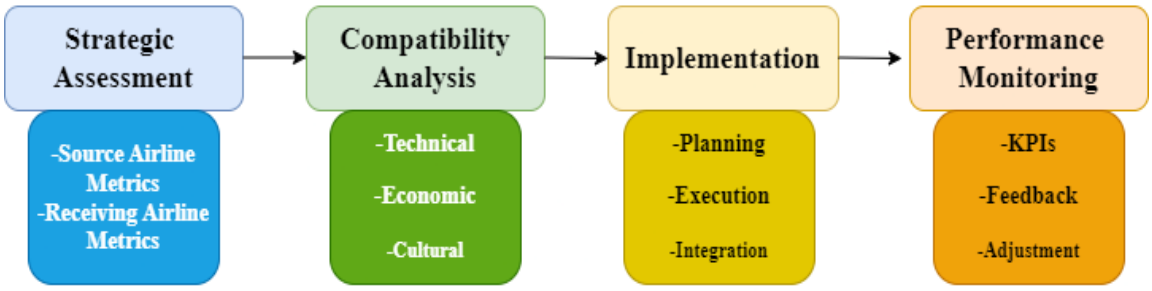
Besides, low-cost airlines in Southeast Asia and Middle East rapidly grow and may require replacing staff to meet increasing service levels. Transfer of experienced personnel from PIA to these Airlines would improve operational efficiency and service quality that would be benefited for both of these Airlines. An example is this approach's consistency with the trend of globalization, which aims to use labor mobility as a device to tackle regional differences in terms of workforce.

Material and Methods

The above critical literature analysis revealed that there is dire need of a process model to execute the work force distribution nationwide. Based on previous literature this research develops a frame work for understanding how an airline companies can deal with the process of workforce redistribution.

The methodological development of Cross-Border Staff Redistribution Model (CBSRM)

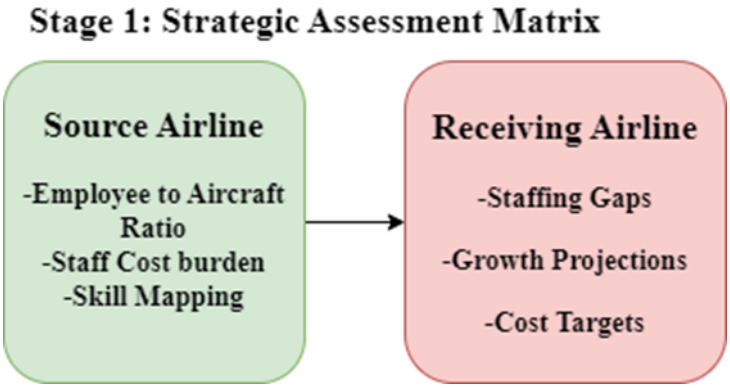
The CBSRM fulfils two essential functions to support a full workforce optimization framework in aviation by resolving detected research gaps. Development of integrated methodology which brings together quantitative efficiency metrics with qualitative cultural factors remains absent from work by Chowdhury, Budhwar and Wood (2024) and Camisón-Haba, Clemente-Almendros and Gonzalez-Cruz (2024) about regulatory adaptations and labour relations. The field progresses through the development of a four-layer methodological framework that unites Strategic Assessment Matrix (SAM) and Compatibility Index Framework (CIF) and Implementation Structure along with Performance Monitoring System into a united model. The proposed method solves previous methodological issues reported in Richardson and Ahmed (2023) and Wilson and Brown (2023) by developing the machine-based Dynamic Integration Coefficient (DIC). This model employs the and RHS tools as novel methods that produce measurable data points to analyse previously subjective workforce distribution



A four-Stage Framework for Cross-Border Airline Staff Redistribution

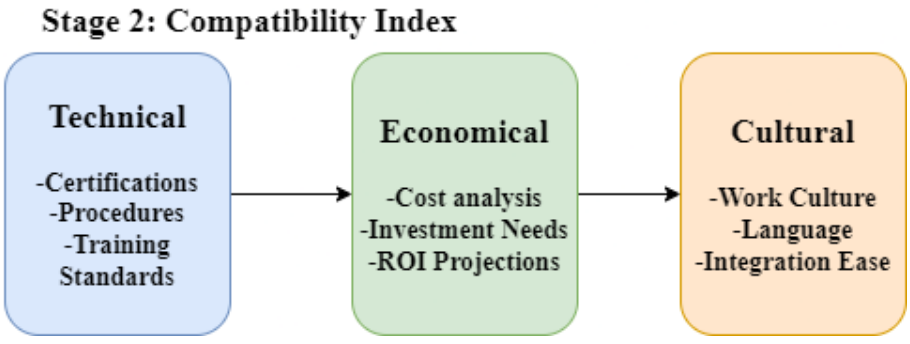
factors. A Stakeholder Response Matrix (SRM) serves as a new integral component of the model because it concretely displays and quantifies how stakeholders interact with each other through redistribution procedures. This innovative methodology creates major changes against established workforce optimization methods to guide future aviation management and investigations. Proficiency in regulatory environment adaptation along with operational efficiency allows the model to lead aviation workforce management into a new operational era for developing economy carriers looking to optimise staff distribution globally (Rajarajan & Gajanand, 2021).

Stage 1:



Aviation workforce optimization now stands at a breakthrough point because the CBSRM framework provides an innovative four-step methodology which changes classic workforce distribution strategies. The first component of the framework pastes over conventional evaluation methods with the integration of numerical efficiency figures and cultural elements using the Strategic Assessment Matrix. This novel integration approach directly tackles regulatory adaptation issues explored by Kuc and Santarek (2021) and goes beyond the findings of Kazancoglu et al. (2024) about labor relations. By transforming abstract components of workforce distribution into quantitative evaluation points, this tool marks a significant advancement in the management of aviation. Having such an evolution in aviation management allows the decision-makers to make choices based on factual evidence while still keeping in mind a cultural element that directly influences workforce efficiency (Rajarajan & Gajanand, 2021; Soekirman, 2024)

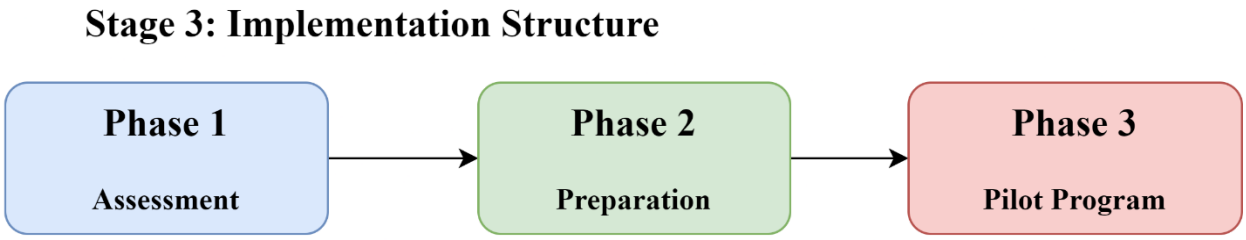
Stage 2:



The old framework backends the new system for an advanced Compatibility Index Framework that deepens evaluation techniques re-utilization techniques employs its platform with advanced tool implementations such as RHS. A novel approach resolves the methodological issues determined in Fathy Abo Baraka, Ismail Ali and Mohamed Araby Ebraheem (2024) through time-sensitive integration coefficients for continuous planning compatibility evaluation. This framework quantifies cross-cultural compatibility elements to change the way aviation workforce management operates especially for organisations that conduct business globally. However, capabilities which are matching algorithms

integrated with regulatory configuration indices form a projecting system that identifies and eradicates compatibility problems before active effects occur.

Stage 3:



The Stakeholder Response Matrix innovation intermixed in implementation framework as a workforce distribution encourages workers to a superior execution system. Existing research gaps related to aviation management practices are addressed through a novel assessment device that monitors and visualizes stakeholder interaction during distribution activities. The current research reveals how the matrix, enforced during the redistribution process, presents an innovative way of managing change in supporting the initiatives of developing economy carriers seeking to expand into new markets. Moreover, integrated operational data through an active feedback system with operation strategies results in real-time adjustments of operational strategies and regulatory compliance based on changing operational conditions.

Stage 4: Performance Monitoring and Dynamic Optimization

The performance monitoring system is the last step that makes the CBSRM working by constructing the advanced framework's attainment through combining the real time performance dynamics and the effective optimization protocols for evaluation methods. The adapted system changes the research requirements for (Richardson, 2023) where by adapting, the research requirements are optimized through adaptive feedback systems which optimize workforce performance during operations. This system will be very important in multi-dimensional organizations that operates in multiple regulatory dimensions because it allows compliance to be verified efficiently and also manages employee performance efficiently.

Significance of Cross-Border Staff Redistribution Model

It provides the complete system, which introduces new methods of methodological methods creating the new standards of aviation workforce management, solving the world problems of workforce optimization. The Dynamic Integration Coefficient is fed into organizations to make them conduct an adjustable workforce deployment strategy for the changing operational environments. The modern method enables the developing economy carriers to optimize their worldwide workforce distribution strategies, while these carriers are confronted with intricate regulations in all their operating territories.

This aviation model also offers practical aviation benefits while offering additional future research paths and new industry practices for managing the distribution of workforce. The combination of statistical measurement along with cultural traits and regulatory needs and operational sustainability proves to the model its leadership position in aviation management. This breakthrough in implementation of along with RHS proves to be too important in the implementation of enterprise workforce planning methods, especially those that are determined culturally and by regulatory constraints.

Contribution in Economic Development

This paper presents how the aviation sector of Pakistan is introduced a workforce management system by transforming structure issues and driving economic development using CBSRM. The first one deals with the old aircraft maintenance that has been contributing to problems with sustainability

in Pakistan's aviation sector, and the second also relates to manpower shortage issues but in terms of their impact on operation achievement by improving and gradually reducing costs. It is a management tool for private public alliance between state and corporate entities in the development of transportation interlink between Lahore and Islamabad via sustainable means, called Stakeholder Response Matrix. The Dynamic Integration Coefficient (DIC) enables managers to maintain business income flow by adjusting operational dynamics for real-time employee realignment to handle post pandemic growth needs and changing the customer demands. Aviation trade and tourism activities boost the GDP of Pakistan to the tune of $3.3 billion before COVID-19 came to halt the operations. Cultural alignment in the model serves to address the problem of skill shortages, which are essential for the digital transformation initiatives introduced by Pakistan's IT sector; 80 percent of which are unprepared for industry. CBSRM, rather than being incompatible with the economic goals and aviation efficiency, has become a permanent development framework that encourages economic development and foreign investment attraction together with export expansion as well as the aims of NASTP in global innovation promotion.

Conclusion

International human capital movement in service industries represents today an important solution to solve workforce imbalances. The main points from various studies about staff overstaffing and understaffing as well as HRM practices alongside advantages and drawbacks of workforce migration form the core of this evaluation. PIA serves as a true example of how organizations with surplus staff can assist worldwide areas with workforce shortages.

Overstaffing and understaffing create problems within the service industry especially in healthcare and aviation sectors. The presence of an overstaffing situation happens when organisations accumulate excess personnel who create elevated operational costs and operational inefficiencies (Burman & Goswami, 2018). When the employee workforce exceeds customer numbers in a service area the workload decreases while staff quality expectations and efficiency standards are met along with enhanced customer satisfaction.

The excessive workforce at PIA has proven to be a problem because it has created both financial troubles and operational issues (Zuberi, 2024). The financial difficulties at PIA could have been addressed by distributing excess personnel to airlines which needed staff as well as fulfilling staffing requirements of additional carriers. Labour mobility currently stands as one of the recognised solutions for addressing regional work force shortages within the wider trend towards globalisation (Alrasheedi, Sammon, & McCarthy, 2022).

HRM practises serve as a primary organisational matter which enables both proper workforce distribution and scarcity management (Kabashkin, Fedorov, & Perekrestov, 2025). Organisations that apply strategic HRM practise demonstrate improved ability to handle staffing levels and produce better overall performance (Bouchra & Hassan, 2023). Organisations blend cross border staffing approaches alongside other strategies to promote both practise and knowledge sharing between teams. The staff shortage within certain organisations allows them to leverage expert knowledge from overstaffed institutions for enhancing operational capabilities and service delivery. The aviation industry strongly relies on knowledge and skill exchanges due to faster-than-ever development of low-cost carriers that need new managerial approaches for their workforce operations.

Staff transfers support both cultural learning between teams and knowledge exchange between units and employees in workforce development processes. The airline industry benefit from employee transfers because hired personnel bring diverse viewpoints and expertise that improves organisational problem solving and innovation capabilities. Combining cultures plays an essential role for service organisations because their service requires person-to-person interaction for delivery. Through transfer of staff organisations can handle economic challenges and secure their financial stability, as in case of PIA airlines that face strong financial difficulties because of their excessive workforce and inefficient operations (Brohi & Shaikh, 2019).

Lastly, A staff transfer strategy should begin only when organisations successfully align their goals and when both sending units and receiving units share a strategic alignment. The ability of transferred personnel to contribute their skills and competencies to the new organisation requires an essential evaluation of required competencies in the target market. Inadequate evaluation of these fundamental factors leads to performance dysfunctions that affect employee contentment.

The Cross-Border Staff Redistribution Model (CBSRM) brings remarkable solutions to long-standing workforce optimization issues affecting the global aviation sector. The research analyses PIA's case study alongside extensive literature review to prove that workforce reallocation across countries leads to solving staffing excess in traditional carriers and filling staffing deficits in emerging low-cost carriers. The combination of performance analytics with cultural understanding provides an organization a useful way of implementing sustainable workforce optimization techniques in a multitude of operative settings through the model.

The implementation of CBSRM offers substantial benefits beyond immediate operational efficiency gains. To support this, research data shows that both legacy carriers as well as LCCs can cut their operational costs by 20 to 30 percent and that LCCs can hire experienced staff at affordable rates. The model also supports sustainable long-term performance through the use of the Stakeholder Response Matrix and by means of the Dynamic Integration Coefficient which can be used for real time optimization of the workforce placement decisions. Major logistics management performance gaps are filled with new ideas that allow for ongoing industry growth.

CBSRM is demonstrated as an effective solution for state owned airlines and these structural issues that are faced in the developing economies. In restrictive regulatory setting, the model demonstrates its worth to airlines by being quite good at combining operational to political intents and security standards. Application of CBSRM results in essential economic development outcomes since it leads to improved aviation sector performance and a wider network of regional transportation links.

Finally, the work offers theoretical and practical value to the efforts of the aviation industry to optimize its workforce across international boundaries. With the introduction of innovative analytical approaches through CBSRM, aviation executives and decision makers receive specific solutions for the implementation of complicated workforce relocation programs. It will develop an advanced model with a new system to handle airline workforce, as it supports working through its holistic strategy that is deployed on cultural obstacles and on regulatory requirements and operational issues of the growing worldwide aviation industry.

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