STATE OF THE POSTAL SECTOR 2024

150 years of the UPU, and beyond

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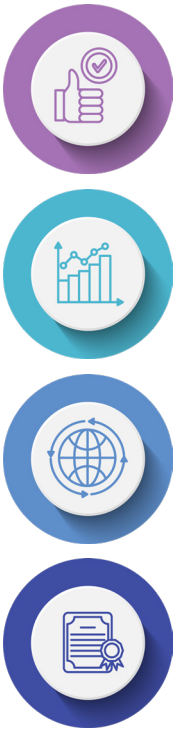

STATE OF THE POSTAL SECTOR 2024

150 years of the UPU, and beyond

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EXECUTIVE SUMMARY

The State of the Postal Sector 2024 report, published in celebration of the Universal Postal Union's 150th anniversary, provides a thorough examination of the evolution of the global postal sector. It offers an in-depth historical analysis, with insights from the Integrated Index for Postal Development (2IPD), and introduces the groundbreaking concept of natural postal development levels, all set against the backdrop of a rapidly transforming global landscape.

HISTORICAL ANALYSIS: 150 YEARS OF POSTAL DEVELOPMENT

Over the past century and a half, the postal sector has experienced dramatic shifts, closely tied to technological advances, societal changes, and global economic trends. Beginning with the founding of the UPU in 1874, the international postal network played a pivotal role in connecting the world.

In 2024, international postal services serve a global population of 7.3 billion, up from 600 million in 1874. This growth, however, has not been linear, with recent years witnessing sharp declines in key areas.

Historically, international letter volumes grew nearly thirty-fivefold between 1874 and their peak in 1991. International parcel volumes, buoyed by the rise of globalization and e-commerce, saw even more impressive growth, expanding nearly eightyfold by 2019. Yet, these achievements have been overshadowed by a sustained decline in internationalization rates for both letters and parcels. By 2024, international letter-post and parcel-post rates fell to just 0.5% and 0.7% respectively, the lowest levels in over a century.

These figures contrast sharply with broader trends in globalization, highlighting a structural mismatch between postal services and the evolving needs of global trade and communication. Domestic parcel volumes, by contrast, have continued to grow, driven by the explosive rise of e-commerce. By 2024, these volumes exceeded 40 billion annually.

However, this domestic success has not translated to international markets, where logistical, regulatory and geopolitical barriers have impeded growth. This divergence illustrates the unique challenges of adapting postal services to a highly interconnected yet fragmented global economy.

INTEGRATED INDEX FOR POSTAL DEVELOPMENT 2024

The 2IPD has emerged as a vital tool for assessing global postal performance. The 2024 edition of the 2IPD refines its methodology to provide a nuanced evaluation of postal systems across four pillars: reliability, reach, relevance and resilience. The index highlights significant disparities between countries, showcasing a world divided between postal leaders and countries struggling to effectively leverage their postal sector.

Industrialized countries like Switzerland and Germany continue to dominate the rankings, achieving scores exceeding 100. These nations boast advanced infrastructures, efficient networks, and strong customer trust.

Conversely, many developing regions, particularly in Africa and Latin America, remain far behind. The median 2IPD score for the Africa region is just 21.0, compared to the global median of 43.0, underscoring persistent challenges such as limited infrastructure and slow technological adoption.

The report also emphasizes the critical correlation between postal reach and reliability. Countries that excel in these dimensions are better positioned to support domestic and international trade, foster e-commerce growth, and contribute to broader economic resilience.

However, the analysis reveals that even some high-performing countries struggle with specific challenges, including the rising costs of last-mile delivery and inefficiencies in international coordination.

NATURAL POSTAL DEVELOPMENT LEVELS: A NEW PERSPECTIVE

In a major conceptual breakthrough, the 2024 report introduces the notion of natural postal development levels, offering a framework to assess a country's postal performance relative to its geographic and economic conditions. This approach shifts the focus from absolute performance to contextualized potential, enabling a deeper understanding of where gaps exist and how they can be addressed.

Natural postal development levels provide a benchmark for identifying discrepancies between expected and actual performance. For example, some middle-income countries, despite favourable economic conditions, underperform due to structural inefficiencies and lack of investment. Conversely, certain low-income countries exceed expectations, leveraging innovative strategies and international support to enhance their postal services. This concept opens new pathways for technical cooperation, allowing the UPU and its member countries to tailor interventions more effectively.

CONCLUSION

The State of the Postal Sector 2024 report presents a compelling narrative of resilience, disparity and opportunity within the global postal sector. It underscores the critical need for innovation, collaboration and targeted investment to address the challenges of declining internationalization, regional disparities, and evolving customer expectations.

By leveraging tools like the 2IPD and embracing the concept of natural postal development levels, the postal sector can chart a course toward renewed relevance and competitiveness in the 21st century.

As the UPU looks ahead to its bicentennial, the actions taken today will determine the sector's ability to adapt, thrive, and continue serving as a vital infrastructure for global connectivity and economic development.

INTRODUCTION

The State of the Postal Sector 2024 report marks a pivotal moment in the history of global postal services, as the Universal Postal Union celebrates its 150th anniversary. Over this century and a half, the UPU has played a critical role in shaping and facilitating international communication, trade and logistics through an ever-evolving postal network.

The global population served by international postal services has expanded from 600 million persons in 1874 to 7.3 billion in 2024 – a twelvefold increase. As a result, international postal exchanges multiplied exponentially, with international letter volumes growing nearly thirty-fivefold from 1874 to their peak in 1991, while international parcel volumes surged almost eightyfold, reaching their highest level in 2019.

During this period, the world has witnessed an extraordinary transformation in how individuals, businesses and governments interact and exchange information and goods, with postal services long serving as a cornerstone of this evolution and continuing to positively impact economic development in many countries. Without postal services, a country's GDP would decline by a median of 7%. (Anson et al., 2023).

However, a long-term analysis of the internationalization of postal services[1] reveals that they now face significant existential threats.

International postal exchanges are at risk of continuing their recent sharp decline, casting doubt on the foundational role the UPU has played in connecting the world over the past 150 years. Without bold reinvention, international postal services – including those supporting cross-border e-commerce logistics – risk disappearing entirely within the next three to five decades, or even sooner.

Drawing on the extensive annual UPU postal statistics dating back to the 19th century, this report provides a first comprehensive analysis of global postal development from the UPU's inception in 1874 to the present day, offering both a long-term historical perspective and insights into the contemporary dynamics shaping today's postal landscape.

As postal systems worldwide confront the challenges and opportunities of the digital economy, e-commerce and global trade, this report also looks to the future – offering forecasts and scenarios for international postal development over the next 50 years, from 2025 to 2074.

Structured in four distinct sections, the 2024 State of the Postal Sector report first takes a long view, exploring the statistical history of global postal development, backed by detailed analysis of 148 years of UPU postal statistics.

Continuing on this broad theme, the second section focuses on the evolution of international postal services, reflecting on the sector's highs and lows and laying out potential future scenarios for international postal exchanges. These scenarios underscore the growing impact of digital transformation, e-commerce and global logistics on the future of the postal industry, as the postal internationalization rate has declined significantly – from a peak of 5.5% for letter-post and 7.3% for parcel-post exchanges in 1913 to just 0.5% and 0.7%, respectively, in 2024.

The third section then zooms in on recent events – specifically, the most recent results from the Integrated Index for Postal Development (2IPD). It introduces the updated 2IPD methodology, which has been fine-tuned to take account of the complex dynamics of modern postal services and highlights 10 Postal Development Levels (PDLs).

Finally, the fourth section introduces the concept of natural postal development, offering a new approach to estimating potential development gaps – whether positive or negative – based on what a country's geographic and economic conditions would naturally suggest for its postal development. It will show that many countries still fall short of reaching their full postal development potential.

As highlighted in previous reports (Anson et al., 2022, 2023), significant postal development asymmetries across nations continue to limit the global potential for the internationalization of postal services. These asymmetries are closely tied to postal reliability and reach, as reflected in the 2IPD, and will play a crucial role in determining the future relevance and resilience of the UPU as a multilateral institution.

Despite 150 years of work by the UPU, the inter-nationalization of postal services continues to face significant challenges.

The rich data, analysis and scenarios in this new edition of the State of the Postal Sector report are designed to guide both current and future policymakers, postal operators and stakeholders in navigating the complexities of a changing environment, while ensuring that postal services remain a vital infrastructure for communication and commerce in the 21st century.

1 Postal internationalization refers to the share of international postal items, whether letters or parcels, in relation to the total volume of postal deliveries, including both domestic and international flows.

SECTION 1

REFLECTING ON 150 YEARS OF SERVING HUMANITY

CHAPTER 1

1874–2024: A STATISTICAL HISTORY OF POSTAL DEVELOPMENT

UPU POSTAL STATISTICS: PIONEERING THE HISTORICAL DEVELOPMENT OF STATISTICAL SYSTEMS

The UPU's Postal Statistics will mark their 150th anniversary in 2025. Since 1877, the UPU has published annual statistics on key indicators, including postal infrastructure, employment, traffic by service category, revenues and financial results for each member country (see Figure 1). The first year covered by these statistics was 1875, reflecting the year following the establishment of the UPU in 1874.

The establishment of the UPU statistical system in 1875 can be compared to the development of other official statistical systems during the 19th century, particularly those associated with national governments and international collaborations.

One notable comparison is with the International Statistical Institute (ISI), which was formally founded in 1885. The ISI emerged from a series of International Statistical Congresses initiated by Adolphe Quetelet in 1853. These congresses were among the first attempts to foster international cooperation in the field of statistics, aiming to standardize statistical methods and facilitate the exchange of statistical information across countries.[2]

Another comparison can be made with national statistical systems, such as France's Central Bureau for Statistics established in 1883, and the Hungarian Central Statistical Office founded in 1876. These institutions were part of a broader movement in Europe during the 19th century to create official bodies responsible for the collection and analysis of statistical data to support government functions and inform the public.[3]

These developments reflect a growing recognition during the 19th century of the importance of systematic data collection and analysis in both national and international contexts, paralleling the UPU's efforts to standardize postal statistics globally

LONG-TERM EVOLUTION OF KEY POSTAL DEVELOPMENT INDICATORS

To conduct a meaningful historical analysis of postal statistics from 1874 to 2024, we first needed to identify the indicators with the highest degree of comparability over this extensive time period.

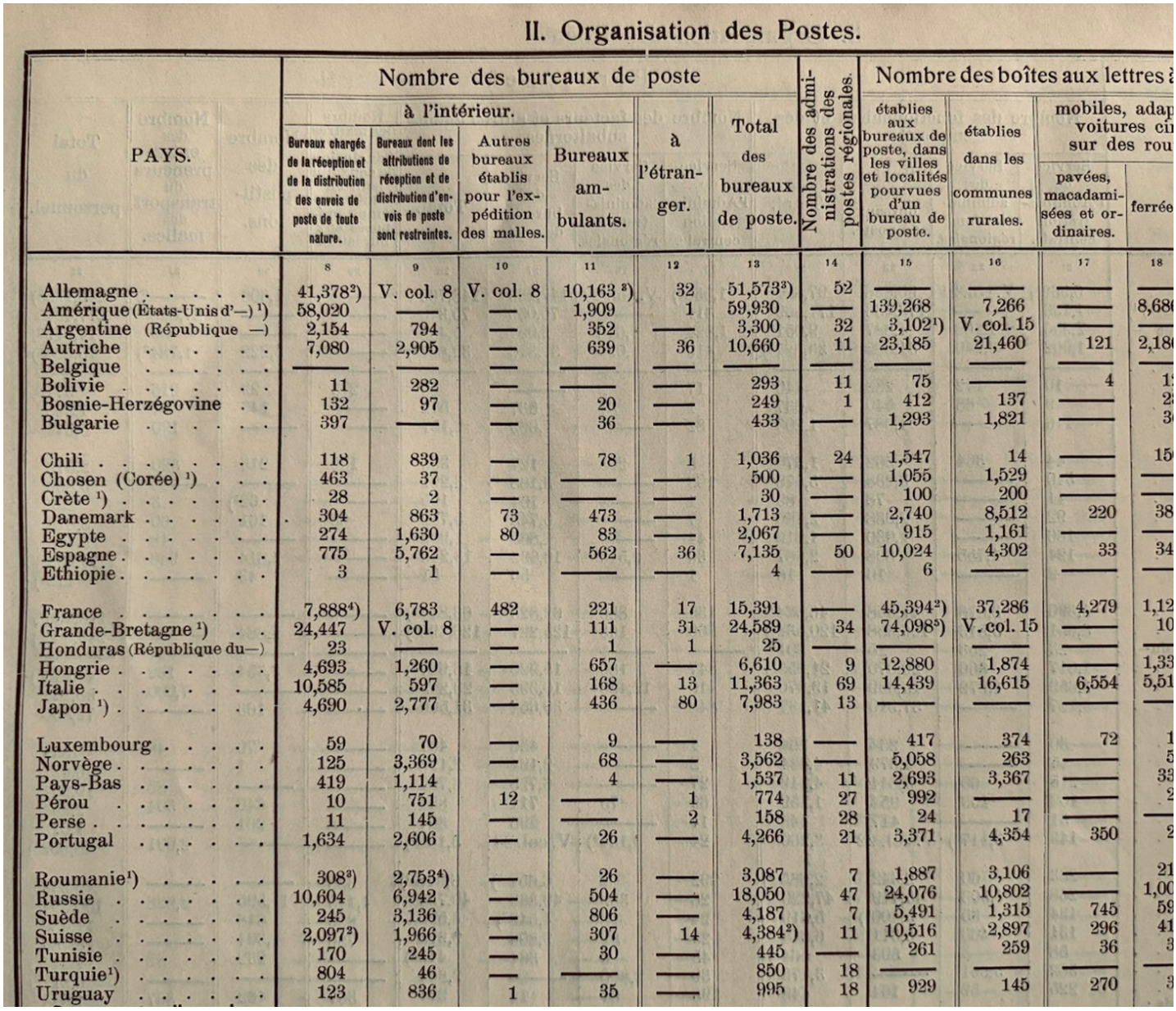
While the definitions of postal network, employment and traffic indicators have evolved, the detailed disaggregation of services, workforce and network characteristics allowed us to reconstruct a consistent time series, covering comparable services, jobs and infrastructure over the years.

However, harmonizing statistics related to postal financial services proved more challenging, as these services have historically been concentrated in a limited number of countries and lacked consistent global data over time. Furthermore, revenues and financial

2 www.isi-web.org/history-isi.

3 unstats.un.org/unsd/dnss/docViewer.aspx?docID=125.

Figure 1: **Extract from UPU Postal Statistics for the year 1913**



II. Organisation des Postes.

PAYS.	Nombre des bureaux de poste à l'intérieur. Bureaux chargés de la réception et de la distribution des envois de poste de toute nature.	Bureaux dont les attributions de réception et de distribution d'envois de poste sont restreintes.	Autres bureaux établis pour l'expédition des malles.	Bureaux ambulants.	à l'étranger.	Total des bureaux de poste.	Nombre des administrations des postes régionales.	Nombre des boîtes aux lettres à établies aux bureaux de poste, dans les villes et localités pourvues d'un bureau de poste.	établies dans les communes rurales.	mobiles, adap voitures ci sur des rou pavées, macadamisées et ordinaires.	ferrée
	8	9	10	11	12	13	14	15	16	17	18
Allemagne	41,378[2])	V. col. 8	V. col. 8	10,163[3])	32	51,573[3])	52				
Amérique (États-Unis d'—)[1])	58,020			1,909	1	59,930		139,268	7,266		8,68
Argentine (République —)	2,154	794		352		3,300	32	3,102[1])	V. col. 15		
Autriche	7,080	2,905		639	36	10,660	11	23,185	21,460	121	2,18
Belgique											
Bolivie	11	282				293	11	75		4	1
Bosnie-Herzégovine	132	97		20		249	1	412	137		2
Bulgarie	397			36		433		1,293	1,821		3
Chili	118	839		78	1	1,036	24	1,547	14		15
Chosen (Corée)[1])	463	37				500		1,055	1,529		
Crète[1])	28	2				30		100	200		
Danemark	304	863	73	473		1,713		2,740	8,512	220	38
Egypte	274	1,630	80	83		2,067		915	1,161		
Espagne	775	5,762		562	36	7,135	50	10,024	4,302	33	34
Ethiopie	3	1				4		6			
France	7,888[4])	6,783	482	221	17	15,391		45,394[2])	37,286	4,279	1,12
Grande-Bretagne[1])	24,447	V. col. 8		111	31	24,589	34	74,098[5])	V. col. 15		10
Honduras (République du—)	23			1	1	25					
Hongrie	4,693	1,260		657		6,610	9	12,880	1,874		1,33
Italie	10,585	597		168	13	11,363	69	14,439	16,615	6,554	5,51
Japon[1])	4,690	2,777		436	80	7,983	13				
Luxembourg	59	70		9		138		417	374	72	1
Norvège	125	3,369		68		3,562		5,058	263		5
Pays-Bas	419	1,114		4		1,537	11	2,693	3,367		33
Pérou	10	751	12		1	774	27	992			2
Perse	11	145			2	158	28	24	17		
Portugal	1,634	2,606		26		4,266	21	3,371	4,354	350	2
Roumanie[1])	308[3])	2,753[4])		26		3,087	7	1,887	3,106		21
Russie	10,604	6,942		504		18,050	47	24,076	10,802		1,00
Suède	245	3,136		806		4,187	7	5,491	1,315	745	59
Suisse	2,097[2])	1,966		307	14	4,384[2])	11	10,516	2,897	296	41
Tunisie	170	245		30		445		261	259	36	3
Turquie[1])	804	46				850	18				
Uruguay	123	836	1	35		995	18	929	145	270	3

Source: UPU.

performance indicators were difficult to harmonize owing to the changing monetary systems, fluctuating exchange rates, and the absence of standardized global inflation measures over this period. As a result, our historical analysis focuses on non-monetary indicators – such as the postal network, employment, letter post and parcel post – which were more universally developed across all UPU member countries.

The reader should interpret the letter and parcel indicators in a broader sense, rather than strictly adhering to the definitions used in current UPU postal statistics. For example, small packets are grouped with parcels and incorporated into the parcel-post category to ensure consistency across our long-term time series. Additionally, the indicator values for the initial and final years, 1874 and 2024, were statistically estimated, as actual postal statistics are only available from 1875 to 2023. This approach allows us to maintain a coherent historical narrative while acknowledging the necessary adjustments made for continuity over this extensive period.

Our analysis begins in 1874, the year the UPU was founded, and extends to 2024, capturing long-term postal trends. Table 1 provides the complete reconstruction and estimation of the data used for this analysis, highlighting the evolution over the years.

The choice of years used in the table is based on key historical moments that reflect critical postal and societal shifts. The data for 1880 allows us to observe the initial impact of the UPU's creation on the early development of global postal systems.

The year 1900 marks the turn of the century and reflects the maturation of postal infrastructure and services as countries industrialized. By 1913, at the eve of the First World War, the world had reached the peak of the first wave of globalization, and this is mirrored in the rapid growth of international postal exchanges.

The year 1934 is representative of the interwar period, capturing the postal sector's response to the Great Depression, economic turmoil, and rising protectionism. Moving to 1961, we capture the midpoint of the "Thirty Glorious Years" of post-war economic growth, a period during which postal services expanded significantly alongside booming economies. The selection of 1989 marks the end of the Cold War and the collapse of barriers between East and West, which had a profound effect on the global postal network, leading to increased integration.

In 2000, the new millennium heralded a new digital age, sparking significant transformations in

Table 1: **Key postal statistics (1874–2024)**

INDICATOR	1874	1880	1900	1913	1934	1961	1989	2000	2006	2019	2022	2024
Domestic letter items (billions)	6.2	8.0	30.9	45.7	53.5	159.2	392.6	432.0	423.5	300.2	245.3	196.3
International letter items (billions)	0.2	0.3	1.7	2.6	2.6	4.4	7.7	7.4	5.2	2.4	1.6	1.0
Letter-post internationalization rate (percentage)	3.7	4.0	5.2	5.3	4.7	2.7	1.9	1.7	1.2	0.8	0.6	0.5
Domestic letter-post items per capita	10.3	12.2	33.2	41.4	27.6	69.4	83.9	77.1	70.9	43.1	34.3	26.9
International letter-post items per capita	0.4	0.5	1.8	2.3	1.4	1.9	1.7	1.3	0.9	0.3	0.2	0.1
Domestic parcels (billions)	0.1	0.2	0.9	1.3	1.7	3.5	4.0	6.4	7.2	28.1	35.9	40.2
International parcels (millions)	10.0	14.1	71.4	108.7	64.3	128.0	124.4	115.2	147.1	796.4	324.0	291.6
Parcel-post internationalization rate (percentage)	7.1	7.4	7.7	7.7	3.7	3.5	3.0	1.8	2.0	2.8	0.9	0.7
Domestic parcels per capita	0.2	0.3	0.9	1.2	0.9	1.5	0.8	1.1	1.2	4.0	5.0	5.5
International parcels per capita	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Letter-parcel ratio	46.7	45.3	36.0	35.2	31.5	44.9	98.6	67.5	58.5	10.7	6.8	4.9
Population with access to international postal services (billions)	0.6	0.7	0.9	1.1	1.9	2.3	4.7	5.6	6.0	7.0	7.2	7.3
Post offices (thousands)	91.7	110.4	211.3	276.8	392.1	418.8	556.2	678.2	651.5	674.9	676.4	689.9

communication methods that began to challenge traditional letter-post services. The year 2006, just before the Great Recession, represents the final stages of sustained economic growth before a global downturn that had significant repercussions on postal traffic and infrastructure investments.

The choice of 2019 reflects the last pre-COVID year, representing a high point in global postal traffic before the pandemic's disruptions, while 2022, as the first post-pandemic year, illustrates the resilience and adaptation of postal systems to new challenges.

Each of these years represents a juncture where political, economic and societal developments had a direct influence on postal operations, reflecting the sector's ability to adapt to – and sometimes mirror – the broader changes occurring globally. These choices allow us to construct a coherent narrative of postal evolution, from its role as a facilitator of communication and trade to its current position within the digital economy

Access to postal services

To begin our analysis, the evolution of the post office network is often a key indicator of how access to postal services has developed over time.

As shown in Figure 2, the global number of post offices increased from 91,701 in 1874 to 676,354 in 2024, peaking at 678,177 in 2000 – representing more than a sevenfold rise over the last 150 years. This continued growth in the number of post offices underscores their enduring importance as a key asset for successful postal development over time, even in the modern era.

Recent UPU research (UPU, 2024) also shows that sufficient access to postal infrastructure can generate positive spillover effects, contributing significantly to the achievement of national Sustainable Development Goal (SDG) targets.[4]

However, the relative plateau in the number of post offices since 2000 suggests that engagement with postal customers is increasingly being maintained through new physical access alternatives, redefining the proximity of postal services to their users. In 1880, there were 5,971 inhabitants per post office globally, whereas by 2022 this figure had risen to 10,581, underscoring not only the changing dynamics of postal access and service delivery in advanced economies, but also a significant lack of investment in postal infrastructure in many developing countries, which now threatens the relevance of their postal services.

In addition to the growth in post offices, the number of postal employees increased steadily over a span of

132 years, highlighting the traditionally labour-intensive nature of delivering postal services. However, the last two decades have seen a significant shift, with postal employment transitioning from historical growth to a notable decline.

Postal infrastructure has become more capital-intensive, driven by the adoption of advanced automation and new industrialized processes for handling mail and parcels. Even though the most advanced postal companies have significantly transformed their industrial infrastructure, postal services remain fundamentally reliant on human labour, with nearly 4.5 million workers employed globally in 2024. While large-scale robotization of sorting and delivery operations, along with the introduction of autonomous transportation, could further reduce the workforce in the coming decades, postal services will continue to rely on human labour for many essential functions.

Evolution of letter post

While postal infrastructure and employment have shown remarkable resilience in adapting to changes in the postal environment – such as market liberalization, corporatization or privatization of postal companies, and advancements in information and communication technology – the same cannot be said for the evolution of postal traffic between the 19th and 21st centuries.

As shown in Figure 3, 2024 international letter-post traffic is estimated to be at the same level observed in 1888, effectively erasing more than a century of international growth in just the past 35 years.

Domestic letter volumes have similarly regressed, now standing at levels comparable to those seen 60 years ago, in 1964.

This sharp decline in mail volumes coincides with the exponential rise of new electronic communication methods. International letter post, in particular, has been a leading indicator of this shift, leaving the postal industry with just one billion international, and fewer than two hundred billion, domestic letter items in 2024.

This trend is further reflected in the mail-per-capita figures shown in Figure 4, where international letters peaked at 2.3 per person in 1913, just before the First World War, followed by a long and continuous decline. Domestic letter volumes per capita reached their high point in 1989 with 83.9 items per person, but have since rapidly dropped to just 26.9 delivered items.

4 No spillover effects on the achievement of national SDG targets are found above a threshold of 100,000 inhabitants per post office (UPU, 2024).

While these declines are stark, a residual volume of international letter post is expected to persist, sustained by essential cross-border communications, legal documents and niche markets that continue to rely on physical mail (UPU, 2024).

This remaining volume ensures that value-added international postal services will maintain their relevance within the broader global postal ecosystem, particularly in regions where electronic access is limited or unreliable.

Similarly, domestic letter post will retain a vital role in sectors such as governmental communications, direct mail and rural deliveries, where it offers unique advantages over digital alternatives.

Additionally, letter post remains an essential service for certain demographics, particularly within aging populations, who may be less inclined or able to fully adopt digital communication, and could also see a resurgence in popularity among younger generations experiencing digital fatigue.

Looking ahead, we estimate that the decline would likely follow an inverted S-curve (UPU, 2023), with the rate of decrease eventually slowing, leading to a softer landing for postal services than might be anticipated today.

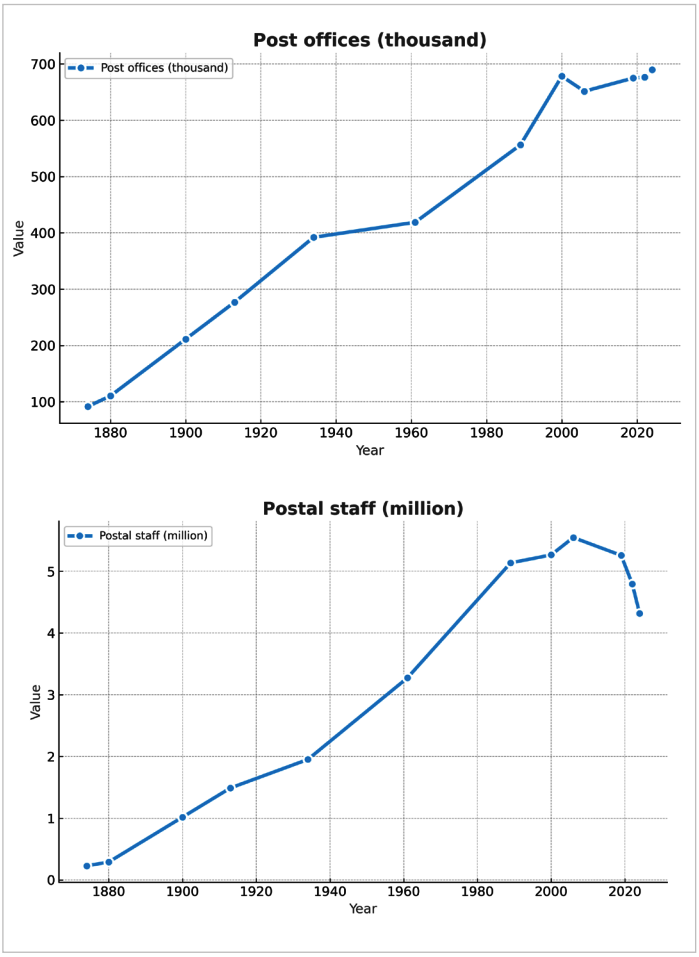
Evolution of parcel post

Parcel post tells a very different story from letter post.

As shown in Figure 5, domestic parcel volumes steadily grew throughout the 20th century, already surpassing one billion items shortly after the turn of the century in 1902. From there, domestic parcel volumes continued to rise gradually, with a significant surge starting in the early 2000s – growing from 6.3 billion items – reflecting the rapid growth of e-commerce and global logistics networks. By 2024, domestic parcel volumes had exceeded 40 billion items, showing a clear upward trajectory.

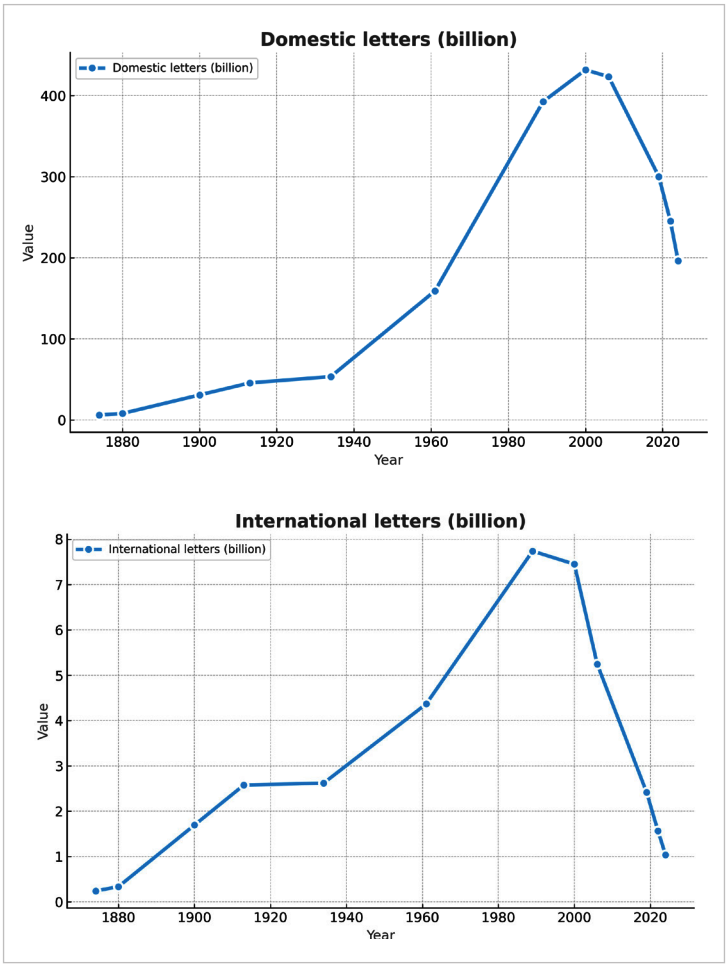
We estimate this growth to follow an S-curve, with an inflection point marking the deceleration of growth likely triggered by the full universalization of Internet access across the globe, as digital integration reaches saturation and parcel demand stabilizes in the future.

Figure 2: **Number of post offices and postal workers (1874–2024)**



Source: UPU.

Figure 3: **Letter post traffic (1874–2024)**



Source: UPU.

In contrast, international parcel and small packet volumes have followed a more volatile trajectory. After peaking notably in 2019, they experienced a sharp decline of nearly 60% by 2024. This stark divergence highlights the growing dominance of domestic parcel services, fuelled by rising demand for fast and reliable local deliveries driven by e-commerce during the pandemic.

Meanwhile, international postal exchanges related to cross-border e-commerce have faced more complex challenges (Anson et al., 2023), including regulatory, taxation and security issues, fluctuating trade and postal policies, logistical disruptions due to COVID-19, and shifts in operational and business models for handling these flows.

Despite these challenges significantly hindering the post-pandemic recovery of international volumes, these volumes remain three times larger than before the online shopping boom and more than ten times the volume seen at the inception of the UPU in 1874. The contrast between domestic and international markets reflects the differing pressures and dynamics at play: domestic markets have thrived on streamlined national networks and evolving consumer habits, while international markets continue to grapple with global uncertainties and complexities.

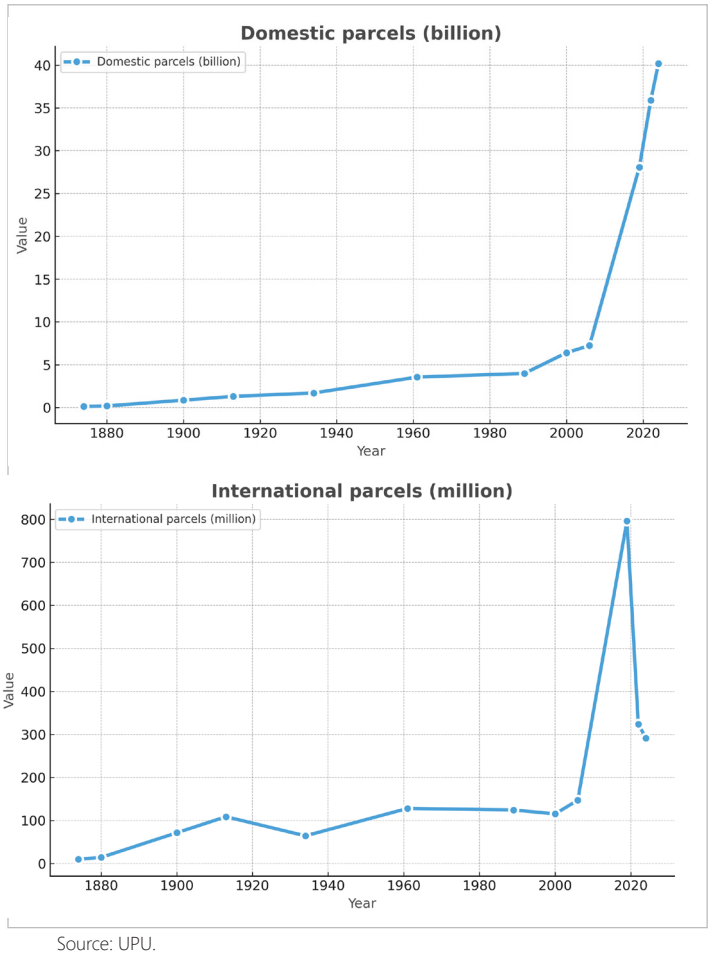
The analysis of parcels per capita (Figure 6) underscores this point even further. Wars, trade tensions, viruses and economic recessions have a much greater impact on international volumes than on domestic ones.

A clear illustration of this is the greatest collapse in international parcels per capita during the first half of the 20th century, from 10 parcels per 100 inhabitants to just three between 1913 and 1934. This sharp decline resulted from the combined effects of the First World War, the "Spanish flu"

Figure 4: **Per capita mail volumes (1874–2024)**

Source: UPU.

Figure 5: **Parcel post traffic (1874–2024)**



Source: UPU.

pandemic, the rise of global protectionism following the Smoot–Hawley Act of 1931, and the economic devastation of the Great Depression in the 1930s.

Evolution of letter-parcel ratio

The letter-to-parcel ratio over time further illustrates the ongoing transformation within the postal industry.

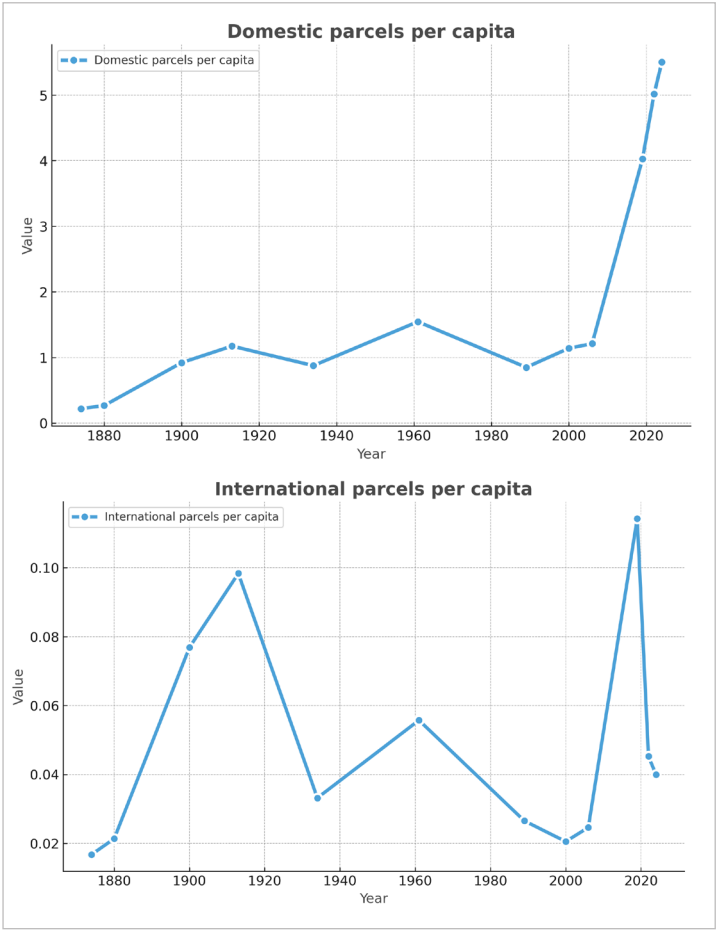
As shown in Figure 7, historically, the ratio remained high, reflecting the dominance of letters in postal traffic. However, the steady decline of this ratio, particularly in the past few decades, highlights the shift towards parcel post as e-commerce and global trade have redefined postal services.

The sharp drop in the letter-to-parcel ratio from nearly 100 in 1989 to just under five in 2024 is a testament to the changing nature of postal demand, with parcels becoming the core of modern postal operations.

This shift also underscores the broader trends within global communications and logistics. As letters continue to decline in relevance owing to digital alternatives, parcels have surged, driven by consumer behaviour changes and the rise of e-commerce. The postal sector's ability to adapt to these shifts will determine its future success, particularly as it navigates the complex landscape of international trade, digital communication, and evolving consumer expectations.

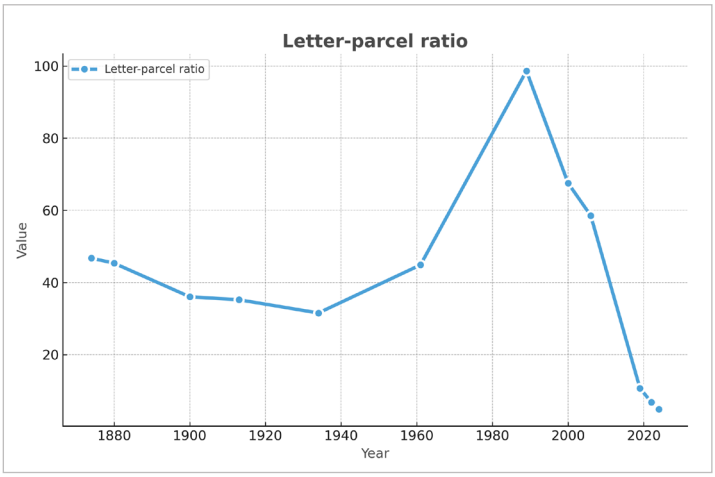
The declining letter-to-parcel ratio is not just a statistic – it is a reflection of the postal sector's ongoing adaptation to the demands of the 21st century.

Figure 6: **Per capita parcel post (1874–2024)**



Source: UPU.

Figure 7: **Letter-to-parcel ratio (1874–2024)**



Source: UPU.

CHAPTER 2

EVOLUTION OF THE INTERNATIONALIZATION OF POSTAL SERVICES AND FUTURE SCENARIOS

THE RISE AND FALL OF POSTAL INTERNATIONALIZATION

Postal internationalization refers to the share of international postal items, whether letters or parcels, in relation to the total volume of postal deliveries, including both domestic and international flows.

In this context, the internationalization of letter post and parcel post represents the percentage of letters and parcels, respectively, that are exchanged across borders relative to the total number of postal items handled globally. This metric provides insight into the degree of cross-border postal activity, with higher internationalization rates indicating a greater reliance on international postal exchanges. Similarly, globalization in an economic context is commonly measured by the percentage of exports in relation to total GDP, reflecting the importance of international trade in the global economy.

We compare the evolution of postal internationalization with broader trends in globalization. While globalization has generally increased over time, driven by expanding international trade, postal internationalization – both for letter post and parcel post – has shown a more complex trajectory, influenced by technological, political, regulatory and economic factors.

The rise and fall of postal internationalization over the past 150 years closely mirrors the broader trends of globalization, as measured by trade as a percentage of global GDP. However, while trade globalization experienced strong growth from the late 19th century to the early 21st century, international letter post and parcel post have not always followed the same trajectory, with clear divergences appearing over time.

In the late 19th and early 20th centuries, both postal internationalization and global trade grew in parallel, supported by expanding international communication and trade networks during the first wave of globalization.

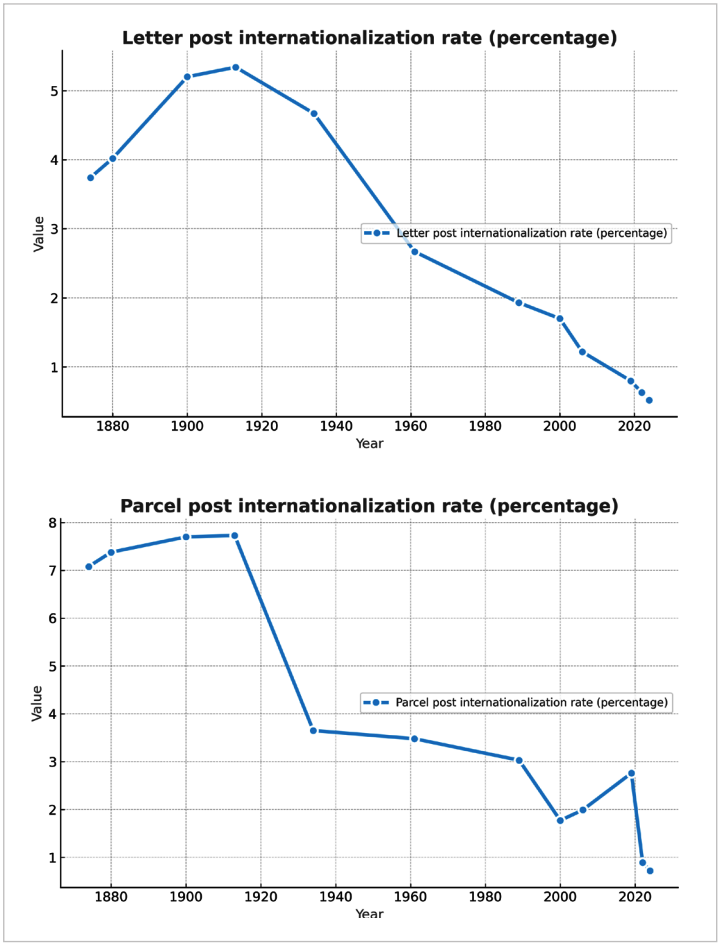
As shown in Figure 8, the period leading up to the First World War was marked by a strong rise in international letter and parcel exchanges, as indicated by the increasing share of international postal items in total postal deliveries.

The internationalization of letter post reached its peak of 5.3% in 1913, coinciding with the peak of the first wave of globalization, as measured by trade's share of global GDP (i.e., total exports to GDP), which hovered around 14%.

International parcel post followed a similar trend, reaching its highest internationalization rate of 7.3% in 1913, highlighting the role of parcels in international trade. These early decades of international postal growth reflected a world increasingly interconnected by trade and communication, supported by the efforts of the UPU to standardize and simplify cross-border mail exchanges.

A first major fact to remember from this analysis is that the internationalization of postal services has consistently been lower than the globalization of the economy.

Figure 8: **Internationalization rates for letter and parcel post (1874–2024)**



Source: UPU.

Even at their peaks in 1913, when letter post and parcel post reached internationalization rates of 5.3% and 7.7% respectively, both were still only a fraction of global trade flows, which accounted for around 14% of GDP (Figure 9).

This persistent gap highlights the fact that, while global trade flows grew rapidly, the postal sector – particularly for letters and parcels – remained more localized in nature. Despite the international connectivity provided by postal networks, the majority of postal items were still exchanged domestically.

This divergence has remained a defining characteristic of postal services, even as the global economy became more interconnected.

While it has always been clear that the internationalization rate of postal services is lower than that of the global economy, an increasing divergence over time signals deeper, fundamental structural issues in international postal development.

This divergence raises important questions about how international postal exchanges are governed by the UPU and whether the current structures and policies are sufficient to adapt to the rapidly changing global trade and communication landscape.

Understanding this divergence is crucial for rethinking the role of international postal services in a highly globalized, digital economy. Indeed, from the 1950s onward, a greater divergence began to emerge between the trends in globalization and postal internationalization.

While trade globalization suffered temporary setbacks due to wars, economic recessions and protectionist policies, it eventually rebounded, especially after the Second World War. By the 1980s and 1990s, globalization saw rapid growth, with global trade reaching unprecedented levels, spurred by technological advancements and trade liberalization.

By the early 2000s, trade as a percentage of global GDP surpassed 20%, marking the second wave of globalization (Figure 10).

In contrast, the internationalization of letter and parcel post did not follow this recovery. Both letter-post and parcel-post internationalization rates experienced sharp declines starting after the First World War. The international letter-post rate fell consistently from its peak of 5.3% to just 1.7% in 2000 (Figure 3), while international parcel post dropped from 7.7% to 1.8% over the same period (Figure 5).

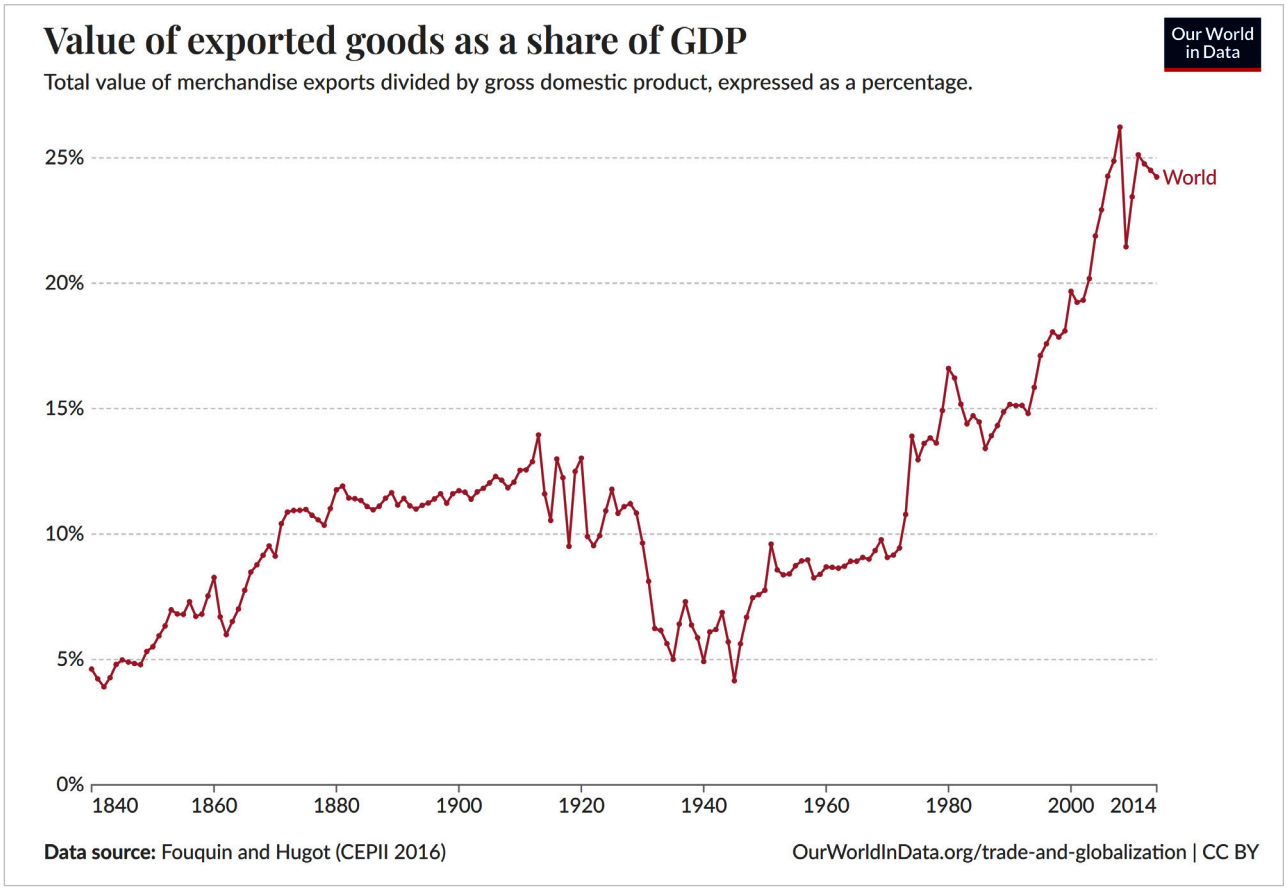
This stark contrast highlights the fact that, while global trade was expanding, postal services not only faced growing competition from new communication technologies – such as telephones, fax machines, and eventually e-mail and digital platforms – but also from emerging business-to-business (B2B) players, namely global express companies, or integrators, which gained prominence in the 1980s.

Unlike most national postal operators, these integrators rapidly capitalized on innovations like international track-and-trace systems and offered faster, more reliable cross-border services tailored to the demands of modern businesses and consumers.

Despite having the advantage of an established global postal network and a unique multilateral framework through the UPU, many national postal companies struggled to adapt to these shifting market dynamics.

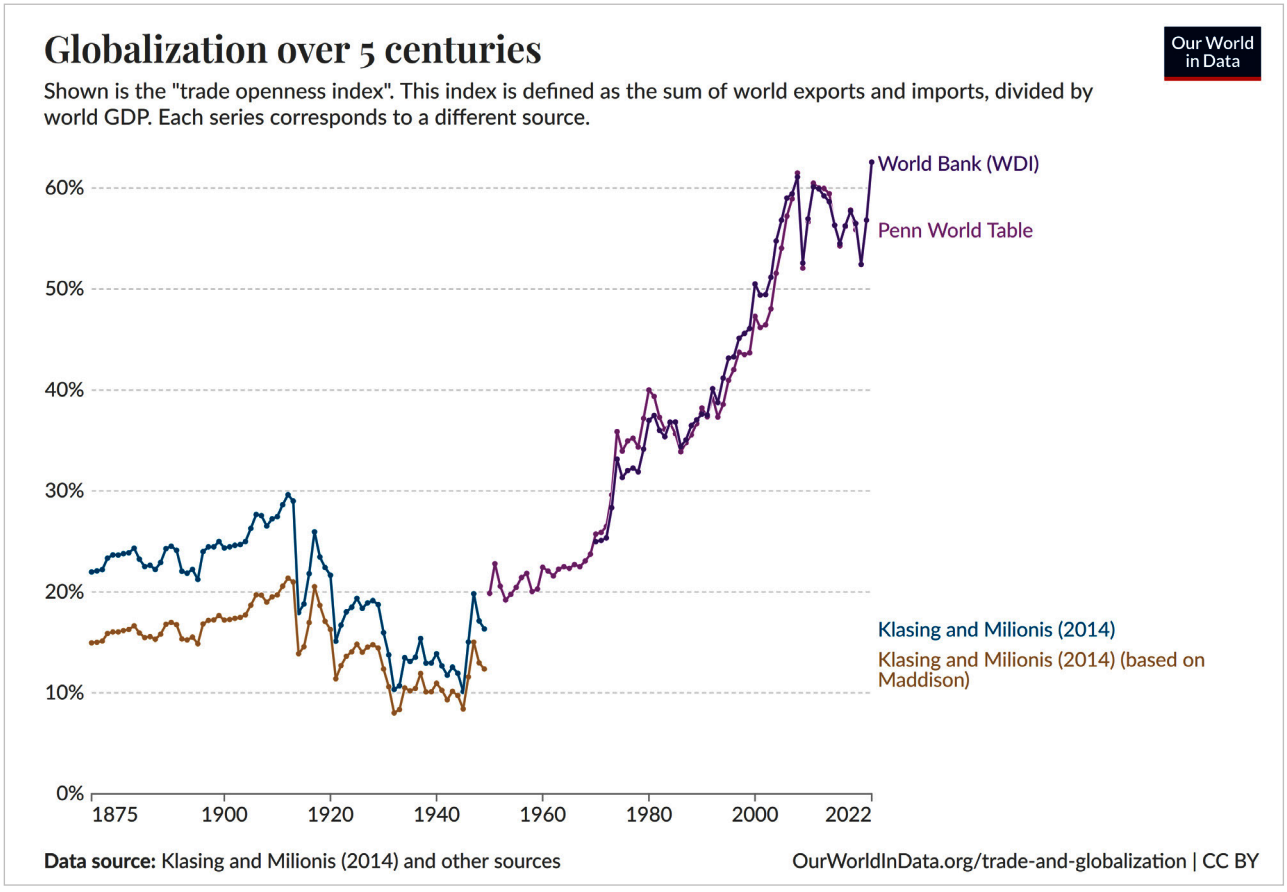
Their inability to innovate and adapt to the evolving post-World War II economic and technological landscape serves as a second key fact, underscoring the persistent struggles that many national postal operators – with some notable exceptions – have faced in maintaining competitiveness within the increasingly demanding international market.

Figure 9: **Exports as a percentage of GDP (1840–2014)**



Source: OurWorldInData.org

Figure 10: **Trade openness index (1875–2022)**



Source: OurWorldInData.org

As for the UPU, efforts to redefine its mission to include a stronger role in trade facilitation were proposed but ultimately rejected at the 2008 Congress in Geneva, leaving the organization with limited tools to address the rapidly changing dynamics of global commerce and postal services.[5]

The decline in international postal services became even more pronounced in the digital age.

While global trade continues to play a dominant role in the global economy, the volume of international letters has steadily decreased due to the rise of digital communication. The rapid growth of the Internet and mobile communication has sharply reduced the need for physical international mail in its current format, particularly letters, leading to their near-complete marginalization in global postal flows by the 2020s and an internationalization rate of 0.5% in 2024 (Figure 8).

The internationalization of parcel post has experienced considerable volatility in recent years, even as global e-commerce surged. Following the Great Recession of 2008, international trade stagnated and remained volatile for nearly a decade (Figure 8).

However, during this period of sluggish trade, international parcel exchanges grew significantly, fuelled by the rise of cross-border e-commerce. Consumers, increasingly accustomed to buying goods from abroad, helped drive a noticeable uptick in business-to-consumer (B2C) international parcels and small packets, marking a shift in purchasing behaviour that took off in the early 2000s.

Despite this growth, the boom in international parcel exchanges was short-lived. By 2024, international parcel volumes had plummeted by nearly 60% compared to 2019 (Figure 5), causing the parcel internationalization rate to fall sharply from 2.8% in 2019, just before the COVID-19 pandemic, to 0.7% in 2024.

This decline stands in stark contrast to the continued rise of domestic parcel deliveries, underscoring the significant logistical, regulatory, economic and geopolitical challenges that have impeded the long-term growth of cross-border parcels and small packets.

The third major fact to emerge from this analysis is that the internationalization of parcels has remained well below its potential for over a century.

Since peaking at 7.7% in 1913, the share of international parcels in total postal deliveries has consistently underperformed, reflecting the sector's inability to fully capitalize on growing global trade and e-commerce opportunities.

This persistent underperformance signals a long-standing structural limitation in the international postal system.

Reflecting on our analysis driven by historical data, we can conclude that the postal sector's internationalization has not mirrored the broader trends of globalization as reflected in global trade data.

While global trade has surged, particularly in the late 20th and early 21st centuries, international letter-post and parcel-post volumes have experienced long-term decline, highlighting the postal sector's inability to keep pace with changing global communication and commerce patterns.

While globalization has generally increased over time, driven by expanding international trade, postal internationalization – both for letter post and parcel post – has shown a more complex trajectory, influenced by technological, political, regulatory and economic factors.

5 On 30 July 2008, proposal 10.0.1, seeking to amend the Preamble to the UPU Constitution to include trade facilitation in the UPU's mission, was rejected with 97 votes in favour, 28 against, and 17 abstentions.

SECTION 2

THREE SCENARIOS FOR THE ROAD AHEAD

CHAPTER 3

FUTURE POSTAL INTERNATIONALIZATION: **THREE SCENARIOS ON THE ROAD TO THE UPU'S BICENTENNIAL**

When focusing on the internationalization of postal services between 1874 and 2074, the creation of the UPU serves as a critical milestone in establishing global cooperation for seamless cross-border mail delivery.

Looking back over 150 years, the previous section of this chapter identified key moments that shaped international postal services, providing a foundation for modelling three possible future scenarios: best-case, worst-case, and base-case for postal internationalization.

Understanding the best-case and worst-case extremes is vital, as it allows us to anticipate the full range of possible outcomes and prepare accordingly. The long history of global postal collaboration offers valuable insights into how geopolitical, technological, and economic shifts have impacted the system and how these forces might shape the future.

In the best-case scenario, called Renaissance, international postal services would reach unprecedented levels of efficiency and integration. It envisions a postal system that breaks free from its legacy constraints and emerges as a key player in the digital economy and society of the 21st century.

Historical moments of technological innovation – such as the rise of airmail and the explosive growth of e commerce – show the potential for a future where the global postal system fully embraces cutting-edge technologies like drones, autonomous vehicles, robotics and blockchain to deliver secure, fast, highly efficient services.

These advancements would transform cross-border customer logistics, payments, and overall experiences, positioning the postal system at the forefront of new artificial intelligence applications. The UPU would lead the charge in fostering the next generation of international cooperation, or hyper-collaboration (Anson et al., 2023), ensuring that even the most remote regions remain connected and the most vulnerable populations are included in the logistics, financial and trade systems of the 21st century.

In this scenario, postal services become not only reliable, but a linchpin in a new ecosystem driving global digital trade, sustainability and social connectivity innovations, with minimal delays or friction in the movement of goods, data, information and money across borders.

The ambitious base-case scenario, called Resilience, reflects the need for reinvention in the face of vulnerabilities.

Recent disruptions, such as the COVID-19 pandemic, exposed the fragility of international postal services, leading to delays, interruptions and reduced capacity. The Resilience scenario envisions a postal system that has learned from the challenges of the past and is better equipped to navigate the uncertainties of the next 50 years. In this case, the global postal system would undergo significant transformation, adapting to new realities rather than simply evolving incrementally.

Table 2: **Assumptions for future scenarios of the global postal sector**

Past facts	Worst-case scenario: Regression (R-1)	Base-case scenario: Resilience (R0)	Best-case scenario: Renaissance (R+1)
Postal internationalization is and remains a fraction of global economic trade (F1)	5	3	2
International postal services are slow to adapt to changes in the global environment (F2)	4	3	1
Parcel-post internationalization rate is below long-run potential (F3)	5	2	1

Scale: 1 (completely false) – 5 (completely true)

Artificial intelligence, automation and cyber-security would be at the heart of this reinvention, optimizing logistics, predicting demand, participating in B2B2C exchanges, and safely managing disruptions with greater efficiency and anticipation capabilities. The UPU would lead efforts to create more resilient, dynamic decentralized systems capable of withstanding global crises, fundamentally reshaping its governance framework in the process. In this scenario, international postal services would transcend their traditional role, becoming a crucial pillar of global e-commerce and supply chain management in the emerging digital trade era, where seamless and reliable end-to-end delivery – from any origin to any destination – is regarded as an essential service.

Reinvention would not only hinge on the adoption of new technologies but also on reimagining policies, forging stronger partnerships, and redesigning infrastructure to ensure that international connectivity remains robust, even in the face of future disruptions.

Compared to the best-case scenario, the scope of international services in the base-case scenario would remain more focused on core logistics functions, lacking the ability to expand into new verticals such as integrated financial or digital services, which would limit the potential for broader innovation and diversification within the postal sector.

In contrast, the worst-case scenario, termed Regression, envisions a future where the international postal system succumbs to the cumulative pressures of technological disruptions, economic crises, wars, and geo-political tensions, leading to its fragmentation and eventual collapse.

This scenario imagines a postal system that fails to learn from past challenges and remains ill-equipped to navigate the complexities of the future. Rising protectionism, political instability, or the complete replacement of international parcel post by alternative B2B2C delivery networks could further dismantle global postal cooperation.

In this scenario, cross-border postal services could experience a definitive decline, with entire countries or regions becoming isolated from major digital trade lanes. The system would likely struggle to adapt to emerging technologies and shifting delivery preferences, resulting in inefficiencies and reduced global reach. The collapse of international postal services during and after the COVID-19 pandemic serves as a stark reminder of how vulnerable global logistics systems can be in the face of crises (Anson et al., 2023).

Table 2 presents the assumption comparison of three key facts identified from our analysis against the backdrop of potential future scenarios introduced above: the worst-case (Regression, R-1), base-case (Resilience, R0), and best-case (Renaissance, R+1) scenarios.

As outlined in the previous chapter, three hard facts describe trends observed in the postal sector's historical internationalization, provide a lens through which to predict the future trajectory of postal services. Each scenario represents a different degree of adaptation and integration of the postal system, influenced by past experiences and future innovations.

The values in Table 1 serve as a comparative framework to quantify how closely each scenario aligns with the key facts. Each fact is evaluated on a scale from 1 to 5, where 1 signifies that the fact is completely false within a given scenario, and 5 indicates it is completely true.

For example, under the Regression scenario, the slow adaptation of international postal services (F2) is rated as highly true (4), indicating that postal services are likely to lag significantly behind global changes. In contrast, the best-case Renaissance scenario scores lower (1) for this fact, suggesting a very proactive transformation within the sector.

Similarly, the third fact concerning parcel-post internationalization (F3) shows a sharp divergence between scenarios, with the Renaissance scenario scoring a 1 (indicating full realization of potential), while the Regression scenario scores a 5 (indicating persistent underperformance). These values provide a structured lens for assessing the future potential of postal internationalization by grounding it in historical trends and gauging the sector's capacity for transformative change.

We now look deeper into the rationale behind these values, explaining how past facts intersect with future scenarios to shape the projected trajectory of international postal development.

F1 – Postal internationalization as a fraction of global economic globalization:

the consistent observation that postal internationalization has always remained a fraction of broader economic globalization. Even at its peak in 1913, the internationalization of letter post and parcel post remained significantly lower than the global trade flows, which accounted for around 14% of GDP. This historical trend suggests that despite the UPU's efforts to promote cross-border cooperation and postal exchanges, the sector has not fully capitalized on the rapid growth of global trade.

In the Regression scenario (R-1), this fact is not only confirmed but worsened. Postal internationalization would continue to decline as new global players dominate the logistics and delivery markets, pushing international postal services closer to obsolescence.

In the Resilience scenario (R0), while the postal sector would partially close the gap, it would still structurally lag behind the pace of global economic integration.

In contrast, the Renaissance scenario (R+1) envisions minimizing the gap as postal services are reinvented and seamlessly integrated into a fully digitalized, hyper-collaborative global trade network. This would lead to a gradual convergence between postal internationalization and the broader globalization rate over time.

F2 – Slow adaptation of international postal services to changes in the global environment:

underscores designated operators' historical difficulty in keeping pace with technological, economic, and regulatory changes. Over the years, international postal services have often been reactive rather than proactive, falling behind as global dynamics shifted. This slow adaptation has repeatedly limited the sector's competitiveness in a world that has become increasingly digital, interconnected, and reliant on real-time solutions.

UPU members' hesitation to fully embrace key innovations like mandatory tracking of all shipments, automation and e-commerce fulfilment is part of a broader pattern of missed opportunities.

In the Regression scenario (R-1), this failure to adapt becomes even more critical. Despite incremental improvement efforts, postal services remain stranded, unable to keep pace with the increasingly complex and dynamic demands of the global economy. As a result, the sector's relevance in international exchanges continues to diminish, and in some regions, particularly in less connected parts of the world, it would face isolation from the broader global logistics ecosystem.

In the Resilience scenario (R0), however, the pace of adapting to global changes keeps pace with market developments. International postal services would actively adopt new technologies – such as artificial intelligence, automation, and blockchain – to optimize their operations and reduce inefficiencies, ensuring that they can keep up with global economic and technological trends. Yet, even in this scenario, adaptation may still be somewhat reactionary rather than revolutionary.

In the Renaissance scenario (R+1), the sector moves beyond just catching up to become a leader in global logistics and trade. Postal services would rapidly innovate to leverage cutting-edge technologies, not only to integrate more efficiently into the digital economy but to redefine it. In this scenario, the historical lag in adaptation is decisively overcome, with international postal services at the forefront of global trade, driving innovation and shaping the future of cross-border logistics.

The transformation would be so radical that the sector, once seen as slow-moving and outdated, would now lead the charge in ensuring seamless global connectivity.

F3 – Parcel-post internationalization rate is below long-run potential:

highlights the chronic underperformance of parcel-post internationalization. Despite the explosive growth of e-commerce and the expansion of global trade, international parcel post has consistently failed to realize its full potential.

This underperformance can be attributed to a number of factors, including the persistent inability to transfer domestic parcel growth to the international level due to various cross-border logistical, regulatory and economic barriers. Issues such as inconsistent customs procedures, varying taxation policies, and inefficient last-mile delivery networks across different countries have created friction in cross-border logistics.

Moreover, geopolitical tensions, protectionist policies, and intensified competition in international parcel markets have further compounded these challenges, limiting the ability of most postal operators to streamline cross-border parcel services. These structural barriers have persisted for over a century, preventing parcel post from evolving into a more dominant force in global trade, even as domestic parcel volumes have surged over the last three decades. Meanwhile, long-standing monopolies in the letter-post market offered little incentive for traditional postal operators to invest significantly in international parcel services, particularly given the complexities of navigating this challenging landscape.

In the Regression scenario (R-1), the gap between potential and actual international market performance widens even further. Cross-border parcel post would continue in its sharp decline, exacerbated by the growing dominance of new private-sector alternatives that can nimbly navigate the complexities of digital trade. Postal operators, burdened by legacy systems, would fail to modernize or collaborate effectively, leaving them ill-equipped to compete in an increasingly competitive and digitalized market.

As a result, international parcel services would likely fragment, with many regions either turning to new players' services or becoming disconnected from global trade networks entirely.

In the Resilience scenario (R0), international parcel post would undergo significant modernization and growth, driven by strategic investments in automation, digital technologies, and operational efficiency. Although the changes may not be as transformative as is needed, postal services would steadily enhance their competitiveness in the international parcel market.

Key regulatory challenges – such as customs delays and inconsistent taxation policies – would be addressed through targeted reforms and innovative technology solutions, with postal operators actively collaborating with governments to streamline universal cross-border logistics.

Postal services would also form robust partnerships with private sector players and e-commerce platforms, leveraging their global networks and established trust to capture a growing share of international deliveries. These partnerships would foster greater innovation in service offerings, enabling postal operators to offer end-to-end solutions, including advanced track and trace, faster and predictable delivery times, and improved last-mile logistics.

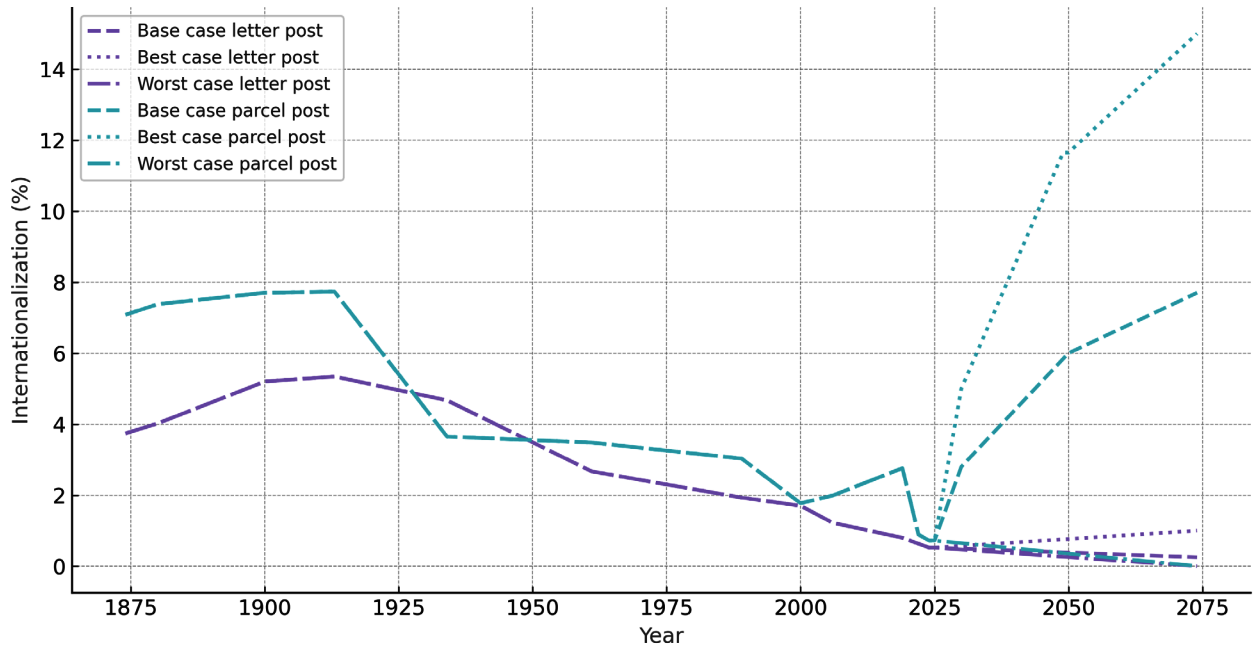
In these adaptative conditions, international parcel post would progressively close its long-term performance gap, emerging as a vital pillar in the global e-commerce landscape and positioning postal operators as integral players in the evolving logistics ecosystem.

In the Renaissance scenario (R+1), however, international parcel post would undergo a dramatic transformation, evolving into a cornerstone of global trade.

In this future, postal operators would fully embrace innovation both in logistics and in the digital domains. Digital solutions and automation innovations will create a seamless and highly efficient global parcel network. The integration of artificial intelligence, real-time customs clearing, autonomous delivery systems, and blockchain for secure, transparent transactions would eliminate much of the friction in cross-border logistics. Postal services would collaborate extensively with global partners, ensuring interoperability and efficient service across borders.

As a result, international parcel post would take on a much larger share of e-commerce deliveries and contribute significantly to the expansion of global trade, fully realizing its long-underestimated potential and acting as a key enabler in the global digital economy.

Figure 11: **Internationalization of letter and parcel post: scenario forecast**



SIMULATING THE INTERNATIONAL POSTAL FUTURE: REGRESSION, RESILIENCE OR RENAISSANCE?

The final stage of this analysis, combining past facts and future scenarios, involves generating numerical simulations of postal internationalization curves after interacting with an AI agent specifically trained for postal development scenario analysis. Figure 11 presents the results of this exercise, illustrating the projected outcomes for the Regression (worst-case), Resilience (base-case), and Renaissance (best-case) scenarios.

Regression (R-1)

The simulation for the worst-case scenario represented by punctuated lines shows a sharp decline in international postal services after 2025. This decline is especially stark for parcel post, where the internationalization rate is close to zero by 2074.

In this simulated future, Fact 1 holds firmly: postal internationalization remains a fraction of economic globalization and pursues its steady decline. Fact 2 also plays a significant role here, as the sector fails to adapt to technological changes, reinforcing the sector's obsolescence. Finally, Fact 3, highlighting the chronic under-performance of parcel post, becomes even more pronounced in this scenario, with parcel-post internationalization effectively collapsing, preventing it from becoming a competitive force in global logistics.

The Resilience scenario envisions a postal system that has learned from the challenges of the past and is better equipped to navigate the uncertainties of the next 50 years. In this case, the global postal system would undergo significant transformation, adapting to new realities rather than simply evolving incrementally.

Resilience (R0)

In the simulation for the base-case scenario represented by the dashed lines, there is some stabilization of the international letter-post decline and a clear rebound in parcel-post internationalization between 2025 and 2074.

The latter shows a steady upward trend, reaching close to 8% internationalization by 2074. Letter post, while slowly pursuing its decline, stabilizes around 0.25%, suggesting that cross-border mail services will remain relevant in niche markets, especially for official, legal, or essential communications.

This simulated scenario sees Fact 1 moderately improving, with postal internationalization closing the gap somewhat with broader economic globalization. However, the gap is expected to continue to persist, as postal services struggle to keep up with the overall growth of digital trade. Fact 2 also improves, with postal services making strategic adaptations, with changes more transformative than incremental. Fact 3 sees the potential of parcel post beginning to be realized, with postal operators forming partnerships and adopting new technologies to become competitive players in international e-commerce logistics.

Renaissance (R+1)

The simulation for the best-case scenario, depicted by the dotted lines, envisions a dramatic resurgence in postal internationalization after 2025. Both parcel post and letter post show steep upward trends, with parcel post reaching nearly 15% internationalization by 2074 – an unprecedented level – while letter post reaches the 1% internationalization rate again.

This scenario envisions postal services fully embracing innovative approaches to their core operations and rapidly embracing digital technologies, collaborating with governments and wide postal ecosystem stakeholders, and becoming integral to global digital trade networks.

In this projected future, Fact 1 is clearly mitigated if not eliminated, with postal internationalization converging closely with broader economic globalization. Fact 2 is decisively overcome, as postal operators fully embrace technological and business model innovations, becoming proactive leaders in global logistics rather than reactive laggards. Fact 3 sees international parcel post finally achieving its long-run potential, with postal operators leading the charge in cross-border e-commerce and global trade.

A unified international postal ecosystem emerges, making postal services more relevant than ever on a global scale, as seamlessly integrated logistics networks work in harmony to facilitate efficient cross-border operations and global trade.

THE FUTURE EVOLVES FROM OUR ACTIONS TODAY

Our scenario analysis clearly demonstrates that the future of the global postal sector is not set in stone; rather, it is inherent to the actions we take today.

With decisive action, particularly under the leadership of the UPU, the postal sector could reinvent itself and play a more prominent role in global trade and logistics.

By embracing innovation, collaboration, and strategic investments, postal services can play a critical role in tomorrow's digital trade, closing the gap with economic globalization and realizing the full potential of cross-border postal services.

As a final comment, this forward-looking analysis, along with the potential pathway for success, is made possible thanks to the availability of high-quality postal statistics over the past 150 years. Without this wealth of historical data, and without timely, accurate postal statistics provided to the UPU year on year, it would be impossible to model the dynamics of postal internationalization and its potential future paths.

The extensive data allows for a robust evaluation of past trends and the formulation of credible future scenarios, underscoring the critical role those reliable postal statistics play in shaping our understanding of the sector's evolution.

As the postal sector looks toward the future, continuing to gather, refine and analyze postal data will be vital in enabling stakeholders to effectively conduct prospective scenario exercises like the one presented here, and to navigate the complex landscape of global trade and logistics.

SECTION 3

STATE OF THE GLOBAL POSTAL SECTOR IN 2024

CHAPTER 4

NEW APPROACH TO ASSESSING POSTAL DEVELOPMENT LEVELS

DEFINING POSTAL DEVELOPMENT LEVELS

Since its inception in 2017, the Integrated Index for Postal Development has been the UPU's primary tool for tracking and assessing the evolution of postal development on a global scale. With seven annual releases already covering the years 2016 to 2022, the eighth edition of the 2IPD introduces several significant enhancements to how postal development is measured.[6]

This iteration refines the calculation of scores across the four key pillars – postal reliability, reach, relevance, and resilience – providing a more comprehensive and nuanced evaluation of postal systems globally.

Additional factors, such as geographical context and both inbound and outbound international connectivity, have been integrated, along with a more flexible framework for comparing diverse postal business models and network strategies. Greater emphasis is placed on the availability and quality of tracking data, reflecting the critical role of data in modern postal operations and customer experience.

Beyond these updates, the 2024 edition also introduces, for the first time, bonus points for countries that excel in consistently delivering high-quality postal statistics, and those making significant progress in decarbonizing their postal operations or reporting their carbon footprint. These new criteria underscore the UPU's growing focus on sustainability and transparency.

As first introduced in the 2022 edition (see methodology paper, UPU 2023), a country's Postal Development Level (PDL) is eventually determined by its final 2IPD score, offering a more holistic and multidimensional view of postal performance.

In the 2024 release, 174 countries were assessed, providing a comprehensive and detailed analysis of postal development performance across the world. This assessment spans the year 2022 from a postal statistics standpoint, and 2023 from a postal big data monitoring perspective, offering insights into a wide variety of development contexts and further underscoring the UPU's commitment to data-driven improvements in global postal services.

Table 3 highlights how the UPU has leveraged its vast repository of big data and official statistics to develop a sophisticated classification system that ranks countries according to 10 distinct PDLs, which are closely linked to their influence on national economic resilience and development (Anson et al, 2023).

This classification system segments countries into 10 tiers, ranging from level 1 to 10, each reflecting a unique stage of postal development. These levels are not arbitrarily assigned but are the result of a robust statistical analysis of the countries' respective 2IPD scores, which cluster nations into development categories.

This tiered system enables a clearer understanding of where each country stands in terms of postal service maturity, facilitating targeted development strategies and fostering international cooperation between UPU member countries.

Additionally, the PDL framework provides a valuable tool for identifying emerging leaders in postal innovation, as well as countries that may require more focused support to enhance their postal infrastructure and services.

6 All 2IPD reports can be found at www.upu.int/en/universal-postal-union/activities/research-publications/integrated-index-for-postal-development.

Table 3: **Postal development levels**

INCREASING POSTAL MATURITY AND POSTAL DEVELOPMENT IMPACT ON ECONOMIC RESILIENCE

PDL AND ECONOMIC RESILIENCE IMPACT	COHORT CHARACTERISTICS FROM A POSTAL AND ECONOMIC DEVELOPMENT PERSPECTIVE
10	PDL 10 represents the pinnacle of postal development excellence, comprising top-performing designated operators (DOs) that are exceptionally well-positioned to drive sustainable economic growth. These operators leverage cutting-edge technological innovation and robust infrastructure to maximize their positive impact on long-term national economic resilience. By fostering inclusive development and leading the internationalization of exchanges, they set the standard for global postal services.
9	DOs in this group are nearing their full potential, with significant contributions to national economic development. These operators effectively capitalize on their strengths while addressing any remaining weaknesses, positioning themselves as key drivers of their country's greater economic resilience and internationalization.
8	Taking a further step toward excellence, DOs in countries at this level offer a robust value proposition through their postal services portfolio. Their contributions play a crucial role in enhancing national economic resilience, supporting both businesses and citizens with reliable and efficient postal solutions.
7	DOs of countries at this level have likely reached important milestones in their postal development journey. They play a significant role in their domestic markets and are increasingly contributing to broader economic development, though their impact is not as pronounced as that of DOs at more advanced stages.
6	DOs at PDL 6 are actively accelerating their postal development by focusing on key performance areas to ensure consistent, reliable services. These efforts are poised to yield significant economic benefits, fostering higher growth and contributing to the reduction of inequalities within their countries.
5	The essential building blocks for postal success are in place, providing a foundation for future growth. If current development efforts are sustained, these DOs could unlock significant positive impacts on their country's economic growth and poverty reduction in the coming years, positioning themselves for a brighter postal future.
4	DOs at PDLs 4 and 3 are gradually moving toward meeting the necessary conditions to better serve both their current and potential customers, albeit at different speeds. While operators at PDL 4 are making steady progress, those at PDL 3 are facing more significant challenges, particularly in terms of digital transformation. With targeted investments, their contributions to national economic development could grow.
3	
2	DOs in this group primarily focus on basic operations, are increasingly disconnected at the international level and must significantly improve services and business models in order to be better positioned to seize future opportunities. Only then can they begin to contribute to more inclusive economic growth and development in their country.
1	DOs at PDL 1 are either in the early stages of development or significantly underperforming in terms of postal services. To ensure their survival, they must urgently address fundamental structural challenges, modernize their basic postal infrastructure, and enhance their role in national development. Reconnecting to the international postal network is also crucial for unlocking future opportunities and integrating into the global postal ecosystem.

Table 4: **Calculating 2024 2IPD scores**

2IPD SCORE =

RELIABILITY (R1)	+ REACH (R2)	+ RELEVANCE (R3)	+ RESILIENCE (R4)
Assesses the development of the delivery experience from a service speed and predictability perspective by mail class on the national territory of a member country	Evaluates the level of postal connectivity and volumes exchanges of the country with the rest of the world from an inbound as well as from an outbound perspective	Measures the relative success of different business and network models and segments of activities from a demand-intensity perspective in the country	Estimates the postal capacity to overcome economic, social and technology shocks in a sustainable way and provide relevant data to customers and partners

+ BONUS (B)	Rewards for the availability and quality of postal official statistics, participation in carbon emissions reporting systems and progressive decarbonization achievements

2IPD SCORES: THE UNDERLYING QUANTITATIVE ASSESSMENT

The 2IPD scoring system, which underpins the PDL classification, remains anchored in the four foundational dimensions of postal development: reliability, reach, relevance, and resilience – collectively referred to as the "four Rs" of postal development, as illustrated in Table 4.

Each dimension plays a crucial role in evaluating the overall effectiveness and adaptability of a country's postal sector. Scores for each dimension are from 0 to 100, reflecting a country's relative performance.

This comprehensive framework ensures that the 2IPD captures not only the operational efficiency of postal services, but also their capacity to adapt to evolving market demands, expand their geographic and service reach, maintain relevance in a digital age, withstand economic and technological disruptions, and enhance customer and partner engagement through improved tracking data.

In addition to significant refinements in the measurement of its four core components, the 2024 edition of the 2IPD introduces a bonus system, a transformative enhancement designed to incentivize and reward behaviours and achievements that align with the evolving priorities of the postal sector. The overarching aim of this bonus system is to promote greater policy coordination, foster informed decision-making, align postal development with market trends and consumer expectations, and drive measurable improvements across critical areas of performance.

The bonus system operates on the principles of fairness, transparency, and adaptability.

Bonuses are awarded based on measurable targets and the availability of rigorous and quantifiable data, ensuring that the process remains objective and data-driven. Importantly, the choice of elements eligible for bonuses will evolve over time, responding to emerging priorities and the changing needs of the global postal ecosystem. This adaptability ensures that the 2IPD remains a dynamic and future-oriented tool, capable of addressing the sector's most pressing challenges.

For 2024, the bonus system focuses on two specific areas: high-quality postal statistics and carbon footprint reporting and reduction efforts. These focus areas reflect the dual priorities of improving data transparency and advancing environmental sustainability—two critical drivers of innovation and growth in the modern postal sector.

The inclusion of postal statistics as a bonus element underscores the vital role of accurate, high-quality data in strategic decision-making and policy formulation. By incentivizing countries to effectively contribute to UPU's official statistics system, the 2IPD encourages the development of evidence-based strategies that can enhance service quality, operational efficiency, and market competitiveness.

Similarly, the focus on carbon footprint reporting and decarbonization reflects the growing recognition

of sustainability as a cornerstone of postal sector development. As the world confronts the realities of climate change, the ability of postal operators to measure, report, and reduce their carbon emissions is increasingly central to their relevance and competitiveness. The bonus system rewards proactive efforts in this area, encouraging postal operators to align with global sustainability goals and contribute to the broader decarbonization of the logistics sector.

By integrating a bonus system into its methodology, the 2IPD not only provides a more comprehensive and forward-looking measure of postal development but also signals a commitment to fostering a more innovative, sustainable, and data-driven postal ecosystem. This approach ensures that the index remains relevant and responsive to the dynamic challenges and opportunities facing the sector today and in the future.

The new 2IPD methodology document (UPU, 2024) offers a detailed and comprehensive explanation of the updated scoring framework and methodological enhancements.

Briefly, the four main 2IPD scoring components are:

RELIABILITY: Derived from an extensive analysis of track-and-trace data points related to international postal shipments, this score evaluates the speed and consistency of inbound postal deliveries, serving as a reliable proxy for the quality of domestic delivery service and the customer experience. Geographical conditions of a country are carefully accounted for through adaptable and flexible evaluation methods embedded within the 2IPD postal reliability algorithm.

A relatively high score in this category (above 70) signifies excellent service reliability and also fosters consumer trust. By reducing transaction costs, it aids in the expansion of e-commerce and facilitates the broader digital economy.

REACH: Using electronic messages about outbound and inbound international postal dispatches and tracked items, this metric assesses the extent and effectiveness of a country's international postal network in connecting to the rest of the world. The diverse structures of international postal exchanges are accounted for through adaptable and flexible evaluation methods integrated into the 2IPD postal reach algorithm.

A relatively high score (above 50) indicates robust global postal connectivity that is vital for cross-border e-commerce and to support international trade development for micro, small and medium-sized enterprises.

RELEVANCE: This component amalgamates customer demand data across various postal services – from domestic to international deliveries, and financial services – as well as the density of post offices and access points to postal services in a country. It identifies strong and weak points in a country's postal business and network model, assigning scores accordingly. The 2IPD postal relevance algorithm addresses the diversity of business models using adaptable and flexible comparison mechanisms, ensuring a fair evaluation of business performance that accurately reflects different strategic choices.

Strong demand for postal services, including counter services, can facilitate economic transactions in a very wide range of sectors and industries, as typically reflected by relevance scores above 20.

RESILIENCE: This dimension evaluates the postal system's capacity to sustainably adapt its economic and operational models in response to technological, social, and economic shocks. It underscores the system's role in advancing inclusive development, particularly through its contributions to financial inclusion initiatives.

Furthermore, it assesses the level of customer engagement, more specifically through the availability and quality of cross-border tracking data that enable seamless digital trade between countries. The 2IPD postal resilience algorithm is crafted to accommodate the differing priorities in development policies across nations, ensuring fair and meaningful comparisons.

For scores exceeding 60, the algorithm highlights the broader societal benefits of a resilient postal network, emphasizing its critical role in fostering long-term economic stability, inclusivity, and social cohesion.

After rigorous consistency checks on UPU big data and computation using a series of robust algorithms, a country's final 2IPD score is derived by aggregating the four "R" component scores and adding the bonus.

Each of the four dimensions – reliability, reach, relevance, and resilience – carries equal weight in the overall score.

Once these four components are combined, the scores are normalized, with the highest value rescaled to 100 and the lowest to 0. Finally, any earned bonus points are added, reflecting a country's commitment to high-quality data provision and environmental sustainability.

Table 5: **Postal development levels and their corresponding 2IPD scores in 2023**

PDL	1	2	3	4	5	6	7	8	9	10
2IPD score	0.00–5.9	6.00–15.9	16.0–25.9	26.0–35.9	36.0–45.9	46.0–55.9	56.0–65.9	66.0–79.9	80.0–100.0	> 100.0

In order to determine each country's postal development level, critical values separating the different groups were identified through statistical analysis.

The conversion table between PDLs and 2IPD scores is shown in Table 5.

Countries that achieve a 2IPD score of 36.0 or higher are placed in categories ranging from PDLs 5 to 10, representing upper-middle to high levels of postal development.

As detailed in Table 3, these levels indicate that the postal sector is well-positioned to contribute positively to the country's economic growth, resilience, and overall development. Postal services in these categories are typically characterized by advanced infrastructure, efficient operations, and a strong ability to adapt to changing market conditions. They are likely to play a critical role in supporting not just national but also regional and global economic networks.

On the other hand, countries with 2IPD scores below 36.0 are classified at PDLs 1 to 4, which reflect low to lower-middle levels of postal development. These categories highlight more substantial challenges in the postal sector, with PDLs 4, 3, 2, and 1 indicating increasingly severe obstacles.

Countries in these lower tiers may struggle with outdated infrastructure, limited service reach, and a lack of innovation, which can impede their ability to support economic growth and development. The challenges in these levels underscore the urgent need for targeted interventions and investments to uplift their postal systems, ensuring that they can better contribute to national and international economic objectives.

Member countries can utilize their PDL and 2IPD component scores to conduct an in-depth gap analysis, serving as a strategic roadmap for not only enhancing their postal systems but also contributing to broader national development goals.

With targeted investments, technical support, and the right resources, countries can aspire to elevate their position within the PDL framework, and potentially exceed their current level. This approach empowers them to strengthen their role in the global postal network, thereby significantly enhancing their capacity to drive positive economic and development outcomes.

CHAPTER 5

POSTAL DEVELOPMENT LEVEL AND 2IPD SCORE RESULTS 2023

As highlighted in previous years' analyses (Anson et al., 2022, 2023), the 2023 PDLs continue to reveal significant disparities in postal development, not only between advanced and developing nations but also within regions, particularly in Africa, Latin America and the Caribbean, and Asia-Pacific.

Figure 12: **2023 PDL by country**

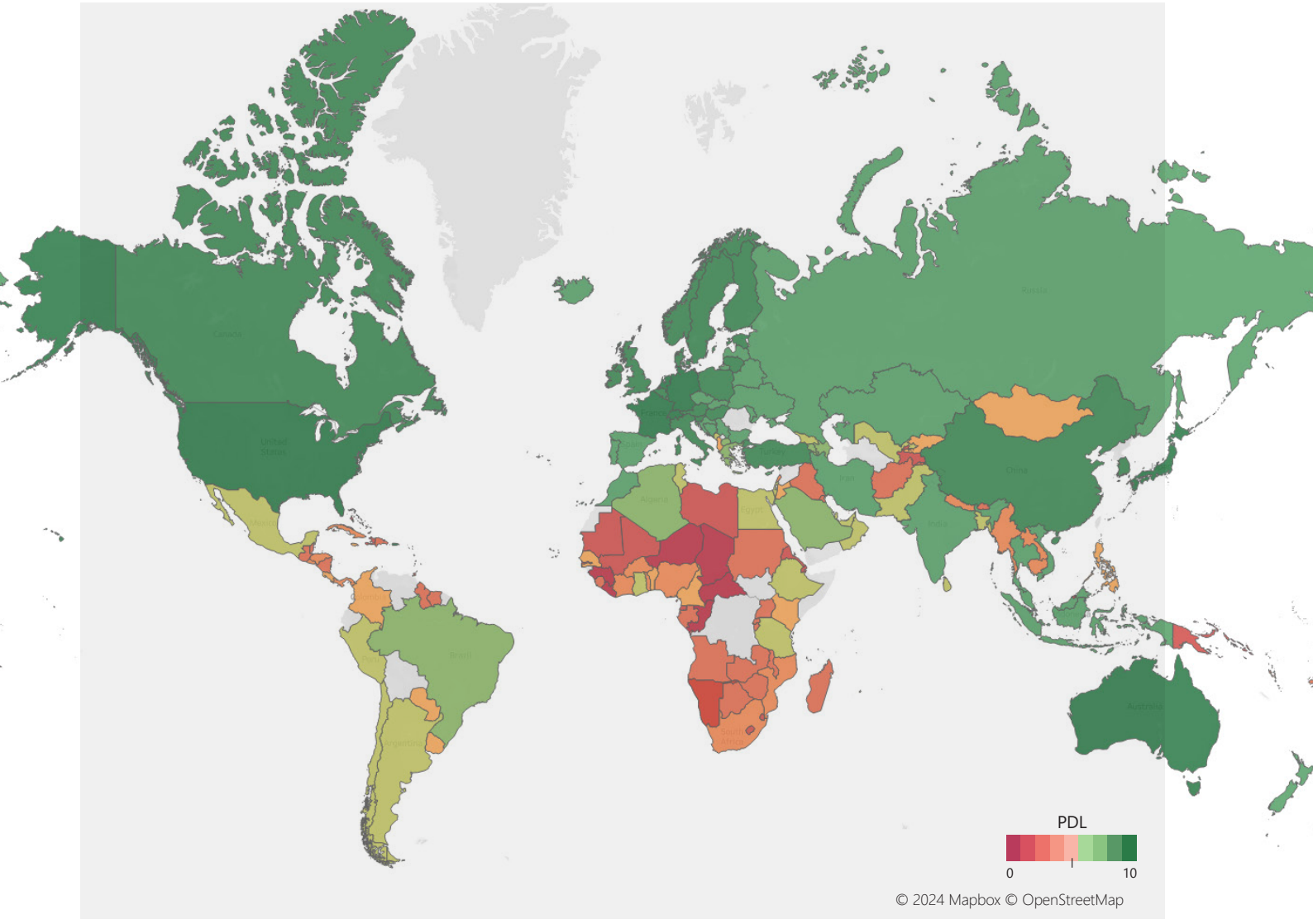


Figure 13: **2023 PDL distribution across UPU regions**

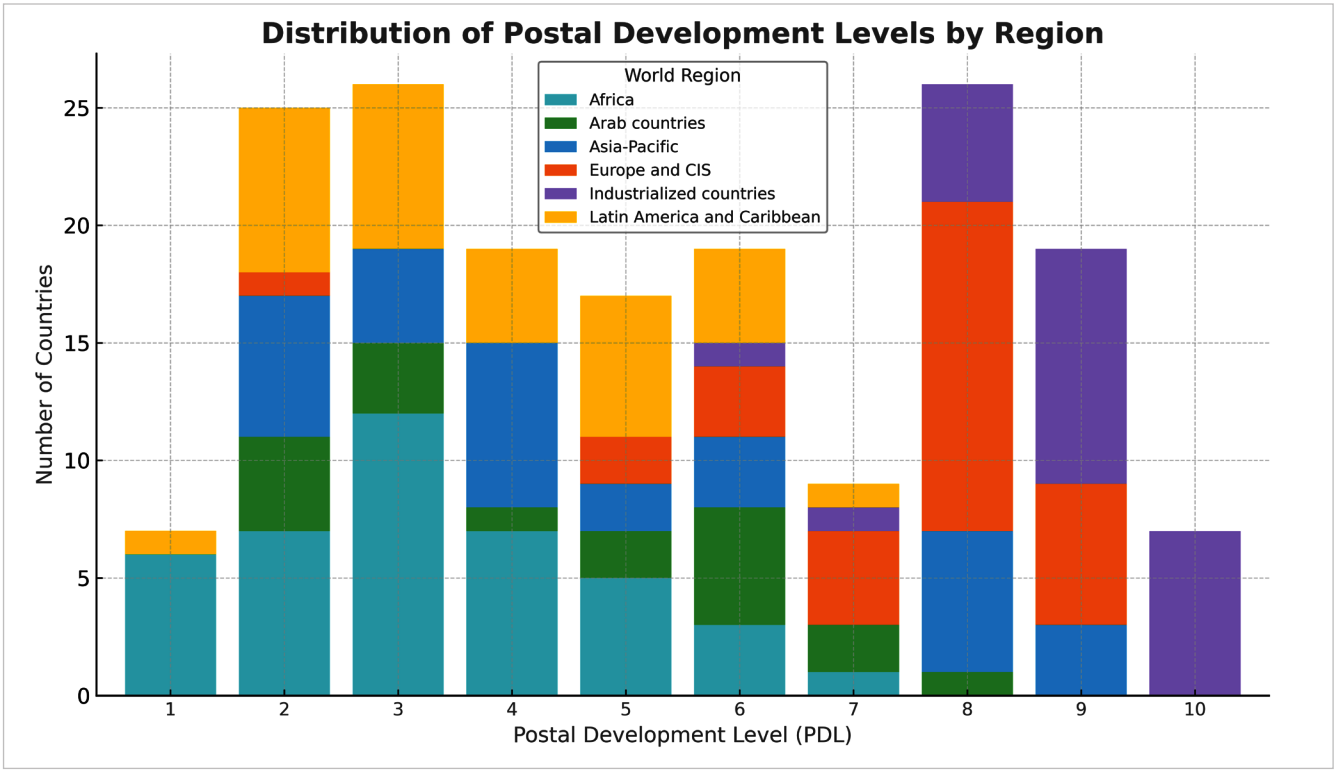


Figure 12 illustrates the distribution of PDLs across different countries and regions and shows significant disparities. These intra-regional gaps are especially pronounced when compared to the more developed regions of the world.

In the UPU's official classification, developed countries are categorized as industrialized countries (ICs), reflecting their advanced postal infrastructure and higher levels of service.

The Europe and CIS region consists of developing countries in Eastern Europe and the Commonwealth of Independent States (CIS), highlighting a diverse mix of postal development stages.

The Arab countries region includes nations from North Africa and the Middle East, where postal services are often influenced by geopolitical factors and regional cooperation frameworks.

The Africa region represents Sub-Saharan African countries, where postal development faces significant challenges due to infrastructural and socio-economic constraints.

The Asia-Pacific region covers a broad spectrum of nations from Southern and South-East Asia, as well as the Pacific islands, each with varying degrees of postal development influenced by rapid urbanization and technological adoption.

Lastly, the Latin America and Caribbean region includes South and Central America, Mexico, and the Caribbean, where postal services are gradually evolving amidst diverse economic landscapes.

From a PDL categorization viewpoint, shows the geographic diversity or concentration of member countries across the 10 levels.

Industrialized countries are predominantly found in the higher Postal Development Levels (PDLs 8 to 10), highlighting their advanced postal systems, which play a crucial role in economic resilience and social inclusion.

In contrast, regions like Africa and Latin America and the Caribbean are primarily situated at the lower PDLs (1 to 4), reflecting ongoing challenges with infrastructure, international service reach, and modernization. The Europe and CIS region and Asia-Pacific exhibit a more diverse distribution across the mid-level PDLs (5 to 7), indicating a mix of emerging postal leaders and countries still confronting developmental obstacles.

Ideally, we would aim for a more symmetric distribution of countries across the PDL spectrum, resembling a normal curve centred around the mid-levels. Such a distribution would suggest a more balanced global development, where all regions have strong enough postal systems contributing to both economic and social well-being.

The median 2IPD scores by regions are as follows:

Table 6: **Median 2IPD scores by UPU region**

UPU Region	Median score
AFRICA	21.0
LATIN AMERICA AND THE CARIBBEAN	25.9
ASIA-PACIFIC	34.6
ARAB COUNTRIES	42.9
WORLD	43.0
EUROPE AND CIS	68.9
INDUSTRIALIZED COUNTRIES	91.7

This current imbalance emphasizes the need for targeted interventions and increased development cooperation to enhance the postal capabilities of underperforming regions, fostering a more equitable global postal development essential for advancing the internationalization of postal services.

DEEP DIVE INTO 2IPD SUB-SCORES

Figure 14 provides a visual representation of the median scores for each of the four key 2IPD dimensions across different regions. From the chart, we observe that industrialized countries (ICs) consistently score the highest across all four dimensions, which is reflected in their dominance in the upper PDLs (8 to 10).

Specifically, these countries show particularly strong performance in postal reliability, reach and resilience, underscoring their ability to adapt to market demands and maintain robust postal services. Europe and CIS usually lag slightly behind ICs.

In contrast, regions such as Africa and Latin America and the Caribbean tend to score much lower, especially in the dimensions of postal reliability and relevance, which corresponds to their higher representation in the lower PDLs (1 to 4). The Asia-Pacific and Arab regions display median scores indicating mid-range performance in most dimensions, except for relevance levels that remain low.

Tables in the appendix provide an even more granular view of the distribution of postal development scores across regions by displaying the range of scores.

It is also important to note that there is significant variability between the countries within each region.

To illustrate this, the boxplots in Figure 15 show the median scores, variability, and outliers for each region, thus offering insights into regional disparities and outliers.

Starting with postal reach, industrialized countries boast the highest median scores, reflecting their well-developed international networks that efficiently connect individuals and businesses worldwide. However, the range of scores within this group indicates varying levels of reach, which could impede the long-term advancement of postal internationalization.

In contrast, Africa registers the lowest scores, with most countries in the region clustered at the lower end of the scale, effectively isolating them from the global network owing to significant challenges in expanding postal services beyond their borders.

Figure 14: **Median 2IPD sub-scores by UPU region**

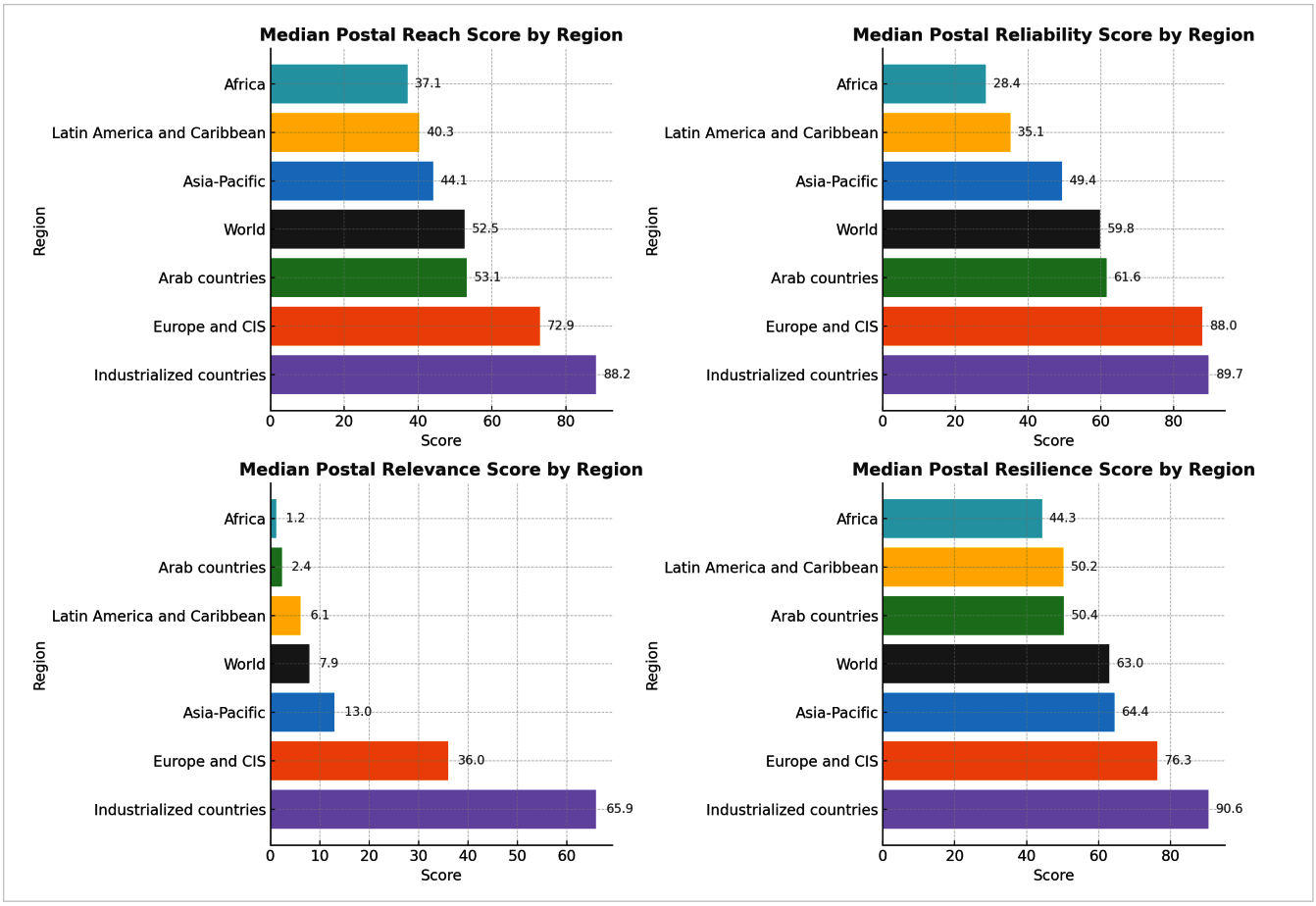


Figure 15: **Boxplot of 2IPD sub-scores across UPU regions**

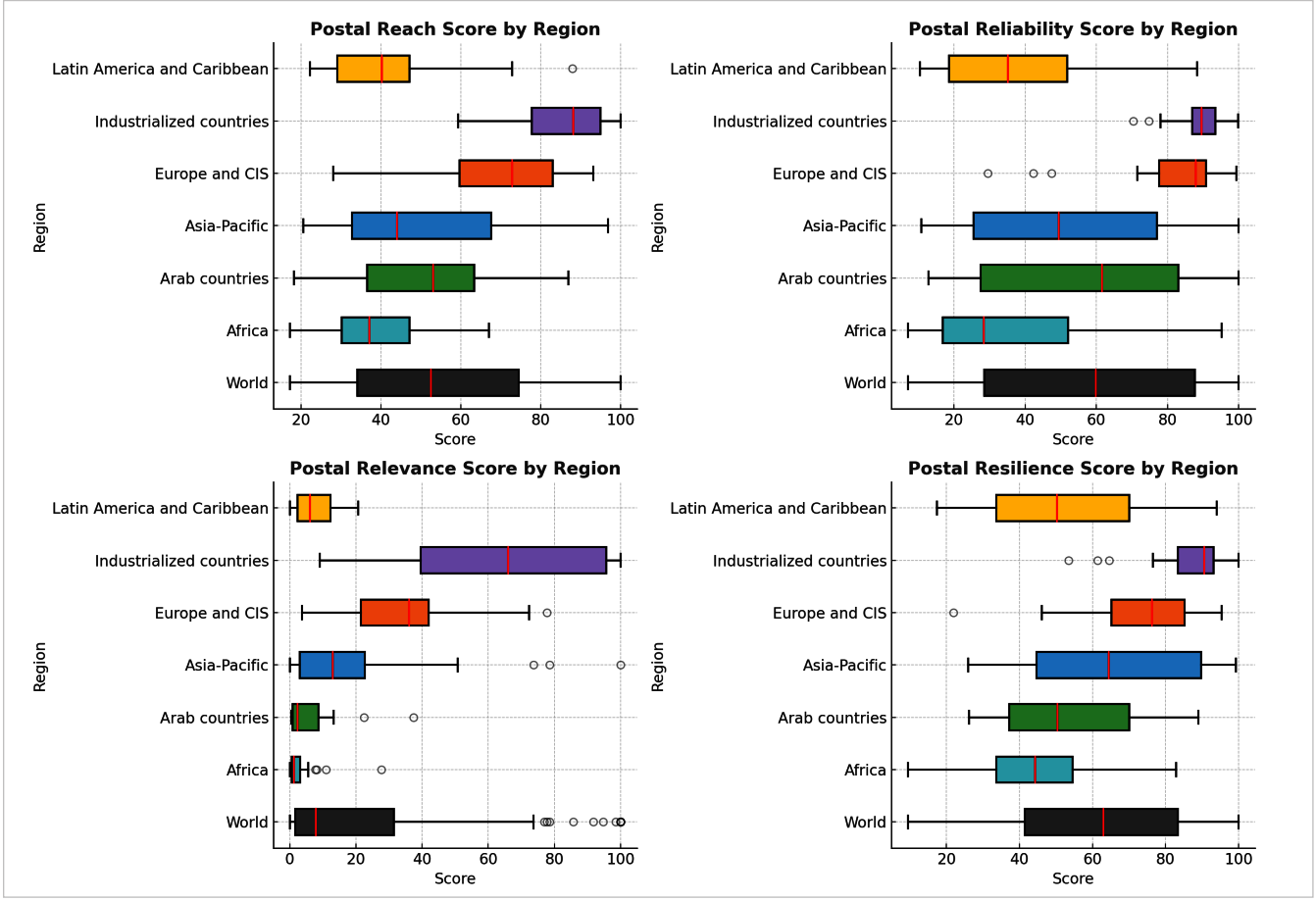


Figure 16: **2023 reach-reliability correlation**

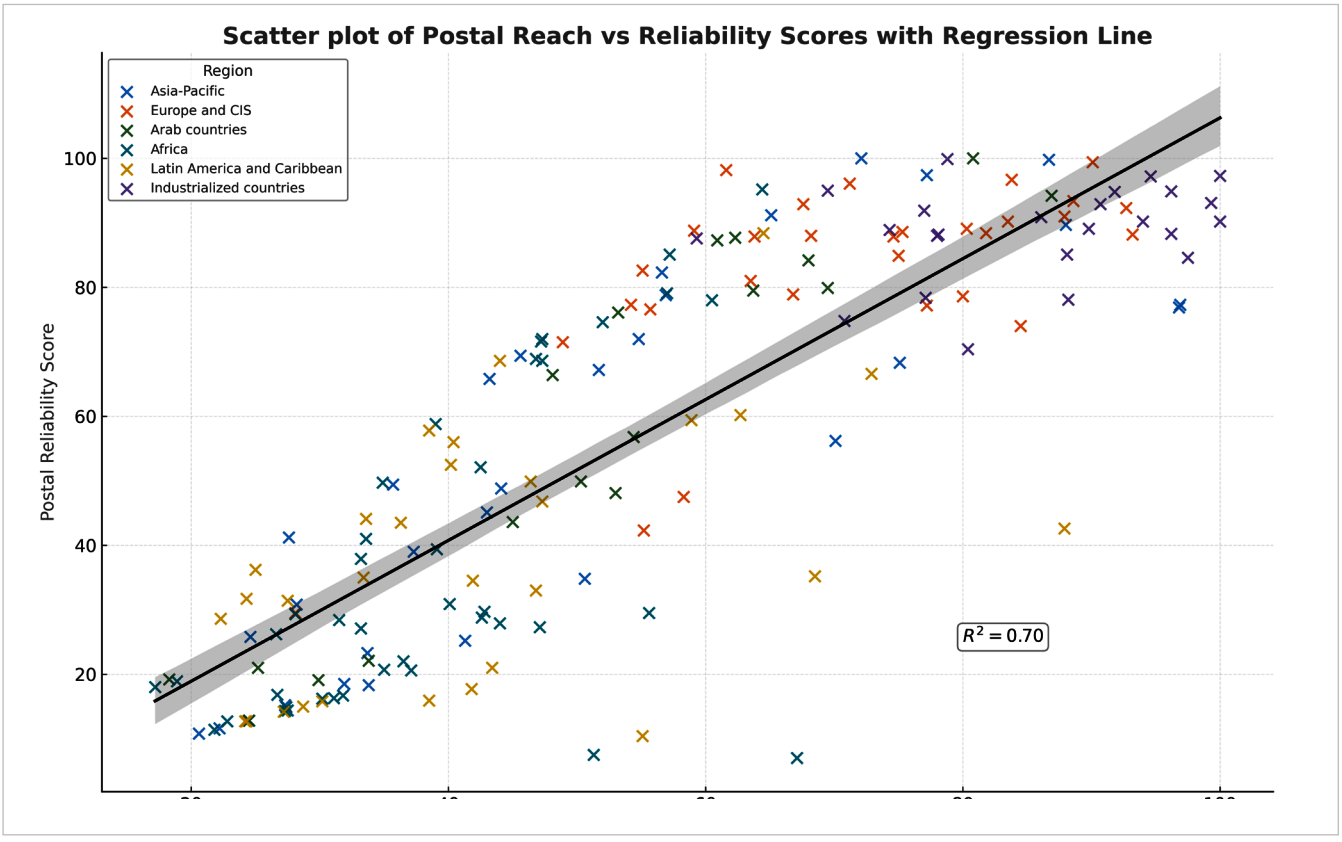
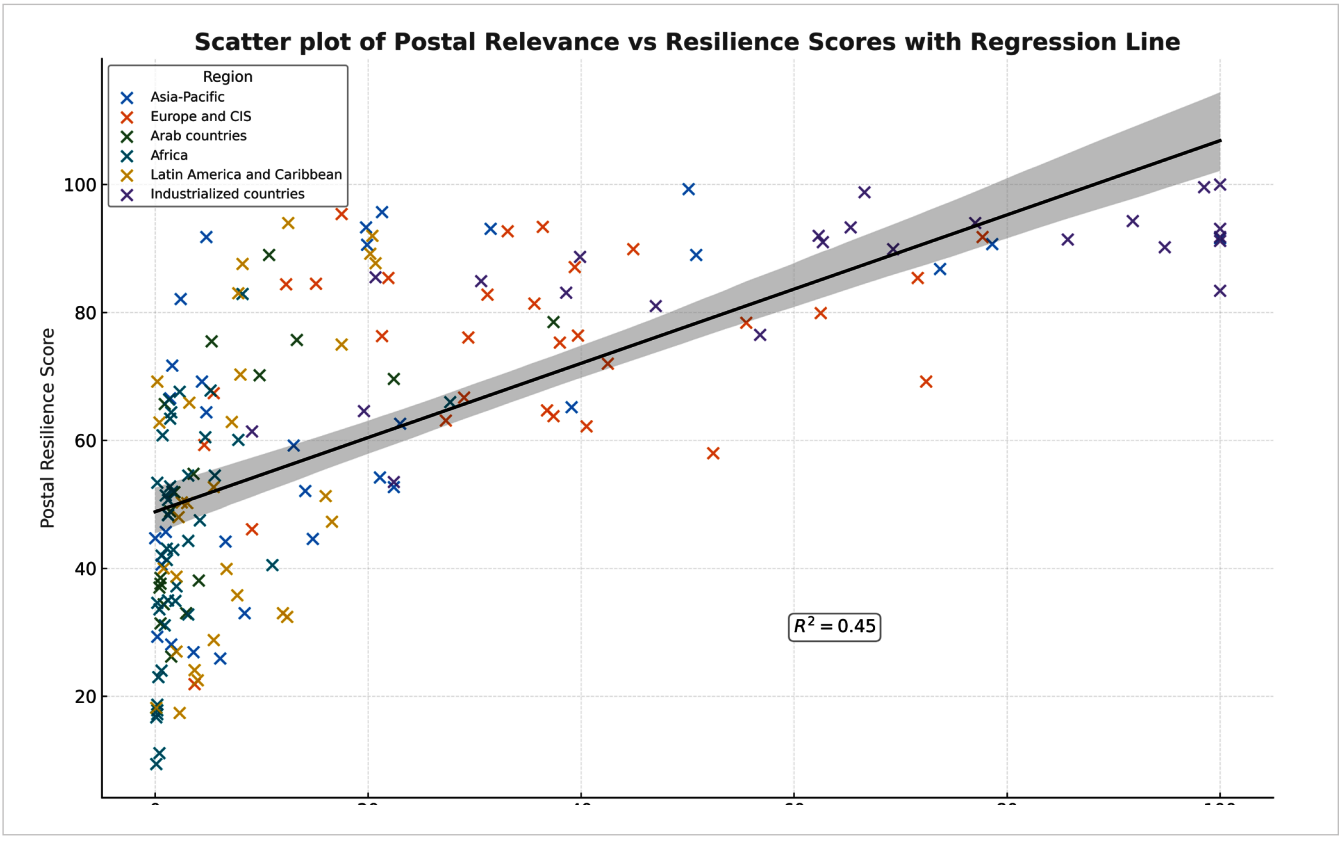


Figure 17: **2023 relevance-resilience correlation**



The statistical analysis reveals that only industrialized countries and those in the Europe and CIS regions maintain sufficiently high levels of inbound and outbound connectivity to sustain their cross-border postal logistics links.

Consequently, many countries in the Asia-Pacific, Arab, and Latin America and Caribbean regions face a high risk of becoming increasingly disconnected from the global postal network, further undermining their rates of postal internationalization. It is worth noting that, in this Latin American group, Brazil clearly remains a positive reach outlier – an over-achiever – as shown by the box-plot analysis.

In terms of postal reliability, industrialized countries again lead with high, consistent scores, underscoring their capacity to deliver services efficiently and dependably. The Europe and CIS region follows but shows a broader range of scores, highlighting the diversity of postal reliability within the region.

Asia-Pacific and the Arab countries have lower median scores and wider variability, pointing to persistent issues with timely and reliable service delivery, which could be attributed to infrastructural deficits and operational inefficiencies.

Latin America and Africa have lower variability in reliability scores, but the least reliable delivery networks of all regions. The broad weaknesses in postal reliability further limit the international development of their postal services.

FOCUS: REACH-RELIABILITY CORRELATION

There is a strong correlation between reliability and reach scores, as illustrated in Figure 16, where each point represents a country.

The scatter plot of postal reach versus postal reliability scores, coloured by world regions, reveals a strong positive correlation between these two dimensions, as indicated by an R^2 value of approximately 0.7 (a very high value for cross-sectional data).

This suggests that countries with higher postal reach also tend to have higher postal reliability, which is expected given the interdependence of these factors in a well-functioning postal system. It also highlights the value of successful postal internationalization on reliability of service improvements.

Industrialized countries, depicted in blue on the chart, are clustered towards the top-right, signifying high scores in both reach and reliability. This is a testament to their well-developed postal infrastructure. Similarly, Europe and the CIS, marked in green, exhibits high scores, albeit with greater variability. This suggests a range of effectiveness in these countries' postal services. Collectively, these regions are most likely to succeed in postal interconnections at an international level, typically handling the largest volumes of mail exchanged both inter-regionally and globally.

However, despite this advantage, the rate at which these services are internationalizing has been declining. Notably, many industrialized nations fall below the regression line on the chart, indicating that their reliability is lower than expected, given their extensive reach. This underperformance may be attributed to the continued reliance on legacy networks primarily designed for letter delivery, even as consumer demand increasingly shifts towards parcels and merchandise ordered online.

In the Asia-Pacific region, represented in orange on the chart, there is a broad spectrum of performance: while some countries exhibit high reliability, others fall short in reach. Latin America and the Caribbean, depicted in purple, along with Africa, shown in brown, generally score lower on both metrics, although there are notable exceptions that exceed expectations.

Arab countries, coloured in red, vary from weak to moderate in performance across both dimensions. The overall lower scores in these regions significantly hinder both intra-regional and inter-regional postal connections, reflecting their limited capacity to efficiently handle and transport mail and parcels across borders.

FOCUS: RELEVANCE-RESILIENCE CORRELATION

Similar to a reach-reliability correlation, there is a strong correlation between the relevance and reach scores of countries. The scatter plot for postal relevance versus postal resilience scores in Figure 17, colour-coded by world region, reveals a moderate positive correlation between these two dimensions, with an R^2 value of approximately 0.45. This indicates that about 45% of the variance in postal resilience scores can be explained by postal relevance scores. The relatively moderate R^2 suggests that while there is a connection between relevance and resilience, other factors beyond relevance may be significantly influencing resilience, and vice versa.

The scatter plot starkly contrasts postal relevance scores across different regions. Industrialized countries lead, displaying a broad range of scores that reflect varying degrees of adaptation to digital advancements. The Europe and CIS region follows, with Türkiye notably excelling as a clear outlier in postal relevance according to the box-plot analysis.

Conversely, Latin America, the Caribbean, the Arab countries and Africa report the lowest scores, highlighting challenges these regions face in maintaining postal service relevance in an increasingly digital world. These difficulties likely stem from struggles to integrate new technologies and expand services that align with the evolving needs of their populations.

Nonetheless, there are exceptions within these regions, such as Morocco, Algeria, Mauritius, Mozambique and Tanzania (United Rep.), which have been statistically identified as significantly outperforming in postal relevance.

In the Asia-Pacific region, China, Singapore and Korea (Rep.) stand out as substantial over-achievers compared to their regional counterparts, which generally show relatively low levels of postal relevance.

In a world where postal services face existential threats, and the relevance of traditional business models is challenged, it is surprising that more strategic efforts are not made to internationalize services and regain relevance and stronger market positions, especially in the context of global online selling.

As for postal resilience, the box-plot analysis of country scores () showed that industrialized countries not only maintain robust postal networks, but have also developed systems capable of withstanding and adapting to economic, social, and technological changes.

This adaptability is critical for ensuring long-term sustainability. Europe and CIS nations exhibit a similar trend, albeit with slightly lower resilience levels. The Asia-Pacific region, along with Latin America and the Caribbean, shows a significant spread in resilience scores, reflecting a mixed picture where some countries are successfully building more resilient systems, while others continue to face challenges that could impede their long-term development. In contrast, the Arab countries and Africa display lower and more concentrated resilience scores, underscoring the urgent need for strategic investments to enhance the adaptability and sustainability of their postal services.

Resilience is a crucial dimension, especially regarding the quality of tracking information, which is vital for successful postal internationalization. By strengthening this aspect, postal networks could secure a definitive competitive edge over alternative cross-border delivery systems, potentially positioning themselves as the preferred global solution in the future.

Despite the moderate correlation, countries with higher relevance scores generally tend to exhibit higher resilience scores, though the relationship is not as pronounced as that between reach and reliability. The industrialized countries and Europe and CIS regions consistently perform well in both relevance and resilience.

In contrast, regions like Africa and the Arab countries display greater variability, with some countries excelling in relevance but struggling in resilience, or showing the opposite trend.

The Asia-Pacific region, in particular, demonstrates the greatest variability in the combined performance of relevance and resilience, underscoring the diversity and uneven development of postal services across the region.

Overall, our analysis underscores the disparities in postal development across regions, emphasizing the critical areas where targeted interventions are necessary.

The wide variations within and between regions reflect different stages of development, where the most advanced countries continue to innovate and expand their postal services, while others struggle with foundational issues that hinder their progress.

This data-driven insight is vital for formulating policies that not only address these disparities but also leverage the strengths of higher-performing regions to foster global postal development.

CHAPTER 6

2023 2IPD SCORES BY COUNTRY

The appendix to this report provides score and sub-score tables, along with the final 2IPD scores by country, organized according to their respective PDL and region. This file is also available as a spreadsheet to allow for easier comparative peer-score analysis.[7]

Figure 18 highlights countries at PDLs 10, 9, and 8, all of which demonstrate high levels of postal development. The majority of these countries are part of the industrialized countries group, underscoring their advanced postal infrastructures and comprehensive service offerings that play a crucial role in supporting robust economic growth.

Figure 19 shifts the focus to countries at PDLs 7, 6, and 5, which are actively developing and refining their postal services with the goal of advancing to the higher PDL 8. These nations are distributed across a wide range of regions, including Europe and CIS, Asia-Pacific, Latin America and the Caribbean, Arab countries, and Africa.

This diversity highlights the significant progress these countries have made in their postal development efforts. However, their advancements remain relatively fragile, underscoring the need for bold policy support and critical investments to further strengthen their postal systems. Such efforts are essential not only for reaching higher levels of postal development but also for enhancing national development and long-term prosperity.

Figure 20 explores PDLs 4 and 3, where postal development is still in its early, formative stages. Countries within these levels are predominantly from Africa, Asia-Pacific, and Latin America and the Caribbean, regions that often grapple with significant challenges in modernizing their postal services. These challenges can include limited infrastructure, inadequate funding, and a lack of technological integration, all of which can hinder the efficiency and reach of postal networks.

In these countries, the role of the postal sector in national development is still emerging, yet it holds immense potential.

These countries are at a critical juncture where strategic, targeted investments and comprehensive reforms are essential. By improving postal infrastructure, enhancing service reliability, and integrating modern technologies, these nations can significantly boost their postal sectors.

Such advancements would not only enhance communication and commerce, but also contribute to broader economic development objectives, such as financial inclusion, job creation, and connectivity, particularly in rural and underserved areas.

Moreover, as these countries work to elevate their postal services, there is an opportunity to incorporate sustainable practices from the outset. Integrating green technologies and practices can ensure that postal development aligns with global sustainability goals, offering a more resilient and future-proof postal system.

In doing so, these nations can lay the groundwork for a postal network that not only supports their immediate economic needs but also contributes to their long-term prosperity and integration into the global economy.

Figure 21 concludes this part of the analysis by focusing on countries at PDLs 2 and 1, which represent the lowest levels of postal development. These nations, predominantly located in the Caribbean, small island developing states in Asia-Pacific, and Sub-Saharan Africa, face profound challenges in their postal sectors.

Their postal systems are often characterized by limited infrastructure, outdated technology, and insufficient funding, which severely constrain their ability to meet even the most basic postal needs of their populations.

For these countries, the need for comprehensive reforms and substantial investment is urgent. Strengthening their postal services is not just a matter of enhancing economic growth; it is also crucial for ensuring basic connectivity and social inclusion. In many of these regions, postal networks serve as a lifeline for remote and underserved communities, providing essential services such as mail delivery, financial services, and access to

7 The data file can be accessed from the relevant annual report page at www.upu.int/en/universal-postal-union/activities/research-publications/integrated-index-for-postal-development.

Figure 18: **2023 countries at PDLs 8–10**

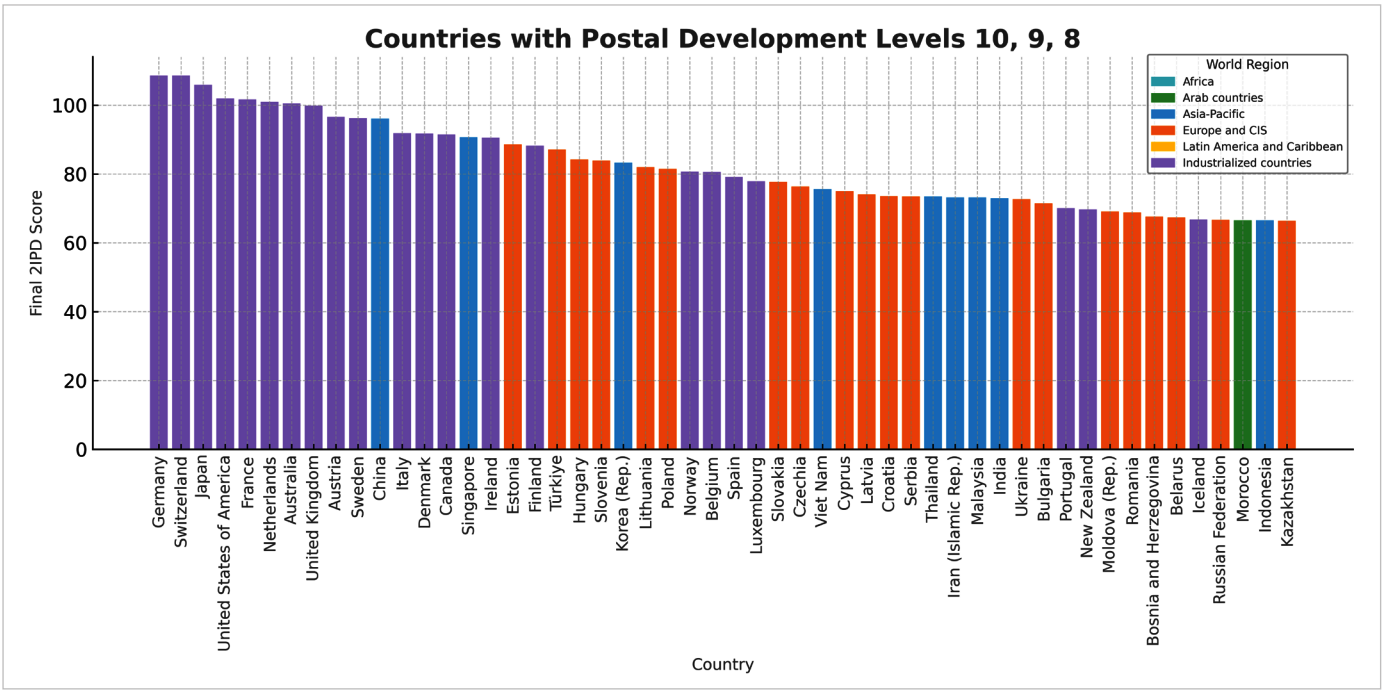


Figure 19: **2023 countries at PDLs 5–7**

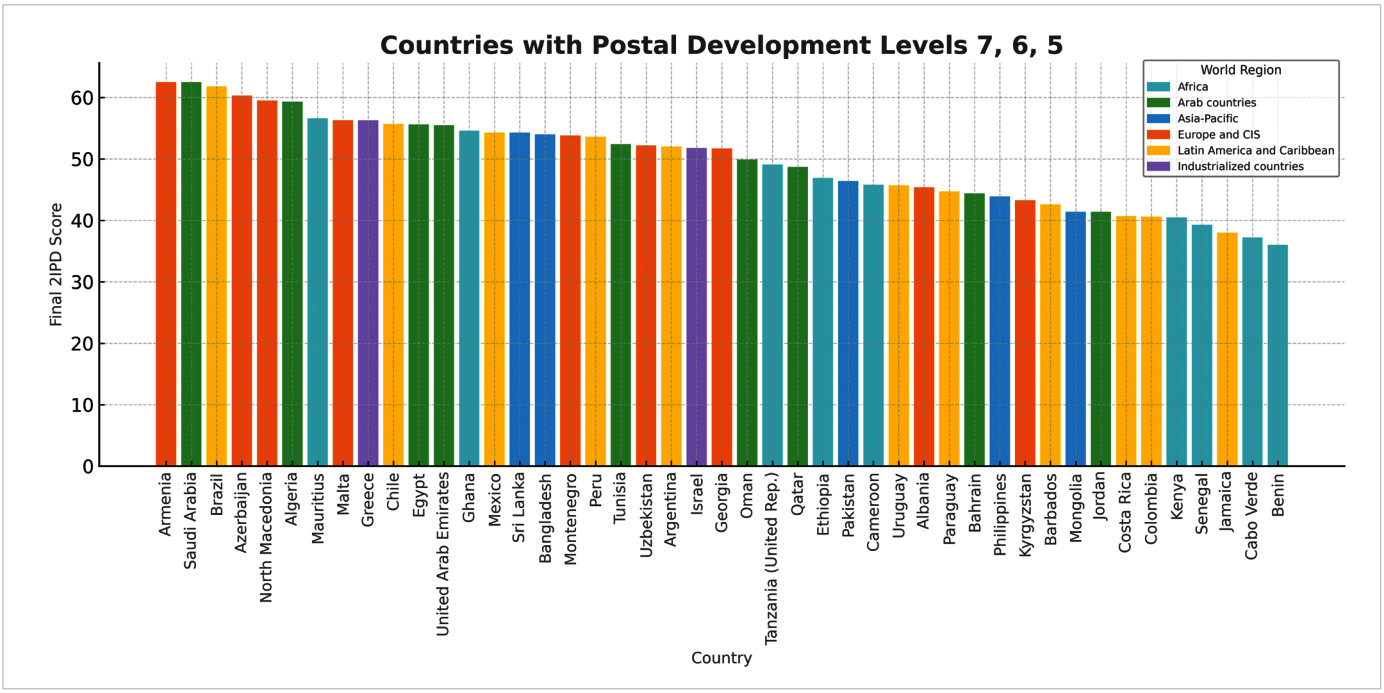


Figure 20: **2023 countries at PDLs 3 and 4**

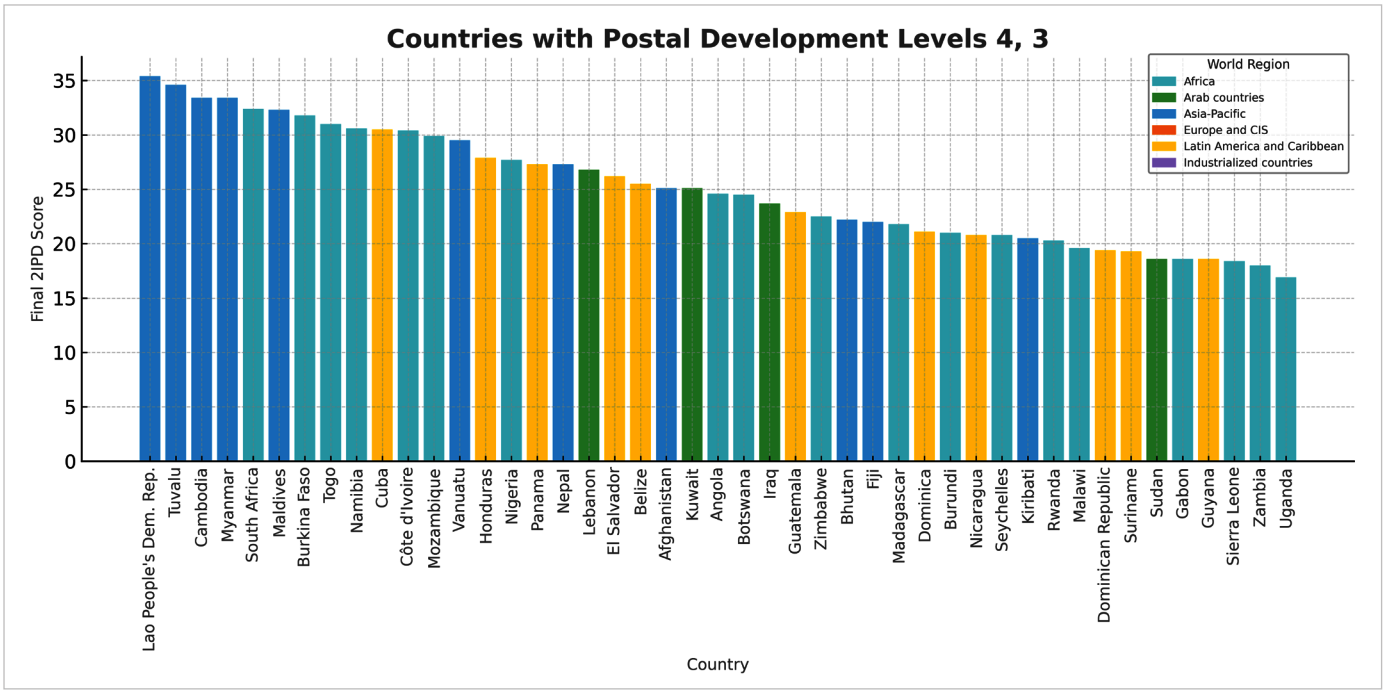


Figure 21: **2023 countries at PDLs 1 and 2**

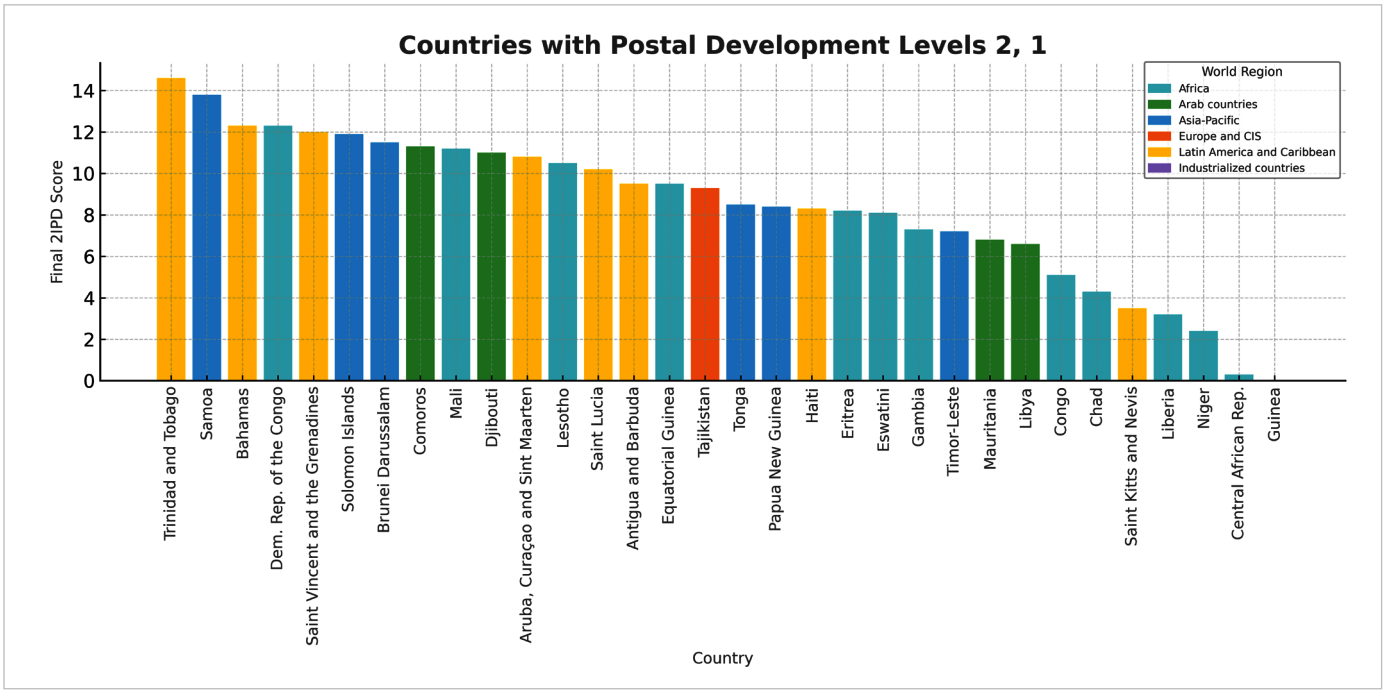
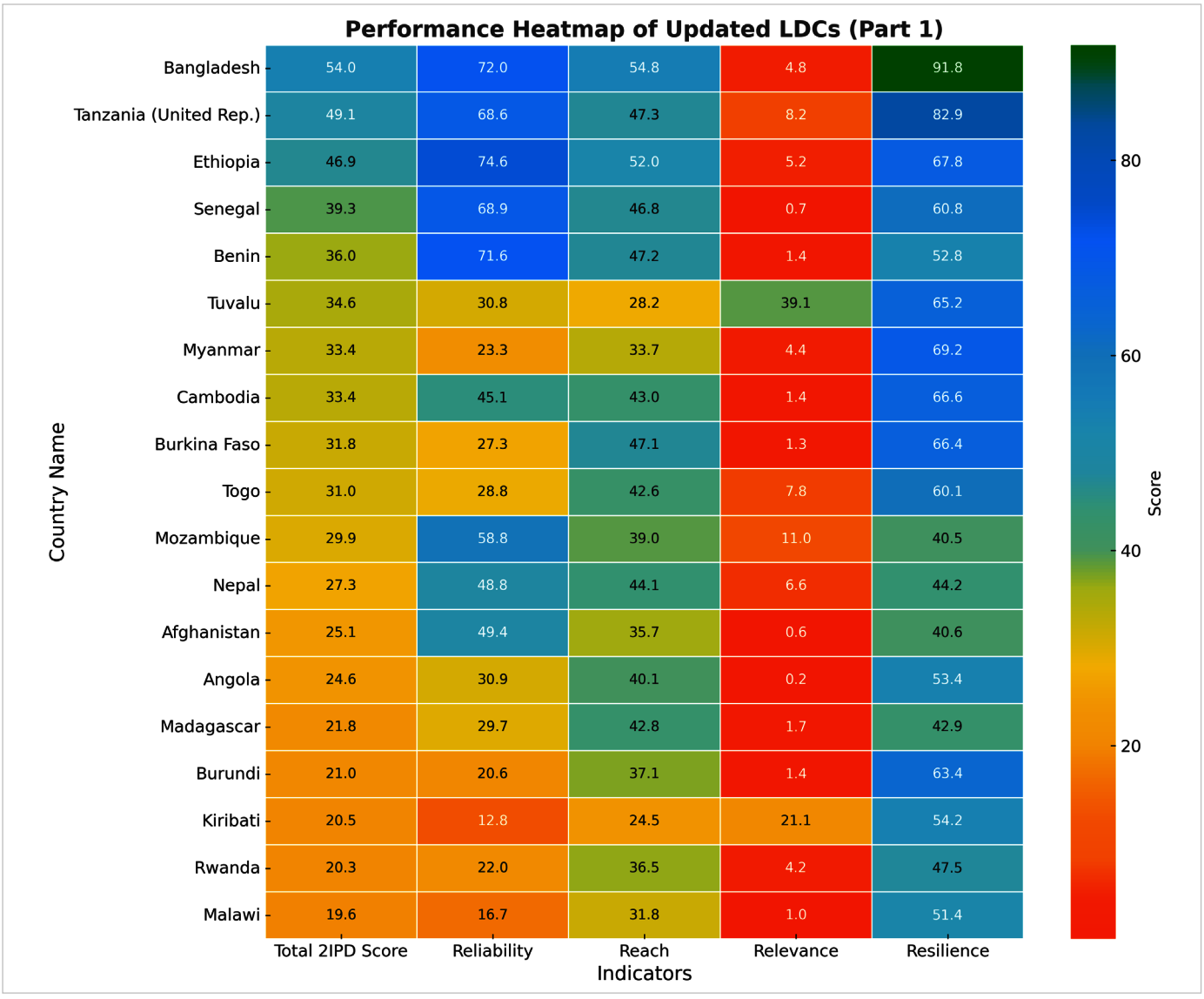


Figure 22: **2023 LDC 2IPD sub-score performance heatmap**

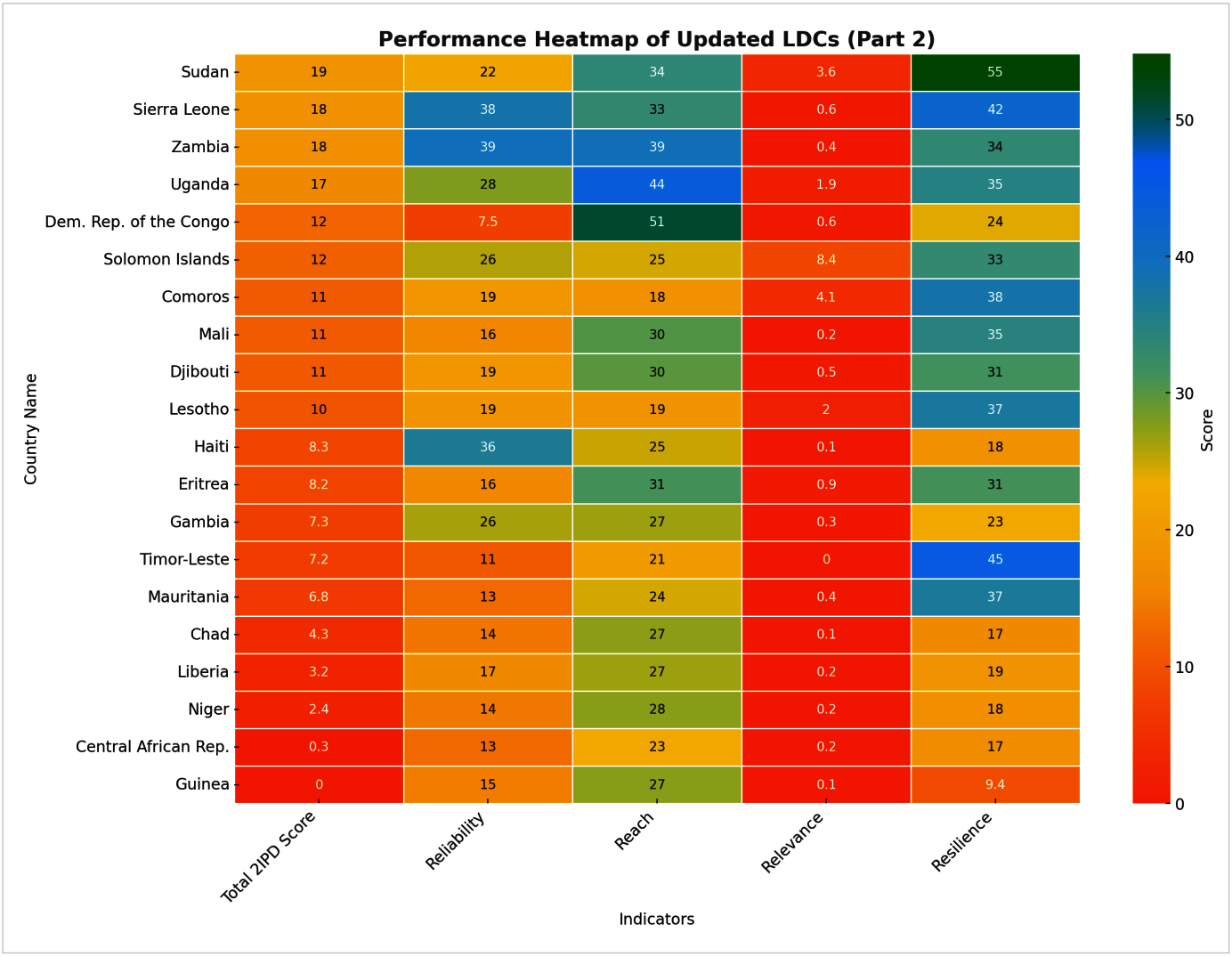


government resources. Improving these services is vital for reducing inequalities and fostering social cohesion.

Furthermore, the development of robust postal systems in these countries could play a key role in their broader national and regional development strategies. By enhancing postal infrastructure, these nations can improve access to markets, support small and medium-sized enterprises, and facilitate e-commerce, which is increasingly becoming a critical component of economic growth.

Additionally, as these countries strive to integrate more fully into the global economy, a reliable and efficient postal system will be essential for building international partnerships and attracting foreign investment.

In summary, for countries at PDLs 2 and 1, advancing their postal services is not just about economic advancement – it is about ensuring that their citizens are connected to the broader world, with all the opportunities and benefits that come with it. This makes the reform and investment in their postal sectors a priority that extends beyond economic metrics, touching on fundamental aspects of human development and social progress.



2023 POSTAL PERFORMANCE: FOCUS ON LDCS

We provide a detailed heatmap of postal development performance among the least developed countries (LDCs), highlighting significant disparities in the four key dimensions – reliability, reach, relevance and resilience – that define the 2IPD framework.

The heatmap serves as a visual representation of how LDCs fare across these dimensions, underscoring the challenges they face in modernizing their postal systems and integrating into the global postal network.

One of the most striking observations from the sub-score performance heatmap in Figure 22 is the variability of scores, particularly in the reliability and resilience dimensions.

For instance, countries like Senegal and Benin demonstrate relatively high reliability scores – 68.9 and 71.6, respectively – indicating that, despite being LDCs, they have managed to establish somewhat dependable postal services. However, these countries struggle with relevance, with scores as low as 0.7 and 1.4, respectively, suggesting that their postal services may not be fully aligned with current market demands or technological advancements

In terms of resilience, Bangladesh stands out with a score of 91.8, which is exceptionally high for an LDC. This indicates that Bangladesh has made significant strides in adapting its postal system to economic and technological disruptions.

In contrast, Guinea and the Central African Republic score poorly across all dimensions, particularly in resilience, with scores of 9.40 and 17.20, respectively. This highlights the severe challenges these countries face, not only in maintaining basic postal services but also in adapting to broader economic and technological changes.

The reach dimension shows relatively low scores across most LDCs, with very few exceptions.

For example, Bangladesh and Ethiopia have higher scores in this dimension – 54.8 and 52.0, respectively – indicating better geographical coverage and international connectivity. However, these are exceptions rather than the norm, as most LDCs, such as Chad and Guinea, score below 30.00 in reach, pointing to significant gaps in their ability to connect with global postal networks.

Finally, the relevance dimension is where most LDCs show significant room for improvement. The majority of LDCs score below 3.0, indicating that their postal services are not yet fully integrated into the digital economy, nor are they meeting the evolving demands of their populations. This lack of relevance is a critical barrier to leveraging postal services as a driver of economic growth and development.

The heatmap underscores the multifaceted challenges that LDCs face in advancing their postal development. Many of these countries are grappling with infrastructural deficiencies, limited financial resources, and a lack of technological integration, all of which hinder their ability to provide reliable, far-reaching, relevant postal services.

The variability in scores also points to the potential for peer learning and cooperation among LDCs.

Countries that have managed to achieve relatively higher scores in certain dimensions could serve as models or mentors to others, sharing best practices and lessons learned in overcoming similar challenges.

Additionally, the UPU can play a crucial role in facilitating this exchange of knowledge and providing the necessary technical cooperation and resource support required to improve the postal development scores of LDCs.

CHAPTER 7

LEADERS IN POSTAL EXCELLENCE, REGIONAL CHAMPIONS AND RISING STARS

The 2024 UPU 2IPD Awards celebrate the outstanding achievements of postal services worldwide, shining a spotlight on countries that have excelled in delivering exceptional postal solutions, demonstrated strong regional leadership, and made significant strides in postal development. These awards are based on the comprehensive analysis of the 2IPD results and the PDL for 2023.Figure 23 presents a detailed performance heatmap of the winning countries, illustrating the breadth and depth of their accomplishments across key postal service indicators.

LEADERS IN POSTAL EXCELLENCE

In the category of Leaders in Postal Excellence, the countries classified under PDL 10 stand out for their superior performance across all indicators, reflecting their robust and highly developed postal systems. Germany and Switzerland, both achieving a 2IPD score of 108.6, share the distinction of having the best postal services in the world.

This identical score places them at the pinnacle of postal excellence, as seen in the heatmap.

Germany, with near-perfect scores in reach (99.3) and relevance (100), exemplifies a well-rounded and resilient postal infrastructure. The country not only provides high-quality data for the UPU's official postal statistics but has also made significant strides in decarbonizing its operations. These efforts underscore Germany's commitment to sustainability while maintaining exceptional service standards.

Similarly, Switzerland, with a stellar reliability score of 97.1 and a perfect 100 in relevance, has solidified its position as a global leader in postal services for the eighth consecutive year. Switzerland's precision in providing postal statistics is unparalleled, and its innovative approaches to environmental sustainability have effectively decoupled carbon emissions from the growth of its parcel traffic, setting a benchmark for the industry.

Japan closely follows with an impressive 2IPD score of 105.9, showcasing the robustness of its postal system. This is particularly evident in its perfect scores of 100 in both relevance and resilience, underscoring Japan's ability to consistently meet diverse postal needs while maintaining operational integrity. Japan's flawless provision of data to the UPU's big data systems further highlights its commitment to transparency and efficiency in global postal operations.

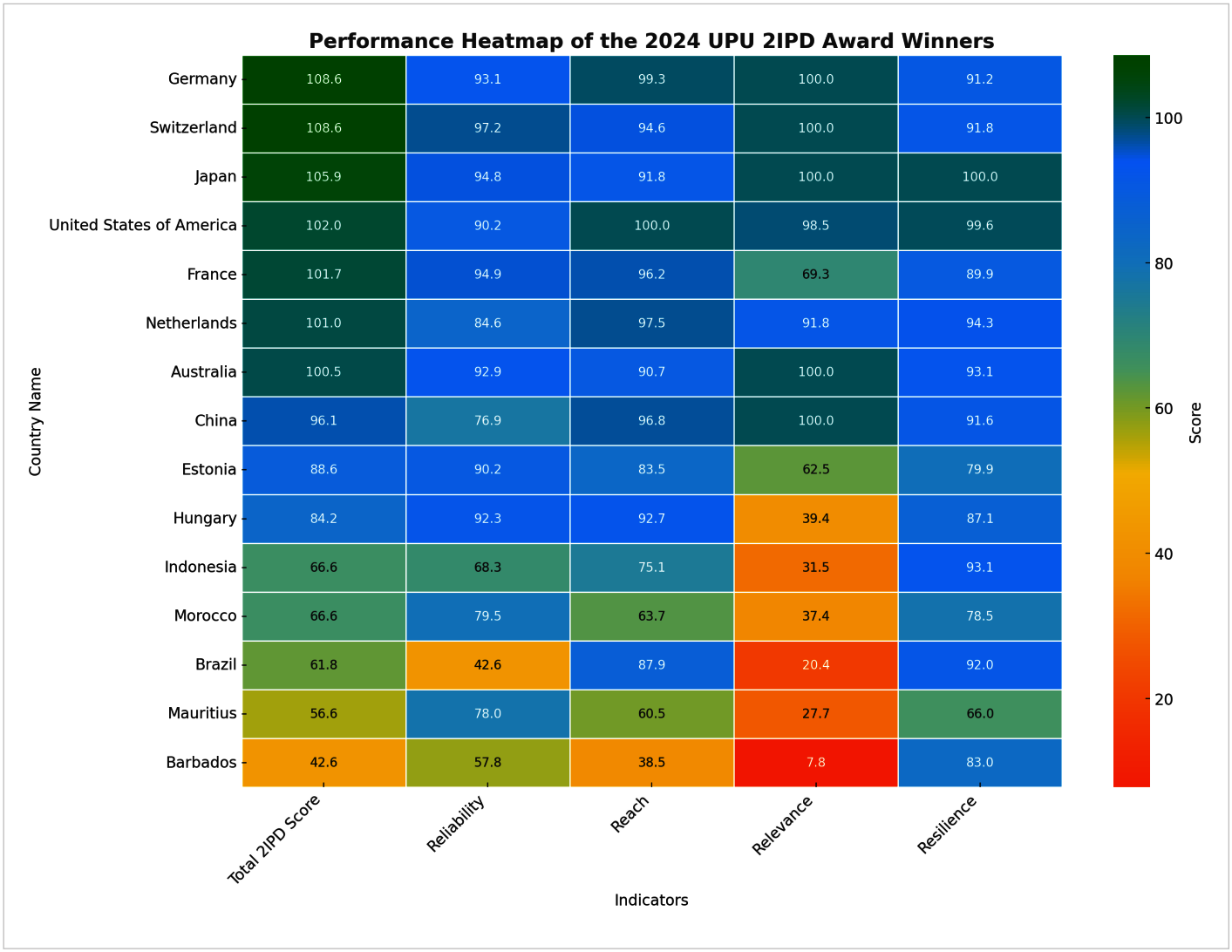
The United States of America, with a commendable 2IPD score of 102.0, excels in reach, achieving a perfect score of 100. This reflects the extensive and effective coverage of its postal network. Additionally, the United States demonstrates remarkable resilience with a near-perfect score of 99.6, a testament to the robustness of its postal services. This resilience is closely linked to the high quality of its international postal tracking data, which ensures seamless engagements with customers across borders.

France, with a 2IPD score of 101.7, exemplifies postal excellence, particularly in reach (96.2) and reliability (94.9). This achievement is further bolstered by France's outstanding provision of postal statistics, contributing to its leadership in global postal data quality. Additionally, France stands out among UPU members for achieving the strongest decoupling between the growth of postal traffic and carbon emissions, underscoring its commitment to sustainability.

The Netherlands, with a 2IPD score of 101.0, distinguishes itself with impressive scores in reach (97.5) and resilience (94.3). These metrics reflect a well-balanced and efficient postal service that adeptly handles both volume and operational challenges. Australia, scoring 100.5, demonstrates exceptional strength in relevance, achieving a perfect score of 100. This success is largely attributed to its innovative business and network model, which effectively meets the evolving demands of its postal customers.

Overall, these countries at PDL 10 exemplify the highest standards of postal services, consistently delivering reliable, comprehensive and resilient postal solutions, as reflected in the heatmap.

Figure 23: **Sub-score performance heatmap of 2024 2IPD awardees**



REGIONAL CHAMPIONS

The Regional Champions represent the best-performing countries in their respective regions, showcasing excellence in postal development that serves as a benchmark for neighbouring countries.

China, with a 2IPD score of 96.1 (PDL 9), leads the Asia-Pacific region. Its strong performance in reach (96.8) and relevance (100) highlights its capability to maintain and expand postal services in a rapidly growing and diverse region.

Estonia (PDL 9), scoring 88.6 in the 2IPD, is the regional champion for Europe and CIS. It excels in reliability (90.2) and reach (83.5), reflecting its innovation and efficiency in postal services.

Morocco (PDL 8), with a 2IPD score of 66.6, leads the Arab countries. Its strong scores in reliability (79.5) and resilience (78.5) indicate its growing influence and capacity in the region.

Brazil (PDL 7), with a 2IPD score of 61.8, stands out as the leader in Latin America and the Caribbean. Despite challenges, Brazil's postal system is making significant strides, particularly in resilience (92.0) and reach (87.9).

Mauritius, with a 2IPD score of 56.6, is the champion in Africa. Its reliability (78.0) and resilience (66.0) highlight its progress in developing a robust postal infrastructure in the region.

RISING STARS

The Rising Stars of 2024 are countries that have demonstrated exceptional progress in postal development up to the most recent year with available data, which is 2023.

Countries at PDL 10 and established regional champions are excluded from this recognition. To qualify, a country must show notable advancements across all four key 2IPD components – reliability, reach, relevance, and resilience.

Only one country per UPU developing region is selected, highlighting those that combine these improvements most effectively. These nations are on a fast track to becoming global or regional leaders in postal services.

Hungary (PDL 9), with a 2IPD score of 84.2, has shown remarkable improvement across all dimensions of postal development in recent years, particularly excelling in reach (92.7) and reliability (92.3). This rapid progress positions Hungary as a rising star in Europe's postal landscape.

Similarly, Indonesia (PDL 8), with a 2IPD score of 66.6, has achieved substantial gains in all 2IPD 4R components, now boasting strong resilience (93.1) and enhanced reach (75.1). This elevates Indonesia's status as an increasingly important player in Asia-Pacific's postal services.

In the Caribbean, Barbados (PDL 5), with a 2IPD score of 42.6, stands out as the rising star. Its significant recent improvements, particularly in resilience (83.0) and reliability (57.8), signal its potential to emerge as a regional leader in the coming years.

SECTION 4

BENCHMARKING POSTAL POTENTIAL – A NEW MEASURE OF SUCCESS

CHAPTER 8

POSTAL POTENTIAL – A NEW MEASURE OF SUCCESS

METHODOLOGY

This analysis delves into the performance of countries across various PDLs by employing the 2IPD 4R components differential as a pivotal metric.

This analytic approach goes beyond simply recognizing areas of excellence or deficiency; it enables a nuanced understanding of a country's overall postal system. By dissecting performance across the four key 2IPD components, policymakers and key stakeholders can identify specific weaknesses that may be hindering progress.

This granular analysis also ensures that technical cooperation interventions are not only well-targeted but also comprehensive, addressing the root causes of underperformance rather than merely treating the symptoms.

The 2IPD 4R framework assesses postal systems based on four essential dimensions: reliability, reach, relevance and resilience. What sets this analysis apart is its focus on each country's performance relative to its expected benchmark, which is determined by its natural level of postal development.

The differential serves as a measure of how much a country exceeds or falls short of these expectations, offering insights into its actual postal development achievements versus what could typically be expected – or, what might have been possible with the right support, investment and strategy

The analysis further identifies countries that significantly outperform their benchmarks, as well as those that fall behind. Heatmaps are employed to vividly depict these differentials, providing a clear and comparative visualization of both overperformance and underperformance across the postal landscape.

This benchmark accounts for the general geographic and economic conditions and constraints unique to each country. The natural postal development level of a country was meticulously modelled by integrating a range of key geographic and economic variables. These variables encompass critical factors such as whether a country is an island or landlocked, which inherently affects its connectivity and logistical challenges.

Additionally, the analysis considered other geographic indicators that reflect the level of difficulty in accessing and delivering services, such as terrain ruggedness or remoteness. Beyond geography, the model also incorporated economic development indicators, recognizing that a country's level of economic advancement plays a crucial role in determining the quality and extent of its infrastructure, which in turn influences its postal system's capabilities.

To ensure the most accurate and relevant variables were selected, sophisticated analytical techniques, including machine learning algorithms and regression analysis, were employed. These techniques enabled the identification of the variables with the most significant impact on postal performance, allowing for a highly precise modelling process.

By isolating these influential factors, the model was able to predict each component of the 2IPD – reliability, reach, relevance, and resilience – individually. This approach ensures that the predictions are finely tuned to reflect the unique geographic and economic constraints faced by each country.

These predicted scores provide a comprehensive, nuanced picture of what the natural level of postal performance should be for each of the four 2IPD components. When combined, they offer a robust measure of a country's overall natural level of postal development. This benchmark serves as a critical reference point, against which actual performance

can be compared, thereby highlighting areas of both overachievement and underperformance.

This detailed methodology, along with the results and implications of this modelling approach, is planned to be explored in forthcoming research from the UPU, which will delve deeper into the complexities of postal development and its interaction with geographic and economic factors.

RESULTS: GLOBAL TOP PERFORMERS

Figure 24 present the outcomes for the top-performing countries, specifically those whose cumulative percentage differential across all four dimensions of the 4R framework – reliability, reach, relevance, and resilience – exceeds 100 percentage points.

These countries are identified as overachievers, having significantly surpassed the natural postal development benchmarks predicted by their geographic and economic conditions. The heatmaps in these figures provide a detailed visual representation of the percentage differences between each country's expected natural postal scores and their actual performance in each of the 4R dimensions.

For each dimension, the heatmap illustrates the extent to which a country's postal system exceeds (or, in some cases, aligns with) its predicted levels of reliability, reach, relevance, and resilience. This comparative analysis not only highlights the extraordinary achievements of these countries, but also serves as a powerful tool for identifying the specific areas where they excel in relation to their natural constraints.

The visual clarity of the heatmaps enables a straightforward comparison, making it easier to discern patterns of excellence and understand the factors contributing to these countries' superior postal performance.

Countries with a total differential (as indicated in the "Total 2IPD 4R components differential (%)" column) greater than 100 are recognized as top overperformers, demonstrating exceptional postal service performance relative to the expected benchmarks.

These nations, representing a diverse range of PDL categories, consistently surpass natural expectations in one or more of the 2IPD components. This significant overperformance suggests that a combination of key factors contributes to their success, including robust policy frameworks, innovative business models, strategic investments in advanced postal infrastructure, and a heightened capacity for effectively leveraging technology.

These countries not only set a high standard for progress in postal services, but also provide valuable insights and best practices that other nations can emulate. Their ability to excel across multiple 2IPD components highlights the importance of adopting a balanced approach to postal development – one where improvements in reliability, reach, relevance and resilience are achieved simultaneously and in a mutually reinforcing manner. This holistic, eco-systemic development strategy ensures that enhancements in one area support and amplify gains in others, leading to sustainable and comprehensive growth in postal services.

RESULTS: PDLS 8–10

As shown in Figure 25, countries at the highest Postal Development Levels (PDLs 10, 9, and 8) generally exhibit strong and consistent performance across all 2IPD components. The heatmaps for these PDL categories illustrate that these nations not only meet but often surpass expectations in critical areas such as relevance and reliability.

This overperformance is indicative of the mature and sophisticated state of their postal systems, which are bolstered by robust infrastructure and a sustained commitment to innovation.

However, the differentiation observed among these top-tier countries suggests that, even within this elite group, certain nations manage to achieve exceptionally higher levels of service efficiency and effectiveness, distinguishing them from their peers.

Notably, the more modest overperformance scores in the reach component suggest an untapped potential for enhancing international postal connectivity and further advancing postal service internationalization within these leading PDL groups. This observation aligns with the long-term evolutionary trends highlighted in chapter 1, emphasizing the ongoing opportunities for growth even among the most advanced postal systems.

RESULTS: PDLS 5–7

In the mid-tier Postal Development Levels (PDLs 7, 6, and 5), the performance differentials compared to natural benchmarks become increasingly varied, as depicted in Figure 26.

Within these categories, the diversity in outcomes is striking: some countries demonstrate substantial differentials in specific components, signalling areas of notable strength and potential for upward mobility.

Conversely, others reveal significant underperformance, particularly in the relevance component, underscoring challenges that may impede their progression.

This variation vividly illustrates the transitional nature of these mid-tier PDL categories, where countries are at different stages of their development journey – some on the brink of advancing to higher levels, while others grapple with obstacles that slow their progress.

The mixed results observed in these mid-tier groups can be attributed to several factors. Economic constraints play a crucial role, as limited financial resources can restrict a country's ability to invest in the necessary infrastructure and technology that drive postal system improvements. Infrastructure limitations are another significant challenge, particularly in regions where geographical and logistical difficulties hinder the expansion and efficiency of postal services.

Additionally, varying levels of technological adoption further contribute to this disparity, as countries with more advanced technological integration are better positioned to enhance their postal services and meet the demands of the modern digital economy.

This complex interplay of factors results in a wide range of performance outcomes across these PDL categories, highlighting the need for targeted strategies that address the specific challenges each country faces.

By understanding and mitigating these challenges, mid-tier countries can better position themselves to achieve higher levels of postal development, unlocking their full potential and advancing towards greater international connectivity and service excellence.

RESULTS: PDLS 3 AND 4

Countries in the lower-mid tier Postal Development Levels (PDLs 3 and 4) exhibit an even broader spectrum of performance outcomes, as illustrated in Figure 27.

Within these categories, the disparity between countries is more pronounced, with some nations achieving remarkable overperformance, particularly in the relevance component. These instances of success suggest that certain countries have been able to leverage specific strengths or make strategic investments that allow them to exceed expectations, even under challenging conditions.

However, this positive narrative is contrasted by a significant increase in underperformance, especially in key areas such as relevance and reliability.

This underperformance indicates that many countries within these lower-mid tier categories are struggling to meet even the baseline expectations for postal development. The gap between actual and expected performance is widening, suggesting that these countries are facing substantial barriers that hinder their ability to modernize and enhance their postal services.

Several factors contribute to these challenges. Limited resources are a critical issue, as countries in these tiers often lack the financial and institutional capacity to invest in the infrastructure and technology necessary for significant postal improvements.

Geographic barriers also play a significant role, particularly in nations with difficult terrains or dispersed populations, where maintaining a reliable postal network is inherently more challenging. Furthermore, the slower adoption of new technologies in these countries exacerbates their difficulties. Without the ability to implement and integrate advanced digital solutions, these postal systems struggle to keep pace with the evolving demands of the global economy and the expectations of their citizens.

This combination of factors creates a complex environment where progress is uneven, and the risk of falling further behind is real. For countries in the lower-mid tier PDL categories, overcoming these challenges requires targeted interventions that address both the systemic issues – such as resource limitations and infrastructure deficits – and the need for accelerated technological adoption.

By focusing on these areas, these countries can begin to bridge the gap between their current performance and their potential, laying the groundwork for future growth and development in their postal services.

RESULTS: PDLS 1 AND 2

At the lowest Postal Development Levels (PDLs 1 and 2), the challenges faced by countries become starkly apparent, as depicted in Figure 28.

The heatmaps for these PDL categories reveal a troubling prevalence of negative differentials across key areas of postal development, with positive outcomes being the rare exception rather than the norm.

These pervasive underperformance indicators are not merely reflective of isolated issues, but rather point to deep-rooted, systemic problems that severely hinder the ability of these countries to develop and sustain effective postal services.

The issues faced by countries in these lowest tiers are often multifaceted and complex. Political instability is

a significant barrier, disrupting governance structures and undermining efforts to establish and maintain a functioning postal system. In many cases, insufficient investment in postal infrastructure exacerbates these challenges, leaving countries with outdated or inadequate facilities that are ill-equipped to meet the demands of modern postal operations.

Moreover, broader economic difficulties, including high levels of poverty, limited access to capital, and fragile economic environments, further constrain these nations' ability to implement necessary reforms and improvements.

The underperformance observed in critical components such as relevance, reliability, reach, and resilience underscores the urgency of the situation. These countries are not only failing to meet natural benchmarks; they are also at risk of being left further behind as global postal standards continue to evolve.

The lack of progress in these areas suggests that without significant, targeted interventions, these countries may struggle to ever catch up with their higher-performing counterparts.

Addressing the challenges faced by countries at the lowest PDLs requires a comprehensive approach that goes beyond superficial fixes. There is an urgent need for coordinated efforts that include substantial financial investment, international support, and capacity-building initiatives aimed at strengthening both the institutional, physical and digital infrastructures of these postal systems.

Additionally, addressing the broader socio-economic and political contexts within these countries is crucial, as sustainable improvements in postal services are unlikely to occur in isolation from broader development goals.

In sum, the plight of countries at the lowest PDLs highlights the critical importance of global development cooperation and support in fostering a more equitable and effective global postal system.

By prioritizing interventions in these most challenged nations, the international community can help bridge the gap in postal development, ensuring that all countries, regardless of their starting point, have the opportunity to build robust, reliable and relevant postal services that meet the needs of their citizens.

A TOOL FOR PRIORITIZING TECHNICAL COOPERATION

Postal services play a crucial role in economic and social development, particularly in connecting remote, rural and underserved areas to broader national and global markets. The 2IPD 4R components differential analysis offers a highly effective tool for evaluating and comparing postal performance across various PDLs.

This analytical framework not only highlights the countries that excel in postal service performance but also brings to light those that are struggling, thereby providing invaluable insights for policymakers, the UPU, and international development partners.

By leveraging this analysis, stakeholders can more accurately prioritize interventions, ensuring that limited technical cooperation resources are allocated where they are most needed and can have the greatest impact.

For countries that are significantly outperforming their expected benchmarks, the strategies and practices they have employed can serve as valuable models for other nations. These top-performing countries offer a wealth of best practices that can be studied, adapted and implemented in other contexts, particularly in regions where postal systems are still developing.

By analyzing the factors that contribute to their success – whether in terms of advanced infrastructure, innovative technologies, effective governance, or strategic partnerships – other nations can identify actionable insights that could help them enhance their own postal services.

Conversely, the analysis also identifies countries that face substantial challenges, particularly those in the lower PDL categories.

For these countries, the 2IPD 4R components differential analysis helps to pinpoint the most critical areas requiring targeted assistance. Whether the need is for strengthening infrastructure resilience, improving the reliability of services, or expanding international reach, the analysis provides a clear, data-driven basis for decision-making.

This allows for the development of tailored technical cooperation interventions that address the unique needs and circumstances of each country, thereby maximizing the effectiveness of the support provided and ensuring that no country or community is left behind in the digital age.

Figure 24: **2IPD 4R component variance heatmap – top performing countries (Part 1)**

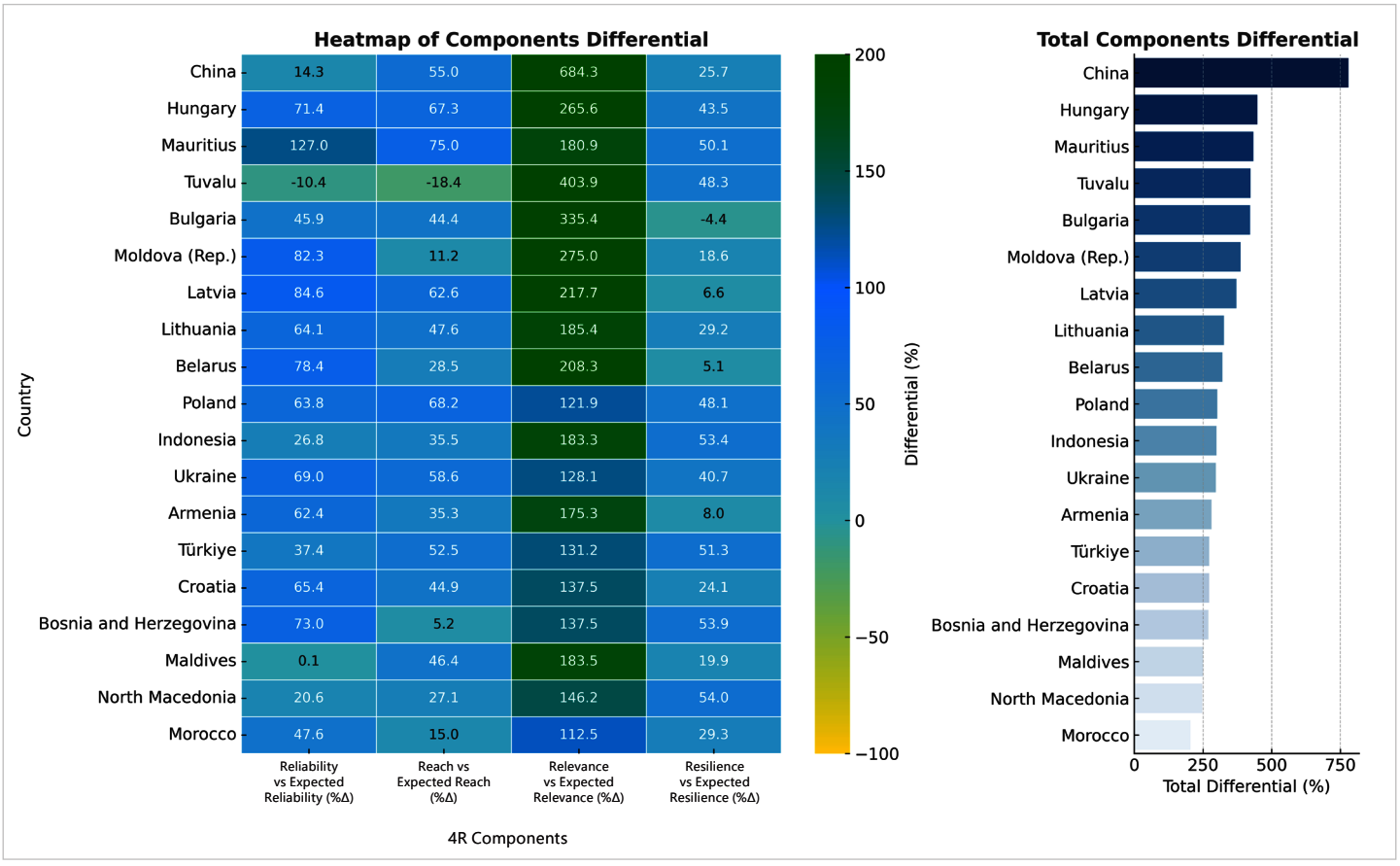


Figure 24: **2IPD 4R component variance heatmap – top performing countries (Part 2)**

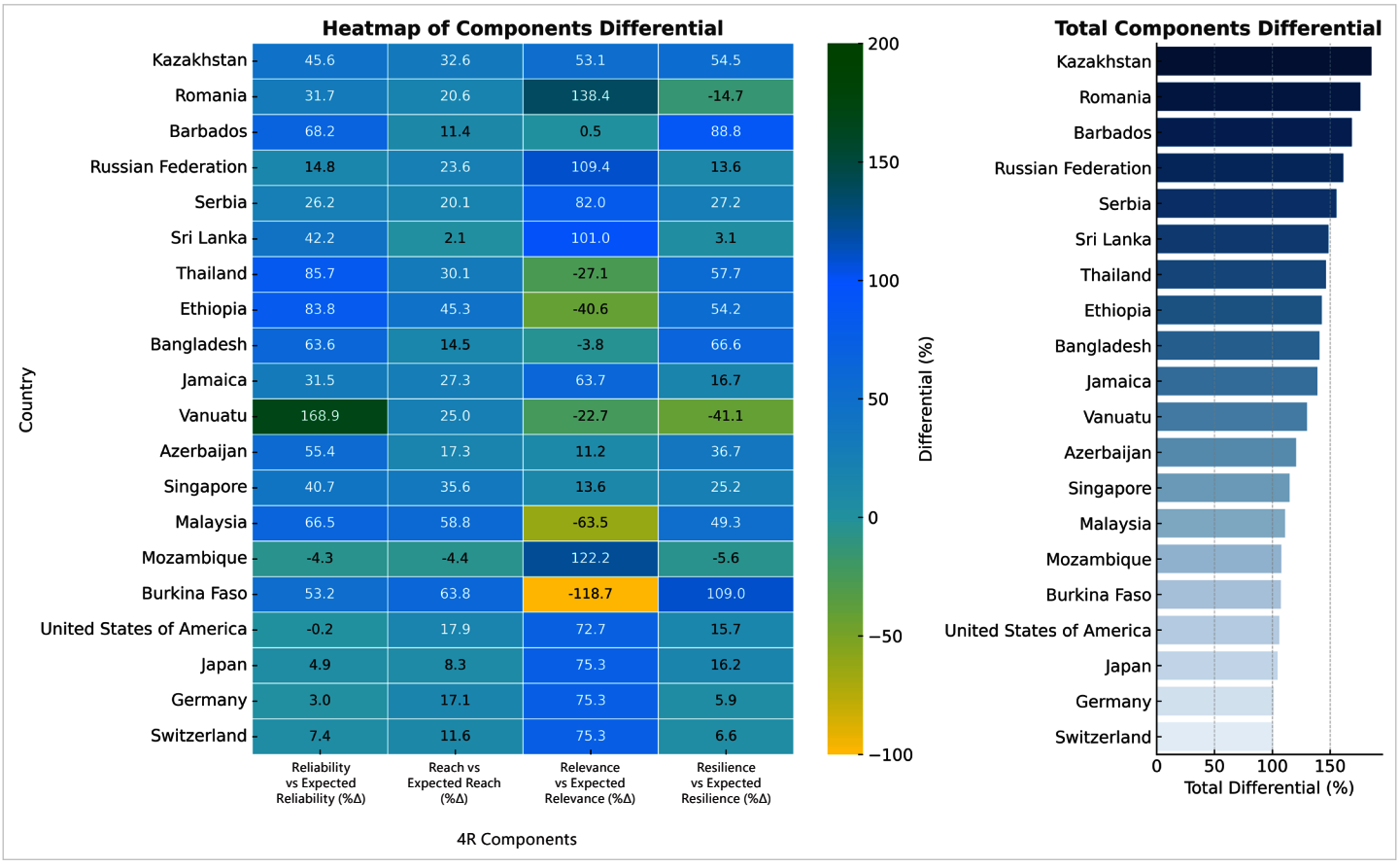


Figure 25: 2IPD 4R component differential heatmap – PDLs 8–10 (Part 1)

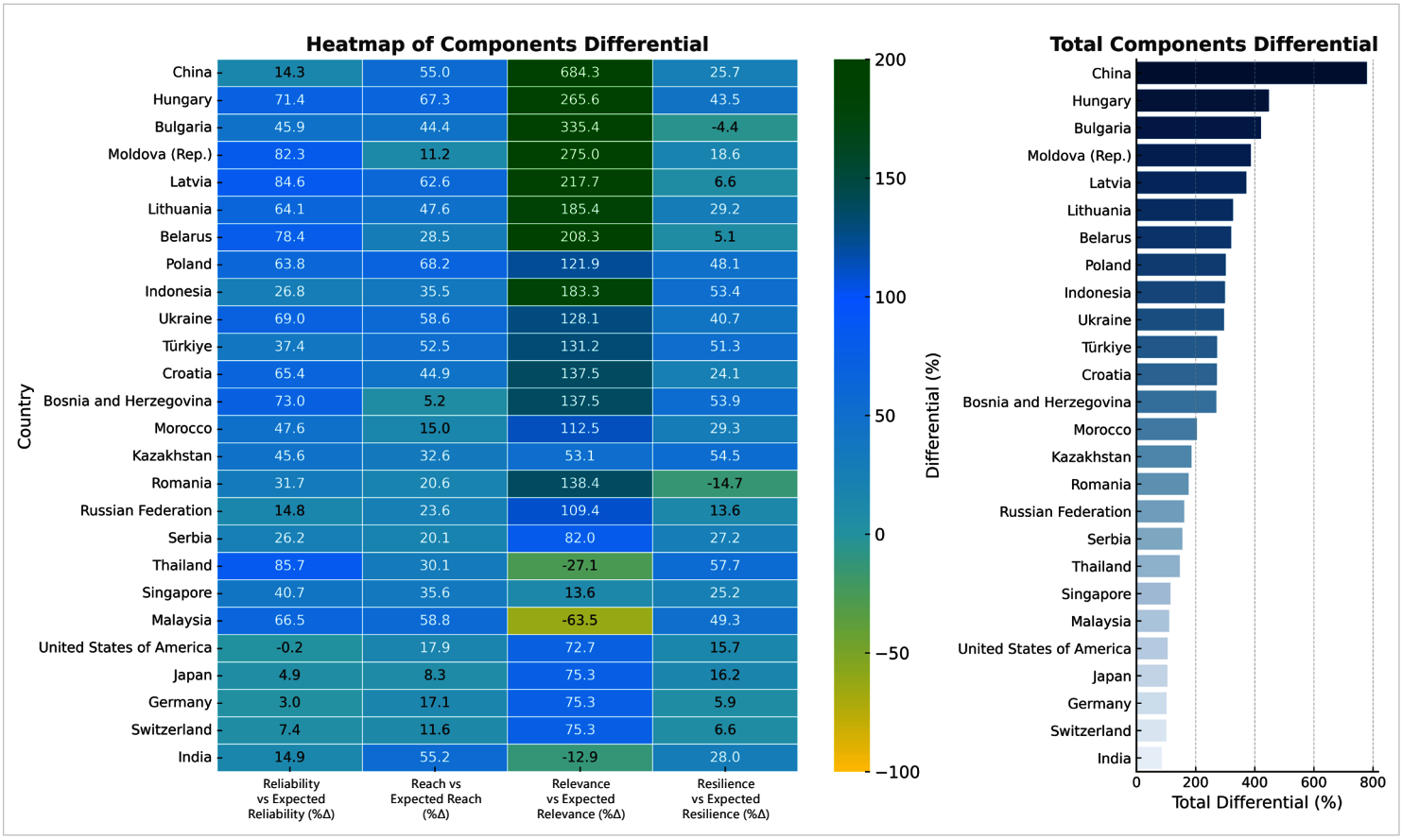


Figure 25: 2IPD 4R component differential heatmap – PDLs 8–10 (Part 2)

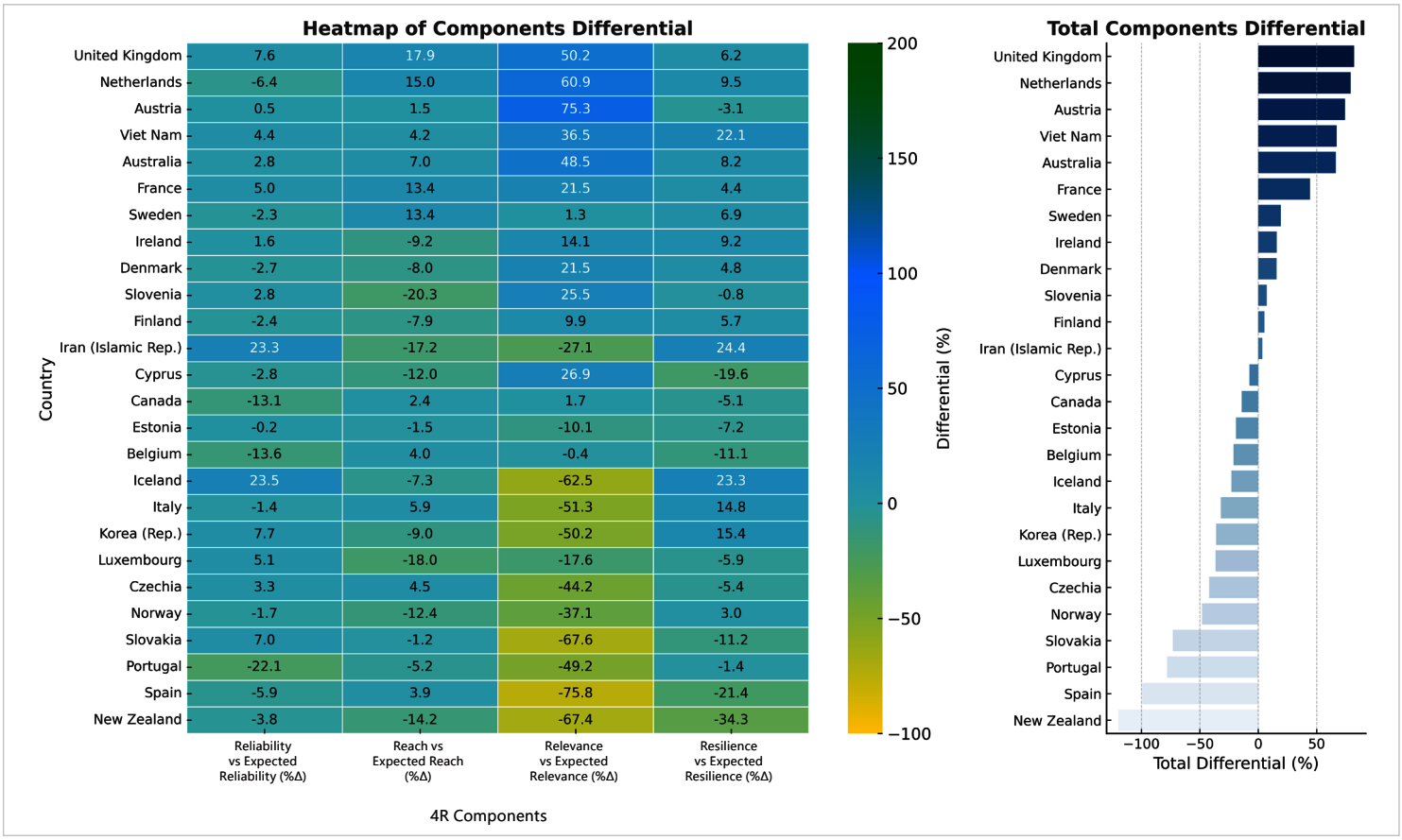


Figure 26: **2IPD 4R component differential heatmap – PDLs 5–8 (Part 1)**

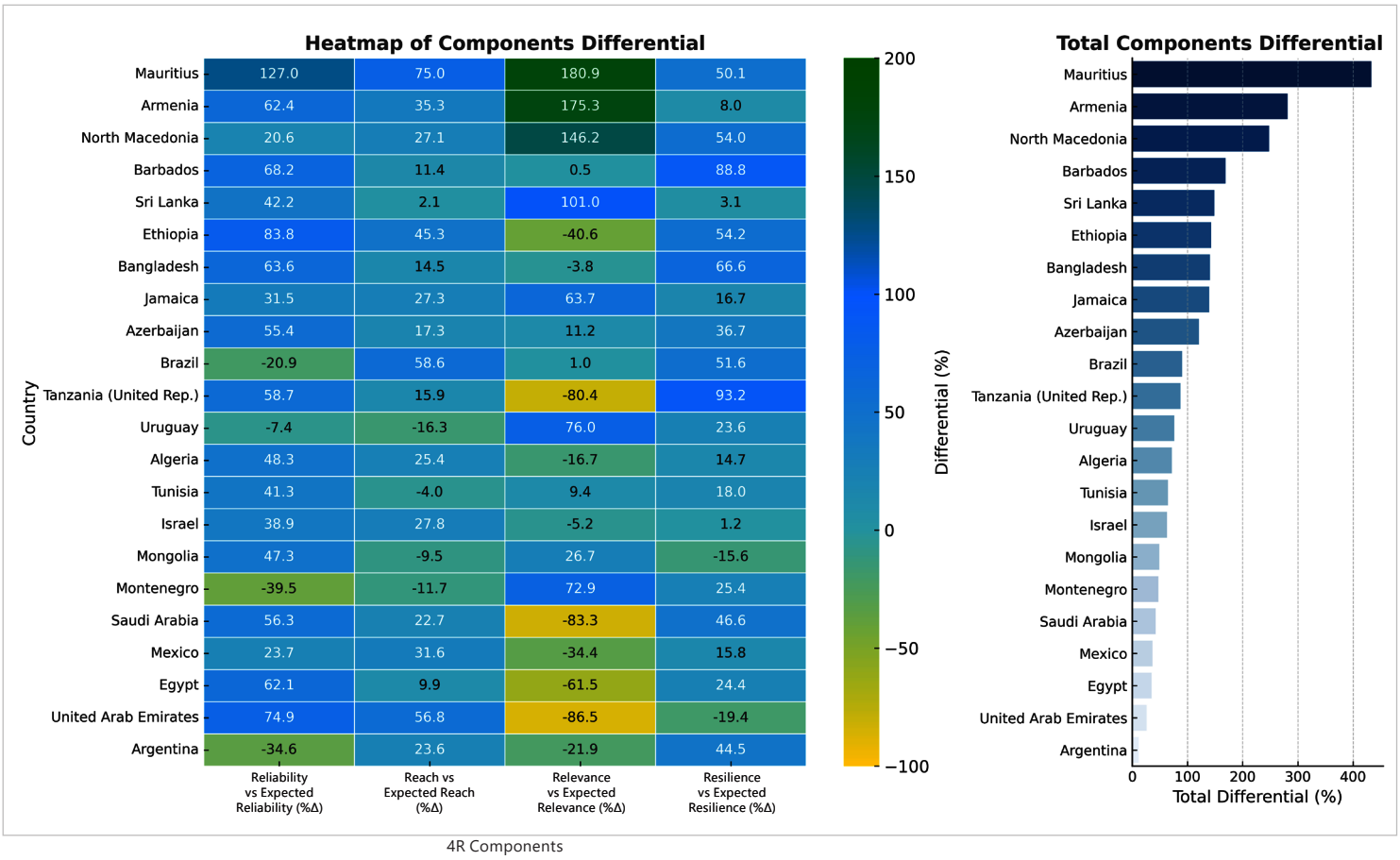


Figure 26: **2IPD 4R component differential heatmap – PDLs 5–8 (Part 2)**

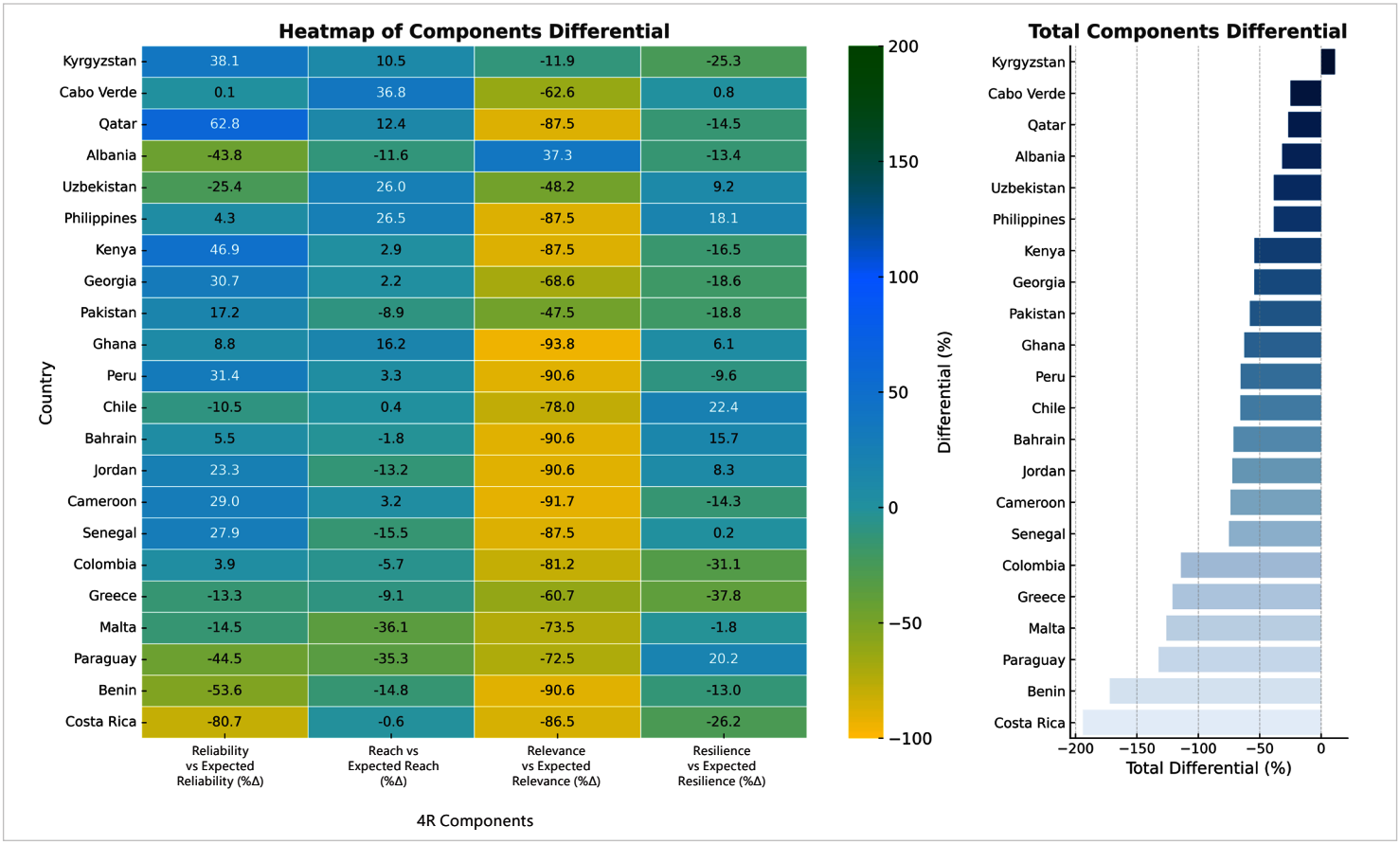


Figure 27: 2IPD 4R component differential heatmap – PDLs 3 and 4 (Part 1)

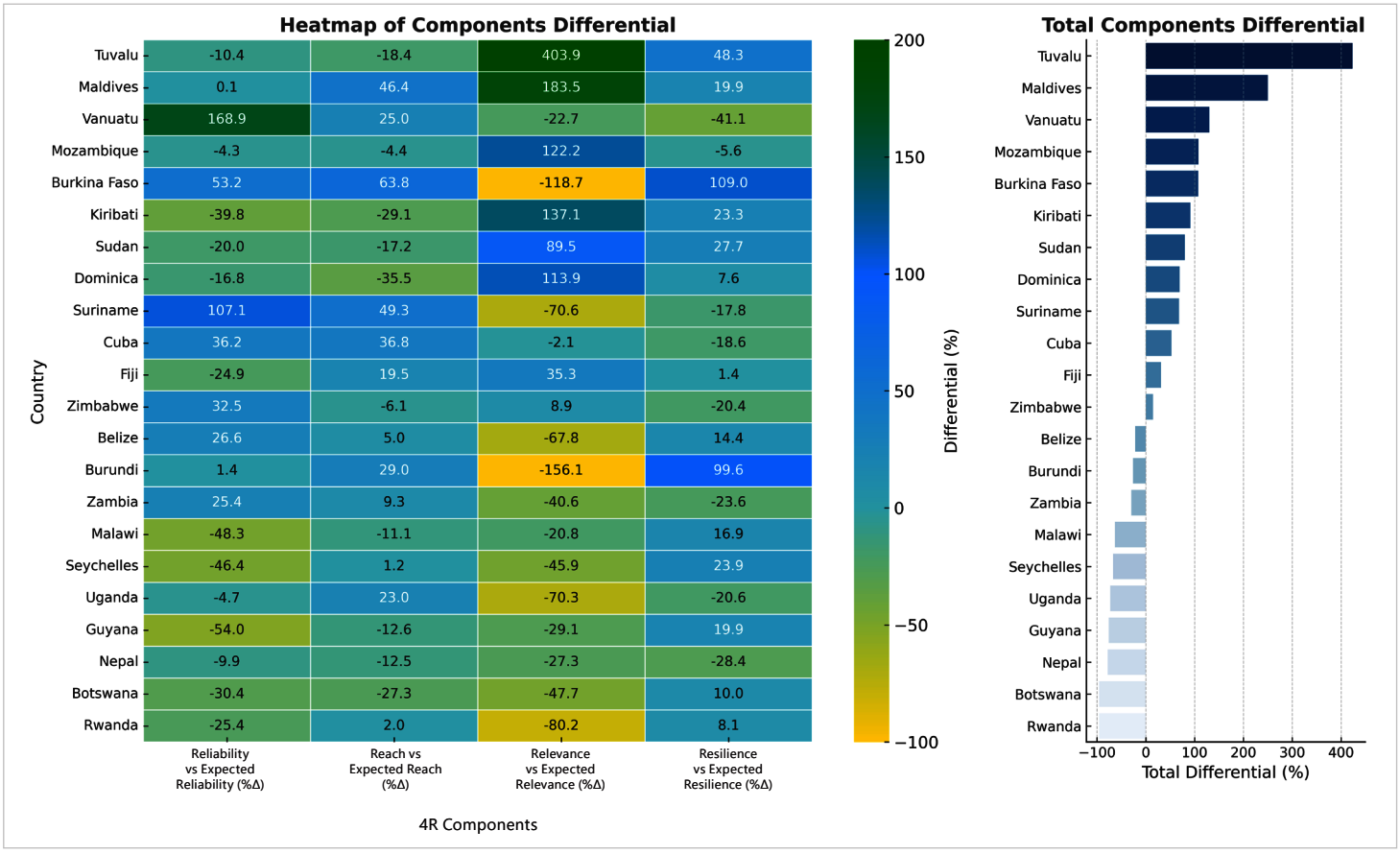


Figure 27: 2IPD 4R component differential heatmap – PDLs 3 and 4 (Part 2)

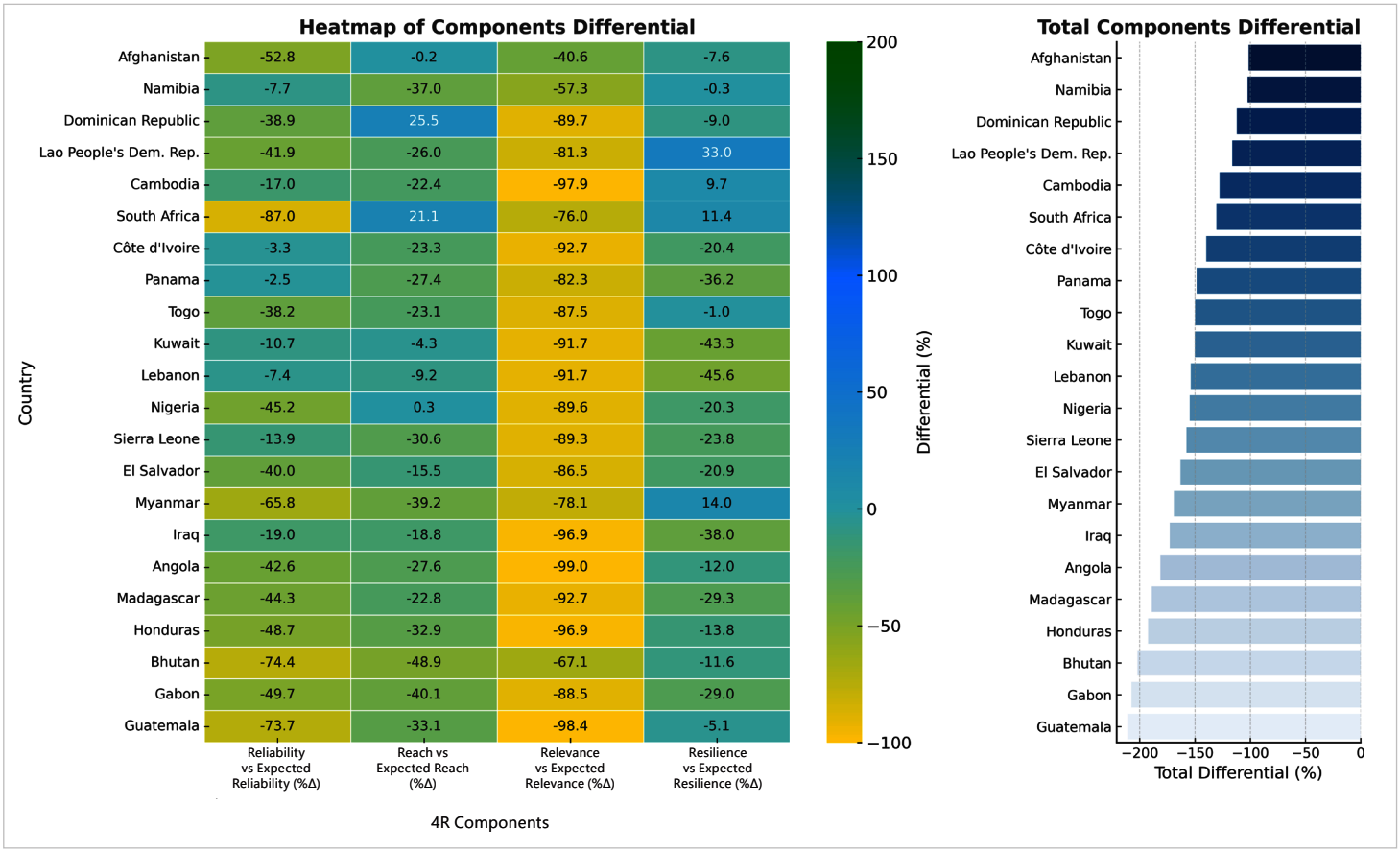


Figure 28: 2IPD 4R component differential heatmap – PDLs 1 and 2 (Part 1)

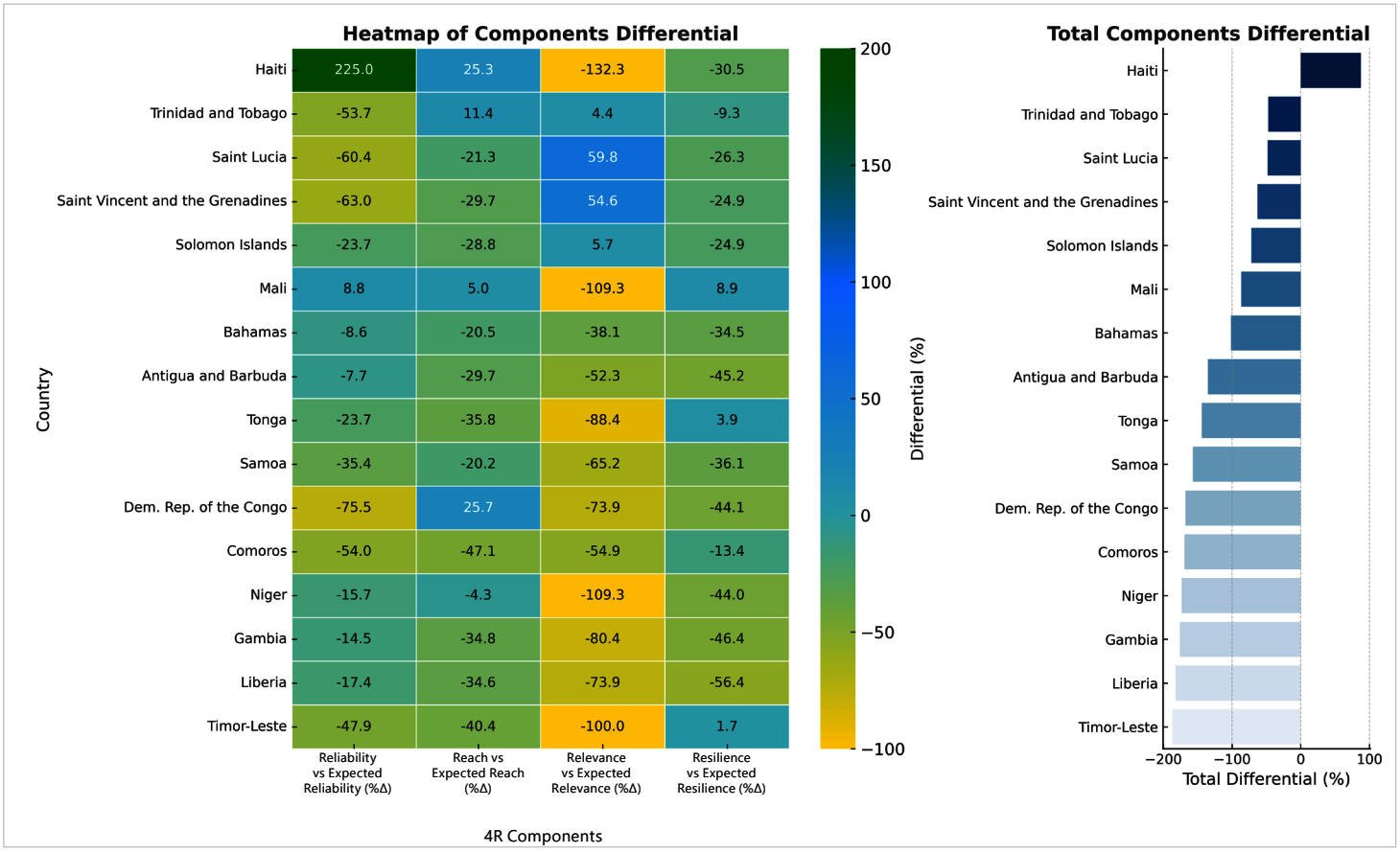
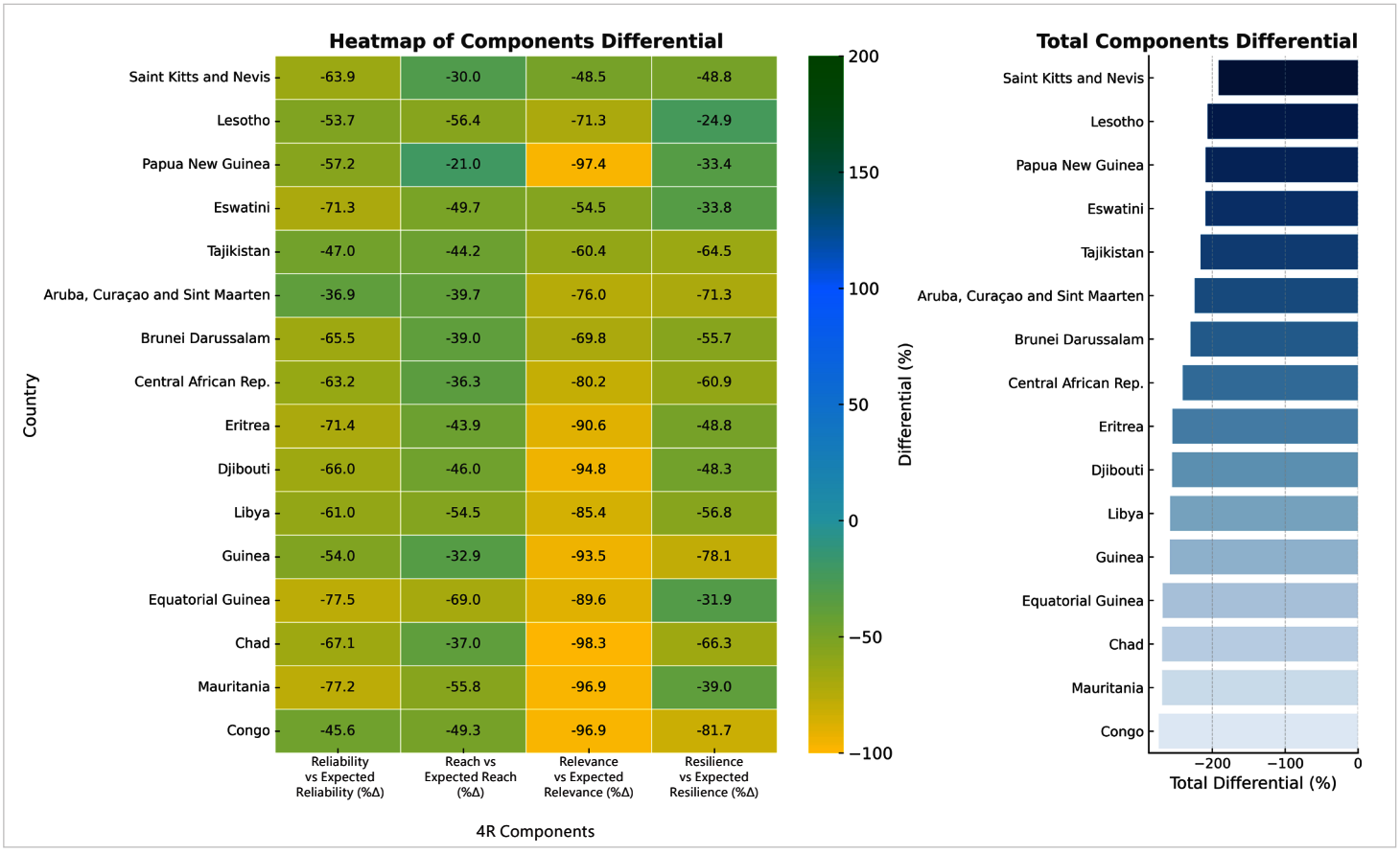


Figure 28: 2IPD 4R component differential heatmap – PDLs 1 and 2 (Part 2)



CONCLUSION

The State of the Postal Sector 2024 report has offered a comprehensive exploration of the evolution, current dynamics, and future trajectories of international postal services. Spanning 150 years of postal development, this report underscored the critical role that postal services have played in global communication, trade, and economic integration. As we move towards the future, the postal sector stands at a crossroads, faced with significant challenges, but also opportunities for reinvention and growth.

MAIN FINDINGS

A historical analysis from 1874–2024 revealed that the internationalization of postal services has consistently lagged behind broader trends in economic globalization. Despite the rapid growth of global trade, the interna¬tionalization rates of letter post and parcel post have steadily declined, particularly in the digital age.

Using a data-driven predictive mode, we forecast three potential scenarios for the future – Regression, Resilience, and Renaissance – each representing a different possible path for the international postal sector.

These scenarios range from a worst-case scenario of continued decline to a best-case scenario of reinvention and integration into the global digital economy. The need for innovation and adaptation is paramount, as the sector must navigate technological disruptions, regulatory challenges, and evolving consumer demands to remain relevant in the future.

Focusing on the here and now, the report introduced the 2024 edition of the Integrated Index for Postal Development (2IPD), which brought new methodologies offering a more nuanced evaluation of postal systems worldwide. The index highlighted significant disparities in postal development across regions, with industrial¬ized countries leading in reliability, reach, relevance and resilience. The concept of natural postal development was introduced, emphasizing the importance of aligning postal services with a country's geographic and eco¬nomic context.

Despite some advancements, many countries, particularly in developing regions, still face substantial gaps in achieving their full postal development potential.

Additionally, the revised methodology introduced a bonus system that rewards countries for high-quality postal statistics and efforts towards decarbonization, reflecting the growing importance of sustainability in the sector.

Finally, the report employed a new analytic tool called the 2IPD 4R components differential as a metric for identifying and designing targeted policy and technical cooperation support for countries that are lagging behind their postal potential. In addition, top performers were identified which exceed the postal potential in their respective countries to deliver services that meet the needs of their governments, businesses and citizens.

KEY OVERALL RECOMMENDATIONS

The "State of the Postal Sector 2024" highlights an urgent need to shift the paradigm of postal development towards a framework that emphasizes ecosystemic growth. This approach recognizes the complex interplay of diverse actors, business models, and technologies within the broader logistics sector. Rather than focusing on individual postal operations in isolation, stakeholders must prioritize the health, connectivity, and resilience of the entire value chain to ensure the sector's continued relevance in a rapidly evolving global landscape.

Prioritize Ecosystemic Growth Through Collaboration and Coordination

The postal sector must embrace hyper-collaboration and enhanced international policy coordination as cornerstones for future development. The rationale for this recommendation lies in the growing need to address challenges that transcend borders, including

fragmented logistics networks, misaligned regulations, and sustainability imperatives. A focus on the broader logistics ecosystem, rather than isolated postal chains, is critical. By fostering stronger synergies across governments, postal operators, private sector players, and international organizations, stakeholders can unlock the efficiencies and innovations needed to support seamless cross-border trade and communication.

Embrace Innovation to Reinforce Ecosystem Strength

Technological advancements such as automation, artificial intelligence, blockchain, and advanced data analytics should be strategically leveraged to strengthen the entire logistics value chain. These tools will enable the postal sector to enhance its core capabilities—improving delivery speed, reliability, and predictability—while also supporting dynamic business models that address evolving customer needs. Building resilience within the ecosystem will also require operators to integrate digital and physical innovations across all touchpoints of the supply chain.

Strengthen Global Regulatory Frameworks and Operational Interoperability

Harmonized international standards and regulatory frameworks are essential for creating a cohesive and efficient postal ecosystem. The UPU must lead efforts to ensure that international policy coordination addresses critical challenges, including customs processes, data sharing, and operational interoperability. A robust and interconnected logistics system benefits not only individual postal operators but also global trade and economic development at large.

Drive Sustainable and Inclusive Development

Sustainability must become a central tenet of postal strategies moving forward. Postal operators and stakeholders should invest in green technologies, adopt sustainable practices, and contribute to broader decarbonization goals. Furthermore, targeted investments in infrastructure and capacity building, particularly in underserved regions such as Africa, Latin America, and the Caribbean, are essential to bridge existing gaps in service accessibility and reliability. These efforts should be designed with a clear focus on integrating postal services into local economic and social ecosystems to promote inclusive growth.

Leverage Data for Strategic Ecosystem Optimization

High-quality postal data is a critical enabler of ecosystemic growth. Stakeholders must invest in comprehensive data collection and analytics to drive strategic decision-making, identify bottlenecks, and optimize the entire value chain. The introduction of innovative tools such as the 2IPD 4R components differential provides a blueprint for identifying areas where targeted support can unlock greater ecosystem performance.

Foster Resilience in the Face of Emerging Challenges

The postal sector must position itself as a resilient player within the broader logistics ecosystem. By building operational flexibility, diversifying revenue streams, and ensuring alignment with broader trends in global commerce, the sector can adapt to disruptions and seize new opportunities in the digital economy. Investments in ecosystem resilience will enable the sector to weather shocks while maintaining its role as a critical enabler of trade and communication.

The postal sector is at a pivotal moment in its evolution. Moving forward, the focus must shift from the performance of individual operators or chains to the overall health and strength of the logistics ecosystem. Through ecosystemic growth, driven by innovation, collaboration, and sustainability, the sector can redefine its role in a world that is increasingly interconnected and digital. By acting decisively, policymakers and stakeholders can ensure that postal services remain a vital pillar of global trade, communication, and economic development for generations to come.

APPENDICES

POSTAL DEVELOPMENT LEVELS

Table 1: **Postal Development Levels 8–10**

Country	PDL	2IPD sub-score				2IPD score before bonus	Bonus	2IPD score after bonus
		Reliability	Reach	Relevance	Resilience			
Australia	10	92.9	90.7	100.0	93.1	96.5	4.0	100.5
Austria	9	90.9	86.1	100.0	83.4	91.7	4.9	96.6
Belarus	8	96.1	71.2	37.4	63.8	64.4	3.0	67.4
Belgium	9	78.1	88.2	56.8	76.5	73.6	7.0	80.6
Bosnia and Herzegovina	8	47.5	58.3	36.4	93.4	54.6	13.0	67.6
Bulgaria	8	78.6	80.0	52.4	58.0	64.5	7.0	71.5
Canada	9	90.2	94.0	65.3	93.3	86.5	5.0	91.5
China	9	76.9	96.8	100.0	91.6	93.1	3.0	96.1
Croatia	8	89.1	80.3	38.0	75.3	68.6	5.0	73.6
Cyprus	8	87.9	74.6	72.4	69.2	75.0	0.0	75.0
Czechia	8	93.4	88.6	35.6	81.4	73.4	3.0	76.4
Denmark	9	88.0	78.0	94.8	90.2	88.9	2.9	91.8
Estonia	9	90.2	83.5	62.5	79.9	78.6	10.0	88.6
Finland	9	88.2	78.1	62.7	91.0	79.7	8.5	88.2
France	10	94.9	96.2	69.3	89.9	88.7	13.0	101.7
Germany	10	93.1	99.3	100.0	91.2	98.6	10.0	108.6
Hungary	9	92.3	92.7	39.4	87.1	77.2	7.0	84.2
Iceland	8	87.6	59.3	20.7	85.5	59.8	7.0	66.8
India	8	77.3	96.9	19.8	93.3	70.0	3.0	73.0
Indonesia	8	68.3	75.1	31.5	93.1	64.2	2.4	66.6
Iran (Islamic Rep.)	8	67.2	51.7	78.6	90.7	70.2	3.0	73.2
Ireland	9	91.9	77.0	77.0	94.0	85.6	5.0	90.6
Italy	9	89.1	89.8	66.6	98.8	86.9	5.0	91.9
Japan	10	94.8	91.8	100.0	100.0	99.5	6.4	105.9
Kazakhstan	8	78.9	66.8	17.5	95.4	61.4	5.0	66.4
Korea (Rep.)	9	97.4	77.2	50.1	99.3	80.9	2.4	83.3
Latvia	8	99.4	90.1	36.8	64.7	71.1	3.0	74.1
Lithuania	9	88.4	81.8	55.5	78.4	75.0	7.0	82.0
Luxembourg	8	95.0	69.5	47.0	81.0	71.5	6.4	77.9
Malaysia	8	89.7	88.0	19.9	90.6	70.2	3.0	73.2
Moldova (Rep.)	8	98.2	61.6	42.5	72.0	66.1	3.0	69.1
Morocco	8	79.5	63.7	37.4	78.5	61.6	5.0	66.6
Netherlands	10	84.6	97.5	91.8	94.3	94.0	7.0	101.0
New Zealand	8	99.9	78.8	19.6	64.6	62.7	7.0	69.7
Norway	9	88.9	74.3	39.9	88.7	71.3	9.4	80.7
Poland	9	88.2	93.2	44.9	89.9	78.5	3.0	81.5
Portugal	8	70.4	80.4	30.6	84.9	63.7	6.4	70.1
Romania	8	88.6	75.3	40.5	62.2	63.8	5.0	68.8
Russian Federation	8	77.2	77.2	31.2	82.8	64.3	2.4	66.7
Serbia	8	84.9	75.0	33.1	92.7	69.5	4.0	73.5
Singapore	9	99.8	86.7	73.7	86.8	87.7	3.0	90.7

Country	PDL	2IPD sub-score				2IPD score before bonus	Bonus	2IPD score after bonus
		Reliability	Reach	Relevance	Resilience			
Slovakia	8	96.7	83.8	39.7	76.4	72.7	5.0	77.7
Slovenia	9	92.9	67.6	71.6	85.4	78.9	5.0	83.9
Spain	8	85.1	88.1	38.6	83.1	72.2	7.0	79.2
Sweden	9	88.3	96.2	62.3	92.0	85.3	10.9	96.2
Switzerland	10	97.2	94.6	100.0	91.8	98.6	10.0	108.6
Thailand	8	100.0	72.1	21.3	95.7	70.5	3.0	73.5
Türkiye	9	74.0	84.5	77.7	91.8	82.1	5.0	87.1
Ukraine	8	91.0	87.9	21.9	85.4	69.7	3.0	72.7
United Kingdom	9	97.3	100.0	85.7	91.4	95.9	4.0	99.9
United States of America	10	90.2	100.0	98.5	99.6	100.0	2.0	102.0
Viet Nam	8	91.2	65.1	50.8	89.0	72.6	3.0	75.6

Table 2: **Postal Development Levels 5–7**

Country	PDL	2IPD sub-score				2IPD score before bonus	Bonus	2IPD score after bonus
		Reliability	Reach	Relevance	Resilience			
Albania	5	42.3	55.2	27.3	63.1	40.4	5.0	45.4
Algeria	7	79.9	69.5	22.4	69.6	56.3	3.0	59.3
Argentina	6	35.2	68.5	20.7	87.7	47.6	4.4	52.0
Armenia	7	88.0	68.2	29.0	66.7	59.5	3.0	62.5
Azerbaijan	7	88.8	59.1	12.3	84.4	57.3	3.0	60.3
Bahrain	5	56.8	54.4	9.8	70.2	41.4	3.0	44.4
Bangladesh	6	72.0	54.8	4.8	91.8	51.0	3.0	54.0
Barbados	5	57.8	38.5	7.8	83.0	40.2	2.4	42.6
Benin	5	71.6	47.2	1.4	52.8	36.0	0.0	36.0
Brazil	7	42.6	87.9	20.4	92.0	56.8	5.0	61.8
Cameroon	5	85.1	57.2	1.6	52.0	42.8	3.0	45.8
Cabo Verde	5	72.0	47.3	3.1	44.3	34.2	3.0	37.2
Chile	6	60.2	62.7	20.2	89.2	53.7	2.0	55.7
Colombia	5	59.4	58.9	3.0	50.2	35.6	5.0	40.6
Costa Rica	5	10.4	55.1	12.5	94.0	35.7	5.0	40.7
Egypt	6	87.3	60.9	5.3	75.5	52.6	3.0	55.6
Ethiopia	6	74.6	52.0	5.2	67.8	43.9	3.0	46.9
Georgia	6	87.9	63.8	4.6	59.3	48.7	3.0	51.7
Ghana	6	95.2	64.4	1.5	64.4	51.6	3.0	54.6
Greece	7	78.4	77.1	22.4	53.5	53.3	3.0	56.3
Israel	6	74.8	70.8	9.1	61.4	48.8	3.0	51.8
Jamaica	5	68.6	44.0	16.0	51.3	38.0	0.0	38.0
Jordan	5	66.4	48.1	0.9	65.7	38.4	3.0	41.4
Kenya	5	79.1	57.0	1.2	50.7	40.5	0.0	40.5
Kyrgyzstan	5	76.6	55.7	9.1	46.1	40.3	3.0	43.3

Country	PDL	2IPD sub-score				2IPD score before bonus	Bonus	2IPD score after bonus
		Reliability	Reach	Relevance	Resilience			
Malta	7	77.3	54.2	15.1	84.5	53.3	3.0	56.3
Mauritius	7	78.0	60.5	27.7	66.0	53.6	3.0	56.6
Mexico	6	66.6	72.9	8.0	70.3	49.3	5.0	54.3
Mongolia	5	69.4	45.6	14.1	52.1	38.4	3.0	41.4
Montenegro	6	71.5	48.9	29.4	76.1	51.7	2.1	53.8
North Macedonia	7	82.6	55.1	21.3	76.3	54.5	5.0	59.5
Oman	6	100.0	80.8	0.5	38.5	49.9	0.0	49.9
Pakistan	6	78.8	56.9	13.0	59.2	46.4	0.0	46.4
Paraguay	5	56.0	40.4	8.2	87.6	41.7	3.0	44.7
Peru	6	88.4	64.5	3.2	65.9	50.6	3.0	53.6
Philippines	5	56.2	70.1	1.6	71.7	43.9	0.0	43.9
Qatar	6	87.7	62.3	1.8	51.9	45.2	3.5	48.7
Saudi Arabia	7	84.2	68.0	10.7	89.0	59.5	3.0	62.5
Senegal	5	68.9	46.8	0.7	60.8	37.3	2.0	39.3
Sri Lanka	6	82.3	56.6	23.0	62.6	51.3	3.0	54.3
Tanzania (United Rep.)	6	68.6	47.3	8.2	82.9	46.1	3.0	49.1
Tunisia	6	76.1	53.2	13.3	75.7	49.4	3.0	52.4
United Arab Emirates	6	94.2	86.9	1.4	48.9	53.4	2.1	55.5
Uruguay	5	49.9	46.4	17.5	75.0	40.7	5.0	45.7
Uzbekistan	6	81.0	63.5	5.5	67.4	49.2	3.0	52.2

Table 3: **Postal Development Levels 3 and 4**

Country	PDL	2IPD sub-score				2IPD score before bonus	Bonus	2IPD score after bonus
		Reliability	Reach	Relevance	Resilience			
Afghanistan	3	49.4	35.7	0.6	40.6	22.1	3.0	25.1
Angola	3	30.9	40.1	0.2	53.4	21.6	3.0	24.6
Belize	3	43.5	36.3	2.5	50.3	24.0	1.5	25.5
Bhutan	3	18.5	31.9	4.8	64.4	20.2	2.0	22.2
Botswana	3	28.4	31.5	3.1	54.5	19.5	5.0	24.5
Burkina Faso	4	27.3	47.1	1.3	66.4	26.8	5.0	31.8
Burundi	3	20.6	37.1	1.4	63.4	21.0	0.0	21.0
Cambodia	4	45.1	43.0	1.4	66.6	31.0	2.4	33.4
Côte d'Ivoire	4	52.1	42.5	1.2	48.3	27.4	3.0	30.4
Cuba	4	46.8	47.3	7.7	35.8	25.5	5.0	30.5
Dominica	3	28.6	22.3	16.6	47.3	18.7	2.4	21.1
Dominican Republic	3	21.0	43.4	0.8	40.0	15.9	3.5	19.4
El Salvador	4	33.0	46.8	2.2	48.0	23.2	3.0	26.2
Fiji	3	25.2	41.3	14.8	44.6	22.0	0.0	22.0
Gabon	3	27.1	33.2	1.1	43.1	15.6	3.0	18.6
Guatemala	3	17.7	41.8	0.2	69.2	22.9	0.0	22.9

Country	PDL	2IPD sub-score				2IPD score before bonus	Bonus	2IPD score after bonus
		Reliability	Reach	Relevance	Resilience			
Guyana	3	15.8	30.2	5.5	52.7	15.6	3.0	18.6
Honduras	4	34.5	41.9	0.4	62.8	26.1	1.8	27.9
Iraq	3	43.6	45.0	0.5	37.6	22.2	1.5	23.7
Kiribati	3	12.8	24.5	21.1	54.2	18.1	2.4	20.5
Kuwait	3	48.1	53.0	0.8	34.4	25.1	0.0	25.1
Lao People's Dem. Rep.	4	39.0	37.3	2.4	82.1	32.4	3.0	35.4
Lebanon	4	49.9	50.3	2.9	33.0	25.0	1.8	26.8
Madagascar	3	29.7	42.8	1.7	42.9	19.4	2.4	21.8
Malawi	3	16.7	31.8	1.0	51.4	14.6	5.0	19.6
Maldives	4	34.8	50.6	22.4	52.7	32.3	0.0	32.3
Mozambique	4	58.8	39.0	11.0	40.5	29.0	0.9	29.9
Myanmar	4	23.3	33.7	4.4	69.2	23.4	10.0	33.4
Namibia	4	49.7	34.9	4.7	60.5	29.1	1.5	30.6
Nepal	4	48.8	44.1	6.6	44.2	27.3	0.0	27.3
Nicaragua	3	15.0	28.7	7.2	62.9	18.4	2.4	20.8
Nigeria	4	29.5	55.6	1.2	48.4	24.7	3.0	27.7
Panama	4	52.5	40.2	2.0	38.7	24.3	3.0	27.3
Rwanda	3	22.0	36.5	4.2	47.5	17.3	3.0	20.3
Seychelles	3	20.7	35.0	5.6	54.5	19.0	1.8	20.8
Sierra Leone	3	37.9	33.2	0.6	42.0	18.4	0.0	18.4
South Africa	4	7.0	67.1	2.3	67.6	27.4	5.0	32.4
Sudan	3	22.1	33.8	3.6	54.8	18.6	0.0	18.6
Suriname	3	44.1	33.6	2.0	27.0	16.3	3.0	19.3
Togo	4	28.8	42.6	7.8	60.1	26.0	5.0	31.0
Tuvalu	4	30.8	28.2	39.1	65.2	33.1	1.5	34.6
Uganda	3	27.9	44.0	1.9	34.9	16.9	0.0	16.9
Vanuatu	4	65.8	43.2	6.1	25.9	26.5	3.0	29.5
Zambia	3	39.4	39.1	0.4	33.6	18.0	0.0	18.0
Zimbabwe	3	41.0	33.6	1.2	35.0	17.5	5.0	22.5

Table 4: **Postal Development Levels 1 and 2**

Country	PDL	2IPD sub-score				2IPD score before bonus	Bonus	2IPD score after bonus
		Reliability	Reach	Relevance	Resilience			
Antigua and Barbuda	2	31.7	24.3	3.7	24.1	9.5	0.0	9.5
Aruba, Curaçao and Sint Maarten	2	35.0	33.4	2.3	17.4	10.8	0.0	10.8
Bahamas	2	31.4	27.5	5.5	28.8	12.3	0.0	12.3
Brunei Darussalam	2	18.3	33.8	3.6	26.9	9.1	2.4	11.5
Central African Rep.	1	12.7	22.8	0.2	17.2	0.3	0.0	0.3
Chad	1	14.3	27.3	0.1	16.7	1.9	2.4	4.3
Comoros	2	19.2	18.3	4.1	38.1	8.3	3.0	11.3
Congo	1	29.3	28.1	0.4	11.1	5.1	0.0	5.1
Dem. Rep. of the Congo	2	7.5	51.3	0.6	24.0	9.3	3.0	12.3
Djibouti	2	19.1	29.9	0.5	31.4	8.6	2.4	11.0
Equatorial Guinea	2	18.0	17.2	1.1	41.3	7.7	1.8	9.5
Eritrea	2	16.3	31.1	0.9	31.1	8.2	0.0	8.2
Eswatini	2	11.4	21.8	3.1	32.8	5.1	3.0	8.1
Gambia	2	26.2	26.6	0.3	23.0	7.3	0.0	7.3
Guinea	1	14.9	27.4	0.1	9.4	0.0	0.0	0.0
Haiti	2	36.2	25.0	0.1	18.2	8.3	0.0	8.3
Lesotho	2	18.9	18.9	2.0	37.2	7.5	3.0	10.5
Liberia	1	16.8	26.7	0.2	18.7	3.2	0.0	3.2
Libya	2	21.0	25.2	1.5	26.2	6.6	0.0	6.6
Mali	2	16.2	30.2	0.2	34.6	8.8	2.4	11.2
Mauritania	2	12.8	24.5	0.4	37.0	6.8	0.0	6.8
Niger	1	14.4	27.5	0.2	17.8	2.4	0.0	2.4
Papua New Guinea	2	15.2	27.3	0.2	29.3	6.0	2.4	8.4
Saint Kitts and Nevis	1	12.7	24.2	4.0	22.5	3.5	0.0	3.5
Saint Lucia	2	14.2	27.2	12.4	32.4	10.2	0.0	10.2
Saint Vincent and the Grenadines	2	12.7	24.3	12.0	33.0	9.0	3.0	12.0
Samoa	2	41.2	27.6	1.5	28.1	13.8	0.0	13.8
Solomon Islands	2	25.8	24.6	8.4	33.0	11.9	0.0	11.9
Tajikistan	2	29.5	28.1	3.7	21.9	9.3	0.0	9.3
Timor-Leste	2	10.8	20.6	0.0	44.7	7.2	0.0	7.2
Tonga	2	11.6	22.2	1.0	45.7	8.5	0.0	8.5
Trinidad and Tobago	2	15.9	38.5	6.7	39.9	14.6	0.0	14.6

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