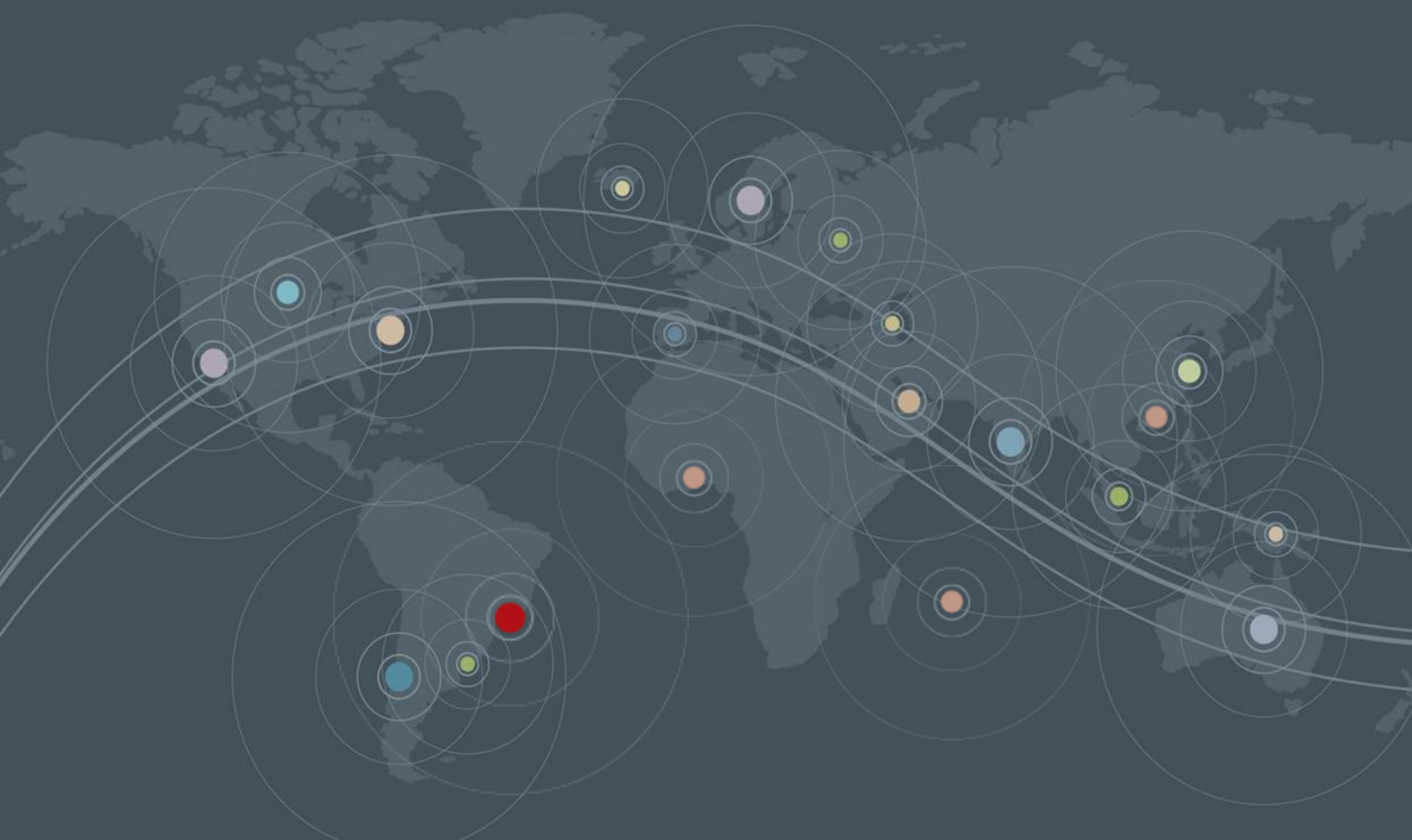


Production Infrastructure and Capacity Audit (PICA) for Greater São Paulo

Final Report by Olsberg•SPI for
Spicine



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OLSBERG•SPI

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1. EXECUTIVE SUMMARY

1.1. Context and Objectives of the Study

Context of the Study

In recent years, governments around the world have paid particular attention to the audiovisual content production sector¹ as a key driver for economic growth. This is because of two distinct factors:

1. The intensifying global consumer demand and access to audiovisual content from Video on Demand (VOD) streamers and traditional studios, and
2. Government recognition that audiovisual content production plays a unique role in delivering economic value, through large sums being rapidly spent within a location and then spreading throughout an economy via the large numbers of cast, crew and vendors employed in the production.

Globally, investment in audiovisual content production has been at unprecedented levels, with a deluge of production being undertaken worldwide, peaking in 2019 at US\$177 billion². While COVID-19 related disruption impacted audiovisual content production globally, we're already seeing a bounce back to the same or higher levels than 2019 figures.

SPI currently anticipate, as of 2022, a continued industrial growth of at least 5-10% per annum over a five-year period, in different countries. This growth is largely stimulated by major Hollywood studios' and streamers' ambitious investment strategies, based on their rapidly expanding business models underpinned by expanding consumer appetite, the growing availability of fast broadband systems globally, and a worldwide growth in disposable income combined with the affordable subscription pricing adopted by streaming services.

In Latin America, an estimated \$5.7 billion were invested in audiovisual content production throughout 2019, creating over 1.6 million direct and indirect jobs³. Of total investment, around \$1.6 billion in production spend originated outside of Latin America⁴. The demand for audiovisual content steadily increased throughout the pandemic, driving investments by streaming services into the region⁵.

As the largest Portuguese-speaking country in the world, Brazil is in a unique position to take advantage of the global audiovisual content production deluge. The country's vast domestic market of at least 210 million inhabitants quickly adhered to the streaming service model. Growing demand from the population for audiovisual content, reflective of global trends, has contributed to increasing levels of production spend by international streaming companies in the country.

For example, in 2020, Netflix announced it would invest R\$350 million into Brazil⁶ and, according to an announcement in a major industry event on 23rd November 2021, Netflix has

¹ Primarily feature films, scripted television and documentaries

² *Global Screen Production – The Impact of Film and Television Production on Economic Recovery from COVID-19*. Olsberg SPI, 25th June 2020. Accessible at: <https://www.o-spi.co.uk/wp-content/uploads/2020/06/Global-Screen-Production-and-COVID-19-Economic-Recovery-Final-2020-06-25.pdf>

³ *Behind the Camera: Creativity and Investment for Latin America and the Caribbean*. IDB. Accessible at: <https://publications.iadb.org/publications/english/document/Behind-the-Camera-Creativity-and-Investment-for-Latin-America-and-the-Caribbean-Learnings-from-Conversations-with-Key-Players-in-the-Audiovisual-Sector.pdf>.

⁴ Global Screen Production – The Impact of Film and Television Production on Economic Recovery from COVID-19.

⁵ Ibid.

⁶ *Netflix plans to invest about USD 87 million in Brazilian productions in 2020*. Nextv News Internacional, 30th October, 2019. Accessible at: <https://nextvnews.com/netflix-plans-to-invest-about-usd-87-million-in-brazilian-productions-in-2020/>

confirmed its commitment to production in Brazil in 2022 with a plan to invest in the development of 40 new titles in a variety of formats including feature films, series, documentaries, and reality shows. The investment in Brazil will be through creation, production and post-production and will expand to all regions of the country.

Also in 2021, Amazon announced it would produce a minimum of three original series in Brazil⁷, and Bruno Bluwol, Head of Film Production at The Walt Disney Company Brazil, described 2020-21 as the “biggest year for new projects and contracts in Brazil”⁸. That commitment is in line with the recent announcement that The Walt Disney Company plans to increase its overall spending on content to US\$33 billion for its fiscal year of 2022, an uptick of approximately US\$8 billion to the company’s fiscal 2021 spending⁹.

Although this is creating new opportunities, both mature and emerging markets face capacity challenges within this global production context. Producers around the world face challenges to meet ambitious output targets due to a general shortage of dedicated shooting spaces such as sound stages, as well as the curtailed availability of key workers and skills gaps amongst below-the-line (BTL) crew.

For a national audiovisual content production sector to expand over the long-term with sufficient infrastructure and workforce development taking place and increased positive impact from international projects, effective public policies based on long-term strategies are necessary to address capacity challenges. The likelihood of capacity constraints in terms of either infrastructure or workforce must be consistently assessed. While the economic benefits of attracting more and larger international productions are highly desirable, within a context of capacity constraint there is a risk of cost inflation affecting local productions more adversely.

Additionally, when production levels and spend in a territory are not competitive in a manner that reflects the global context of production deluge, there is a risk of the most competent local professionals migrating to other markets for better employment opportunities. This loss of talent limits a local film industry’s potential.

This trend is an additional motive for preparing BTL training programs which will produce qualified professionals to meet the demand of both international and national productions.

São Paulo’s Position in the Global Market and within Latin America

Against this background, Brazil has a long tradition of audiovisual content production and well-known studios such as Cinedia, Atlântida Cinematográfica, and Vera Cruz. São Paulo offers certain unique features as Brazil’s vibrant financial centre, as one of the world’s most populous cities, and a cosmopolitan melting pot of nationalities, as well as the largest economy by GDP in Latin America.

However, the forementioned globalisation of audiovisual content production and the emergence of new markets and technologies has left the Brazilian audiovisual content production sector outdated. While São Paulo has overtaken Rio de Janeiro as the country’s leading production centre, it is lacking in basic elements to become a global production hub with modern, integrated infrastructure and workforce. São Paulo has failed to modernise and

⁷ Amazon Prime Video announces original Brazilian series. Olhar Digital, 2nd March, 2021. Accessible at: <https://olhardigital.com.br/en/2021/03/02/cinema-and-streaming/amazon-prime-video-announces-original-brazilian-series/>

⁸ Creative Film Finance Forum, roundtable: produção de conteúdo original. YouTube, 6th April 2021. Accessible at: <https://www.youtube.com/watch?v=ZvEizLuELi8>

⁹ Disney plans to spend \$33 billion on content in 2022. Señal News, 25th November 2021. Accessible at: <https://senalnews.com/en/content/disney-plans-to-spend-33-billion-on-content-in-2022>

expand its infrastructure to keep pace with the rapid worldwide growth in demand for production capacity, in terms of both studio space and skilled workforce availability.

In research conducted for the Inter-American Development Bank (IDB) and Netflix¹⁰, Olsberg•SPI recently found that professionals working in Latin America generally consider that there are not enough technical personnel to meet demands of both national and international screen production. The standard of training was reported to be insufficient for current demand levels and so, it was determined that there is an urgency within the region to bring skills in line with global standards of quality.

Key Objectives of the Study

Spicine – the City of São Paulo's Film and Audiovisual Company, responsible for the development, financing and implementation of programmes and policies for cinema, TV, games, and new media sectors – recognised not only the opportunity to increase Greater São Paulo's share of the global audiovisual content production deluge, but also the capacity challenges in both fully crewing certain projects and in finding suitable dedicated shooting space for them.

To this end, in May 2021 Spicine commissioned international creative industries consultancy Olsberg•SPI ("SPI") to undertake a robust and well-evidenced assessment of Greater São Paulo's capacity to support increased levels of national and international screen production. The objective of this assessment is to identify and implement strategic responses to overcome any gaps, so that value is maximised, and productions are not lost to competitors.

The findings and recommendations from the study will inform Spicine's policies to enhance the competitiveness of Greater São Paulo within the specific regional context of Latin America and globally.

1.2. The Production Infrastructure and Capacity Audit (PICA)

1.2.1. Overview of Three Areas of Focus

To assess the competitiveness of the Greater São Paulo within the global market, Spicine commissioned a robust and well-evidenced assessment of São Paulo's capacity to support increased levels of international audiovisual content production. The focus of the Study was in three areas:

1. **Physical production infrastructure**, including sound stages, production and post-production facilities and equipment
2. **Below the line** ("BTL") workforce capacity
3. **Skills gaps** found in the current screen workforce.

Greater São Paulo within this study is defined by the following six municipalities:

1. Barueri
2. Carapicuíba
3. Cotia
4. Osasco
5. São Bernardo do Campo
6. City of São Paulo.

The geographical scope of the study was determined based on Spicine's indication of existing notable infrastructure within each of the six municipalities.

¹⁰ Behind the Camera: Creativity and Investment for Latin America and the Caribbean

1.2.2. Approach

For their assessment, SPI utilised a wide range of primary and secondary research techniques. This included a survey of 113 filmmakers working across Greater São Paulo¹¹, 20+ confidential consultations with international and local filmmakers and public officials, as well as a review of existing reports and datasets on the region's audiovisual content production sector. Findings from across these sources determined the current spare capacity gauges of each element.

The vast majority of survey responses (92%) were based within the City of São Paulo, which represents the main hub of activity across Greater São Paulo. The consultees were more equally spread across Greater São Paulo.

1.3. Spcine

[Spcine](#) is responsible for the development, financing and implementation of programmes and policies for cinema, TV, games, and new media sectors across the City of São Paulo.

The company's main objective is to recognise and foster the economic and creative potential of the city's audiovisual industry and its impact in a cultural and social context. Spcine is an initiative of the City of São Paulo through the Municipal Secretariat of Culture.

Spcine also manages the São Paulo's Film Commission (SPFilm), which has provided support for over 5,000 audiovisual projects since 2016. This work has generated a direct economic impact of over R\$ 2.10 billion and created more than 100,000 jobs. For every R\$ invested through the SPFilm, a Return on Investment (RoI) of R\$ 1.124 is generated for the City of São Paulo.

In terms of economic development, for every R\$ 1 invested through Spcine programmes, more than R\$ 20 are generated by the São Paulo audiovisual sector and at least R\$ 1.10 are returned as public funds in the form of direct taxes. The São Paulo audiovisual sector generates an annual direct impact of over R\$ 6 billion, and an indirect impact of R\$ 5 billion.

The Spcine Exhibition Circuit also maintains 20 screens throughout the city to promote the audiovisual sector. These screens have attracted over 1.7 million spectators without charge, or at a symbolic cost, and form the largest network of public screens in Brazil. Additionally, the Spcine Play streaming platform is also the first public streaming platform in Brazil.

Spcine sponsors various events on an annual basis, including festivals, screenings, conferences and markets. Internationally, Spcine has expanded its participation into international events and markets.

In July 2021, Spcine launched Brazil's first and only **Cash Rebate** for audiovisual content.

Open to feature films in fiction or animation and TV series in fiction, animation or reality genres, São Paulo's cash rebates range from 20% to 30% for eligible expenses. The programme is broken down into five modules for projects shot in São Paulo: international films and series; Brazilian productions with strong international potential; advertising campaigns; screenplays that include São Paulo in the narrative but not necessarily shooting in the city; and an incentive for location managers to explore the city. The first three of these modules require a minimum spend of 2 million reais (US\$400,000). The annual budget for the first version of the cash rebate is 8.5 million reais (US\$1.5m), with no cap for international productions, and it is expected to be increased in subsequent versions.

The programme is also making a pioneering push for sustainability and inclusivity, using carbon credits to mitigate the CO₂ emissions produced by each project, as well as incentivising the

¹¹ Circulated to the members of key trade associations (BRAVI, APRO, SINDICINE and SIAESP) and Spcine Film Commission's mailing list.

hiring of women, transgender people, and those from Black and Indigenous backgrounds to key positions in a production, from directors to editors, art directors, DPs, actors and department heads.

All five modules are eligible to a 10% uplift. This can be obtained by including São Paulo in the screenplay, making use of its infrastructure (if at least 30% of its shooting days are in the city, for example) and hiring locals for prominent positions in the production.

While only recently being set up, this has real potential in attracting significant inward productions and investments, as well as supporting the development of an inclusive and sustainable audiovisual production sector regionally. However, a simultaneous investment in the region's production infrastructure capacity is also required to support these productions.

At the federal level, the absence of new lines for project development, the freezing of resources, dismantling of the cultural sector as a whole and censorship threats are some of the challenges that have been faced in recent years in federal audiovisual policies affecting the film industry, which have been highly debated in public in Congress in the Parliamentary Front in Defence of Cinema and the Audiovisual industry and Culture Committee of the Chamber of Deputies.

The political shift to the right in Brazil affected the national audiovisual industry in terms of repressing creativity, economic vitality and the dynamization of the workforce, all of which were aggravated by the consequences of the COVID-19 pandemic. Meanwhile, in the City of São Paulo, coherent public policies based on systematic planning, beginning in previous administrations, have emerged to counterbalance the negative national trends and demonstrate leadership in the democratization of access to audiovisual content, affirmative and inclusive policies, strengthening of co-productions, expansion of the municipal exhibition circuit, streamlining the film commission and creation of a cash rebate mechanism to promote national and international filming in the City.

1.4. Key Findings Across the Three PICA Elements

1.4.1. Strengths

- The new cash rebate announced by Spcine in July 2021 is Brazil's first and only incentive for audiovisual content production. Although the budget is relatively small, it has real potential in attracting significant inward productions and investments as well as supporting the development of an inclusive and sustainable audiovisual production sector regionally. However, a simultaneous investment in the region's production infrastructure and workforce capacity is also required to support these productions.
- An abundance of local Production Service Companies (PSCs) offers a significant competitive advantage for Greater São Paulo over other jurisdictions in Brazil and Latin America. They serve as effective brokers for inward productions on local laws, contacts, and dealing with authorities, as well as where to source experienced local crew, equipment, recommend locations and obtain competitive rates on accommodation and vehicles. However, the general lack of English-speaking crew and the continued perception of security issues are seen as negative hindering factors.
- The São Paulo Film Commission, as part of Spcine, is considered the most advanced in the country. In addition to offering a production guide in English, "Film in São Paulo"¹², a new streamlined online permitting system which allows producers to track permit

¹² Accessible at: <http://spcine.com.br/wp-content/uploads/Film-in-S%C3%A3o-Paulo-compactado.pdf>

requests in real time and concentrates all relevant documentation in a single location was recently announced. This ease of access promotes a positive film-friendly attitude.

- Specific roles and infrastructure identified in the survey as having notable or substantial immediate capacity available are: sound recording and dubbing facilities, production service companies, hotels, first assistant director, script supervisor, director of photography, production designer, art director, gaffer, camera operator, grip, location manager and sound designer. These are also seen as having relatively strong international fit (i.e., having experience and/or capabilities to work with inward productions).

1.4.2. Weaknesses

- Confidential consultations with stakeholders revealed a general consensus on a lack of qualified workforce and adequate infrastructure to meet current and future audio-visual production demand.
- Production is hindered by insufficient and inconsistent workforce training programmes in Greater São Paulo and restrictive policies that limit the ability of existing studios to expand and modernise their facilities.
- The BTL professionals who display a higher skill level do not have the capacity and/or availability to meet growing demand, a situation that has also made production in São Paulo more costly. Where skilled labour exists, the individuals are already occupied on (larger budget) projects, meaning other productions are employing relatively unskilled labour in key executive roles. This has had a direct effect on the quality and perceived professionalism of Greater São Paulo productions.
- The impact of digital technologies for virtual production and special effects are now common features of content produced by major studios, independents, and streaming services, and may be prerequisites for determining physical production decisions. Greater São Paulo isn't currently able to adequately serve this demand, scoring low on the current capacity and international fit of special effects coordinators and technicians. Investment in the necessary skilled crew, production facilities and equipment are needed.
- While there are production spaces in Greater São Paulo, there is currently a medium-to-low capacity in purpose built sound stages, with the spaces regularly booked out on long-term projects. This availability issue is compounded by the quality of facilities on offer. Without suitable technology and facilities, a lack of available world-class sound stages will act as a major constraint inhibiting Greater São Paulo's ability to capture the growth that is possible in this sector, especially for inward productions.
- Consultations show that training often happens on-the-job and recruiting for new talent into the industry often happens informally through family members training family members. This type of uncoordinated and unregulated training can lead to low level skill training, which can limit growth and potentially incur safety risks. Additionally, informal training pathways may pose a barrier towards achieving greater diversity within the audiovisual content production industry.
- Specific roles and infrastructure identified in the survey as medium-to-low availability are purpose built sound stages, virtual production facilities, special effects and specialist equipment, safety supervisors, camera equipment, greensperson, special effects coordinator, stunt coordinator and special effects makeup artist.
- There has been consistent feedback that it is too expensive to film in São Paulo. This factor, along with a perceived lack of security, a negative political image, bureaucracy, heavy import duties on equipment, tax burden on remittances, obsolete public policies at the federal, state, and municipal levels, and a lack of English fluency among BTL workforce has hindered Greater São Paulo's competitiveness within Latin America.

1.4.3. Overall Capacity Assessment

The abundance of qualified Production Service Companies (PSCs) in Greater São Paulo stands as a positive, attractive asset to effectively support and advocate for inward productions, as to compensate, at least in part, any prevailing views of the safety, cost, and accessibility for foreign production companies.

Greater São Paulo has overtaken Rio de Janeiro as the country's leading production centre due to various factors such as offering the highest concentration of qualified PSCs and serving as host to the leading production streaming platform, Netflix. In addition, the municipality of São Paulo is the capital of the surrounding state of São Paulo, which alone is wealthier than Argentina, Uruguay, Paraguay, and Bolivia combined¹³. With more than 46 million inhabitants in 2019, São Paulo is the most populous Brazilian state, and the most populous national subdivision in the Americas, which exerts strong international influences in commerce, finance, arts and entertainment for the entire country¹⁴. Nevertheless, it is lacking in basic elements to become a global production hub with modern, integrated infrastructure and workforce.

1.4.4. Recommendations on how to 'fix' above and to create opportunities

A Holistic Strategy

A successful long-term growth of the film sector requires assembling an interlinked set of policies and initiatives carefully designed to achieve sustainable growth and diversification. The film industry comprises a growing number of components, with complex relationships and elements. Any future policy will need to ensure that the whole of the sector succeeds in its objectives through an interlinked set of measures, referred to here as a "Holistic" strategy. In many jurisdictions federal authorities have developed and implemented strategies to ensure integrated public policies for the national audiovisual industry. In Brazil, however, due to a variety of reasons, there has been an absence of such policies at the federal level, which has negatively affected the entire industry. Meanwhile, through coherent public policies put into place by Spcine in the City of Sao Paulo, beginning with previous administrations, the City has resisted the decline of the industry at the national level. The general methodology and framework for building an integrated holistic strategy relies on four interrelated pillars which are critical for sectoral development: Incentives, Workforce Capacity, Physical Infrastructure and Film-friendliness.

- The first pillar has already been accomplished through the new pioneering Cash Rebate with its five modules and sophisticated criteria for sustainability and inclusion, it is not only a highly effective tool for building a healthy production sector but also a prerequisite to attract international investment and a world-class production studio and stands as Brazil's first and only international production incentive.
- The second pillar, Workforce Capacity, is a cornerstone of developing a healthy screen sector, in terms of both depth and quality. However, in Greater São Paulo the current workforce is close to or at full capacity and BTL training programs are required now to ensure that it is properly positioned to meet the production demands.
- The third pillar, Physical Infrastructure, is a key factor in the attractiveness of a market. However, there are serious concerns regarding both studio capacity and post-

¹³ *Super Estado? Pesquisa mostra que a cidade de São Paulo terá uma das maiores economias do mundo*. R7 Internacional, 12th October 2016. Accessible at: <https://noticias.r7.com/internacional/fotos/super-estado-pesquisa-mostra-que-a-cidade-de-sao-paulo-tera-uma-das-maiores-economias-do-mundo-12102016>

¹⁴ *A metrópole improvável: por que São Paulo virou a maior cidade do Brasil*. Exame, 25th January 2019. Accessible at: <https://exame.com/economia/a-metropole-improvavel-por-que-sao-paulo-virou-a-maior-cidade-do-brasil/>

production facilities in Greater São Paulo and will require planning and investment to ensure the progress and future of Greater São Paulo's audiovisual content production sector.

- The fourth pillar, Film-friendliness, has already been largely accomplished thanks to the well-structured and efficient São Paulo Film Commission, and its permitting system.

The comments below provide further insight into specific areas which require attention and offer opportunities for development.

Workforce Development

- While there is some available capacity amongst key creative talent, such as production designers and directors of photography, which is highly positive, these key roles will require upskilling, as well as formal training of skilled support staff for the design and shaping of productions that reflect and positively promote Greater São Paulo from an international perspective. Formal BTL training may be offered by existing organisations, such as SEBRAE, ABC Cursos de Cinema, Instituto Criar, LATC or others, or a special, bespoke programme be created by Spcine in partnership with those organisations to fill the need. These programs should address upskilling for existing professionals as well as internships for young professionals and/or film school graduates, and also incorporate diversity and inclusion criteria.
- COVID-19 restrictions have focused attention on production safety. If Greater São Paulo is going to safely support national and international productions, investment in safety supervisors is needed along with upgraded facilities and equipment.
- A comprehensive BTL training programme is required not only for upskilling existing professionals, but also to begin training new professionals to meet the demand for new production by streaming platforms.
- With the current expansion of the audiovisual content production sector, primarily attributed to the boom in demand by online platforms, specific roles are seeing growing demand and transformation in Greater São Paulo, especially in second semester 2021 as production emerges from the effects of the COVID-19 pandemic. BTL workforce is close or at full capacity in the majority of those roles and BTL training programs are required now to ensure that Greater São Paulo is properly positioned to meet the production demands.
- New workforce development programmes are required to promote training for both above-the-line and below-the-line careers. These programmes may be in the form of public-private partnerships or other formats, with participation of Spcine, which create pipelines for internships, shadowing with industry professionals and crew upskilling in production and post-production areas. In addition, targeted workforce development programs are needed in key areas such as special effects, stunts and production designer.

Infrastructure

- Studio capacity remains an ongoing concern for the future of Greater São Paulo's audiovisual content production sector. Alternative solutions to purpose-built stages have included the conversion, often temporarily, of existing large empty spaces, such as warehouses, which aren't fit for national or international productions. A combination of these factors points to the opportunity to develop a new, major studio facility, especially aligned with the launch of the new Cash Rebate. A specific feasibility study into a new high-spec studio would be appropriate at this time in order to take advantage of the Cash Rebate which will attract international production and generate a new pipeline of projects requiring studio facilities.

- Investment in location managers as well as the sponsorship of location tours for potential inward productions will enable the production sector to spread further across Greater São Paulo and generate wider economic and social impact to other parts of Greater São Paulo, rather than just in the municipality of São Paulo.
- Spcine should convene a working group. This working group will be tasked with addressing the capacity constraints identified in this study through the implementation of a strategic overarching framework, which supports growth by identifying targeted opportunities and potential partnerships to address shortcomings. This would likely entail the hiring of a capacity strategy executive, with knowledge of the audiovisual content production industry, education and government, to lead on initiatives such as championing a mechanism to facilitate the importation of affordable equipment.

International Image and marketing

- A holistic screen sector strategy takes into account both qualitative and quantitative data to identify key areas for intervention. Through consultations, sector stakeholder generally expressed that, in their view, there are limiting factors impacting their work in Greater São Paulo that need to be addressed through a combination of public policy and private initiative. These include: a perceived lack of security, a negative political image, bureaucracy, heavy import duties on equipment, tax burden on remittances, obsolete public policies at the federal, state and municipal levels, and a lack of English fluency among BTL workforce.
- In view of the comparative advantages that Greater São Paulo already offers, and the plans for investment in workforce and infrastructure that Spcine intends to undertake, it would be opportune to develop and implement a comprehensive marketing campaign for the international community aimed at engaging international players. Such a campaign would highlight the cash rebate, efficient film commission, desirable locations, qualified PSCs and other attractions. The campaign would focus on production communities in countries with bilateral co-production agreements with Brazil, as well as key production centres such as Los Angeles, London, Berlin and Beijing.

2. SPI'S SÃO PAULO PICA REPORT

2.1. Structure of the Report

The report is structured to look at the key PICA elements in turn. Section 3 explores key elements relating to production infrastructure and services (e.g., purpose built sound stages and camera equipment) and section 4 explores key elements relating to below-the-line (“BTL”) workforce capacity (e.g., Production Designer and Director of Photography).

In each case the element is assessed in two ways:

- **The current spare capacity** – the depth and availability of the element (e.g., crew role; purpose-built sound stages) in the Greater São Paulo region
- **International experience / fit** – how suitable this element is for international productions. For example, for crew, this would refer to whether they have past credits and experience working on international productions, whereas for an element like purpose-built sound stages it would refer to whether it can suitably support the needs and requirements of an international production.

When reporting on survey responses, stacked charts are used for selected elements (e.g., Figure 2) to illustrate the international fit of that element.

The current spare capacity is then summarised in a gauge (e.g., Figure 1) and given a score between 0, where there is no current capacity, and 10, where there is excess current capacity. This final gauge score brings together the quantitative survey responses and desk research with the qualitative insights from consultations with the industry and public officials.

The Appendix contains the gauges for the remaining PICA elements.

3. PRODUCTION INFRASTRUCTURE AND SERVICES

3.1. Production Facilities

3.1.1. Purpose Built Sound Stages

The availability of high-quality physical infrastructure, particularly studios and post-production facilities, is a key factor in the attractiveness of a market for audiovisual content production.

While there are production spaces in Greater São Paulo, there is currently a medium-to-low capacity in purpose built sound stages, with the spaces regularly booked out on long-term projects, and in the study’s survey, where half (48%) of respondents selected either ‘medium’ or ‘low’ when asked to rate the current capacity of Sao Paulo’s purpose-built sound stages.

Without suitable technology and facilities, a lack of available world-class sound stages will act as a major constraint inhibiting São Paulo’s ability to capture the growth that is possible in this sector, especially for inward productions. Over half (57%) of survey respondents reported that the current fit for international productions was ‘medium’ or ‘low’ (Figure 2). This was also expressed by one respondent during the consultations:

“Studios are an issue, especially if you need very large spaces, which allow the assembly of various scenarios and which still have good support and acoustic sealing.”

Based on the survey results, desk research into the count of sound stages available and consultations, the capacity gauge for purpose-built sound stages has been set at four, indicating little current capacity available (Figure 1).

Figure 1 Purpose Built Sound Stages Gauge Based on their Current Capacity

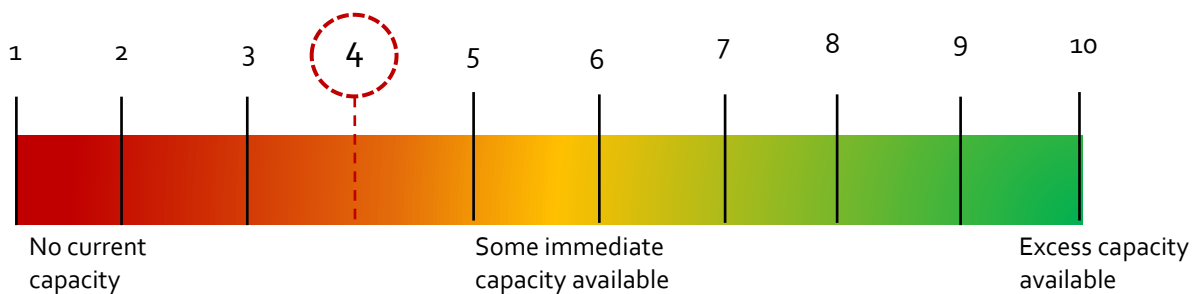
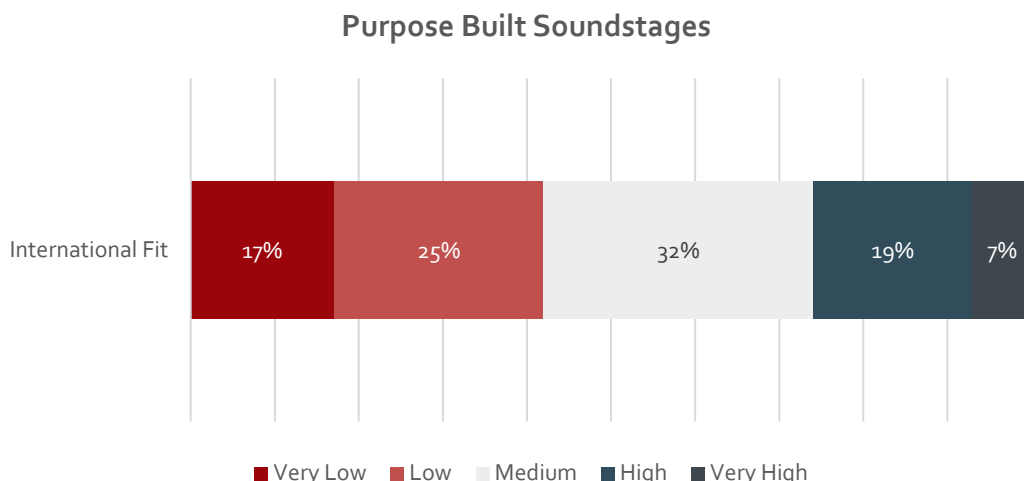


Figure 2 How do you Rate São Paulo’s Purpose-Built Sound Stages Based on their Fit for International Productions?



3.1.2. Sound Recording and Dubbing

Sound recording and dubbing facilities are essential services as part of the integrated post-production offer. They are among the services sought by both national and international producers for co-production, production service and other industry functions that include audio post-production, music mixing and mastering, reworking, and enhancing voice-based media, as well as basic dubbing services, if appropriate.

It should be noted that high quality, studio-grade audio equipment is normally required for professional sound recording with a sound reinforcement system setup, audio mixing, and studio music production by trained audio engineers. Importation of specialised equipment and specific training or upskilling will be required to meet future demands of international producers.

In the study’s survey, three-quarters (73%) of respondents selected either ‘medium’ or ‘high’ when asked to rate the current capacity of São Paulo’s sound recording and dubbing facilities, while 62% of survey respondents reporting that the current fit for international productions was medium or high (Figure 4). The lower rating for the fit for international productions reflects concerns about the demands from international producers for very high-quality sound recording and dubbing services, which implies the need for upgrading such services in Greater São Paulo to meet this demand.

Despite the relatively high score by survey respondents for sound recording and dubbing facilities, one respondent during the consultations affirmed:

“There is a lack of recording studios with international standards (noise level, acoustic quality and aggregated production infrastructure). There’s a lack of sound postproduction (three companies at global level).”

Based on the positive survey results, desk research and consultations, the current capacity gauge for sound recording and dubbing has been set at eight (Figure 3), indicating notable immediate capacity available.

Figure 3 Sound Recording and Dubbing Gauge Based on their Current Capacity

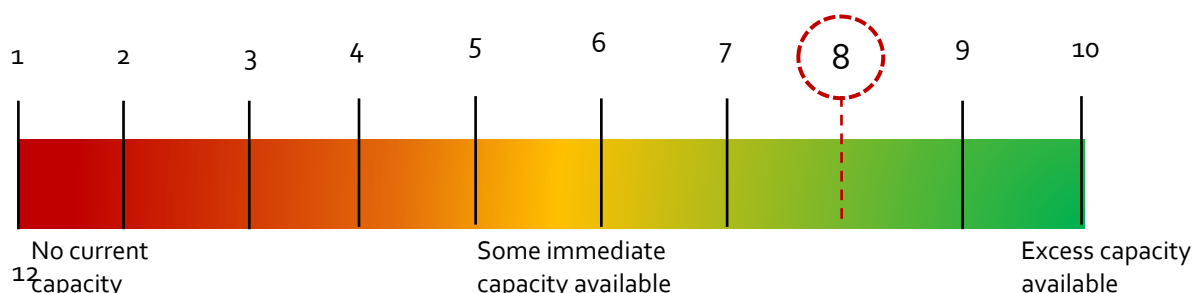
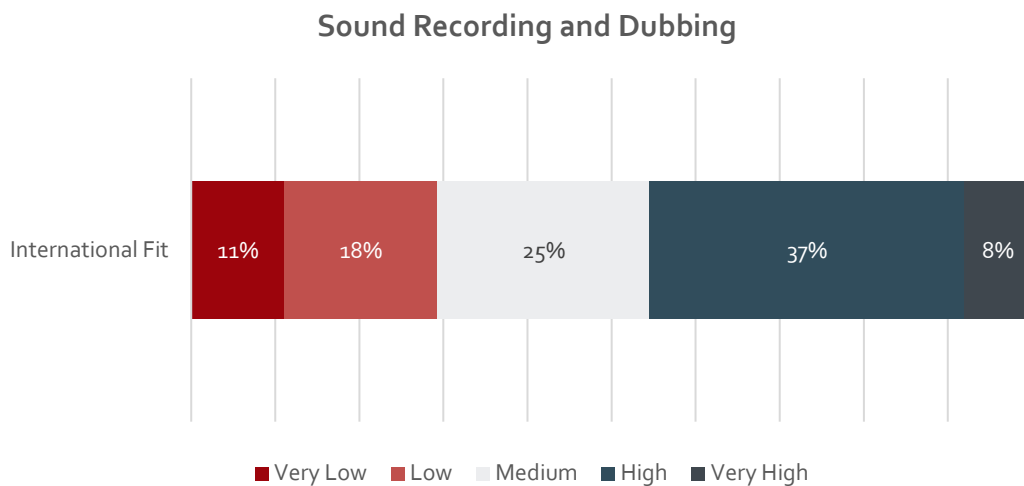


Figure 4 How do you Rate São Paulo’s Sound Recording and Dubbing Facilities Based on their Fit for International Productions?



3.1.3. Virtual Production Facilities

The COVID-19 pandemic has accelerated the technology-led transition towards virtual production in film and television, away from a traditional model where all or the vast majority of production is undertaken within one facility or location. During the COVID-19 pandemic when production shut down globally for several months, virtual production was identified as an increasingly viable alternative to traditional production. The trend of the roll-out of new virtual production technology was exemplified in *Lion King* (2019) and the *Star Wars* spin-off *The Mandalorian* (2019 to present). Along with the COVID-19 benefits, other benefits include a reduced environmental impact and the removal of geographical restrictions to talent.

The two prerequisites for including virtual production facilities production hubs are training and technology. Therefore, we already clear increased demand for new virtual production skills, specific provisions for training and/or upskilling will be required.

In terms of technology, there are four key areas in the virtual production pipeline: pre-visualisation and virtual scouting; building virtual production studios to include the likes of LED screens, camera encoding and motion capture; running virtual production stages; and creating the digital content to put onto the on-set LED walls. All these areas require use of state-of-the-

art technology and equipment which are likely needed to be imported given they are not readily available in Brazil.

In study's survey, three-quarters (75%) of respondents selected either 'medium' or 'high' when asked to rate the current capacity of São Paulo's virtual production facilities, while just over half (55%) of survey respondents reported that the current fit for international productions was 'low' or 'very low' (Figure 6). This reflects the perception by respondents that while current capacity may be adequate, if Greater São Paulo is to meet the demand for virtual production facilities from international producers, significant modernisation will be required.

Thus, to account for the consultees' perspectives, the capacity gauge has been set at four (Figure 5), indicating little current capacity available.

Figure 5 Virtual Production Facilities Gauge Based on their Current Capacity

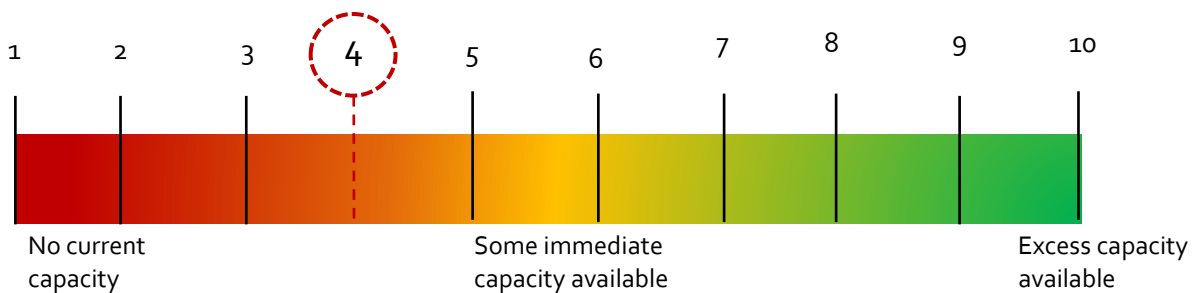
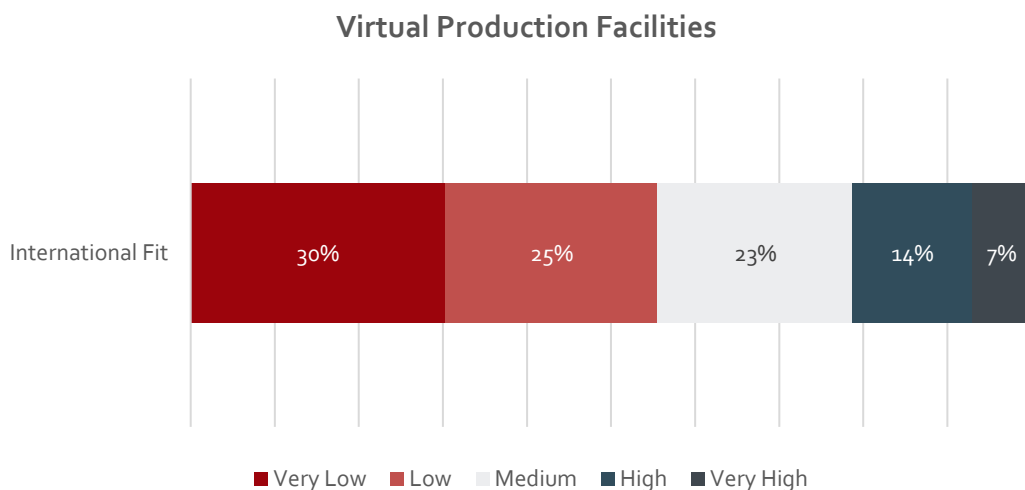


Figure 6 How do you Rate São Paulo's Virtual Production Facilities Based on their Fit for International Productions?



3.2. Production Equipment

3.2.1. Camera Equipment

Access to a variety of professional high-definition cameras and related accessories is a prerequisite for all existing and future audiovisual content production hubs. According to survey respondents, two-thirds (66%) of respondents selected either 'medium' or 'high' when

asked to rate the current capacity of São Paulo’s camera equipment, while, as shown in Figure 8, 57% of survey respondents reported that the current fit for international productions is ‘medium’ or ‘high’ (Figure 8).

Despite this relatively favourable rating for both current capacity and international fit, insights gathered during the consultations indicated a strong concern regarding camera equipment constraints, which was clearly expressed by one producer:

“In the current scenario with many projects going on at the same time, we have a shortage of filming equipment in general”

On a related note, during the consultations there were concerns expressed regarding availability and importation cost of equipment, with one producing reporting that there can be “100% importation fee for equipment”.

To account for the consultee’s perspective, the capacity gauge (Figure 7) has been set at three, indicating little current capacity available.

Figure 7 Camera Equipment Gauge Based on their Current Capacity

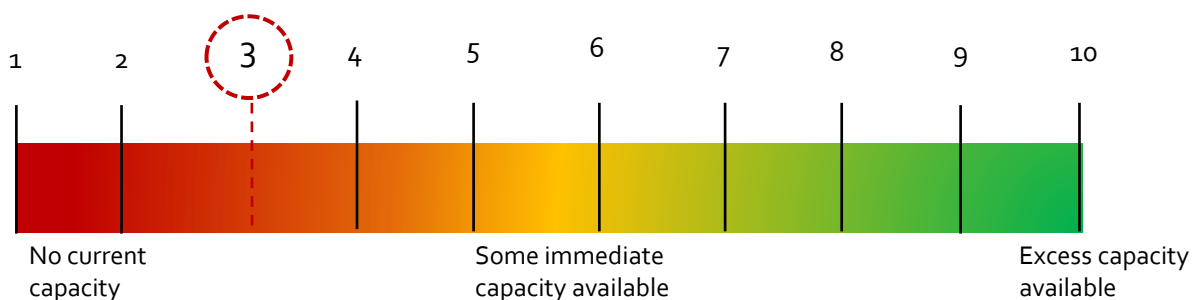
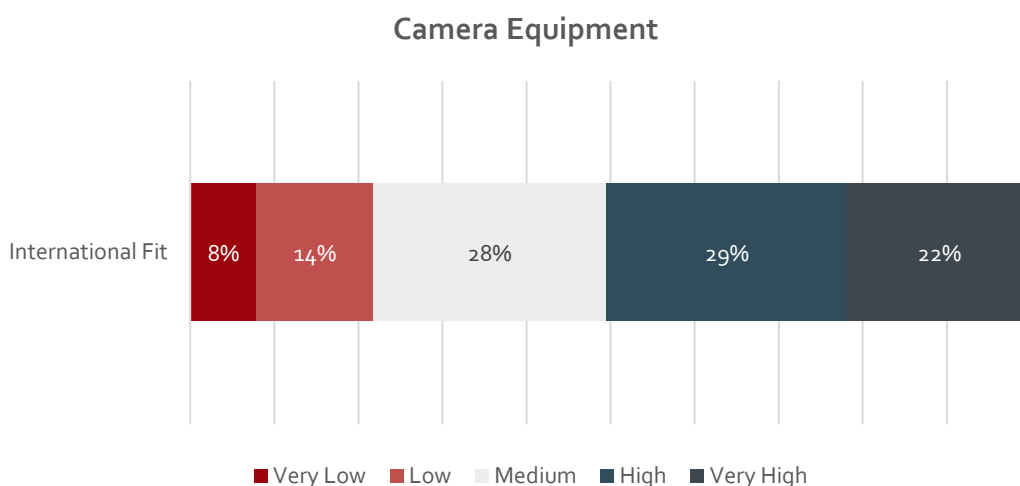


Figure 8 How do you Rate São Paulo’s Camera Equipment Based on their Fit for International Productions?



3.2.2. Grip and Electric

Grip gear or studio equipment, such as the flags, stands, modifiers and clamps are essential equipment for studio production to support the camera and lighting for the crew. Likewise

electric equipment, ranging from generators to dimmers must be modern and accessible for film sets.

According to survey respondents, two-thirds (67%) of respondents selected either 'medium' or 'high' when asked to rate the current capacity of São Paulo's grip and electric equipment. However, based on consultations there is concern about sufficient equipment to meet the demand of various simultaneous production in the São Paulo area. According to one producer:

"Making 4-5 series already takes up all workforce and equipment"

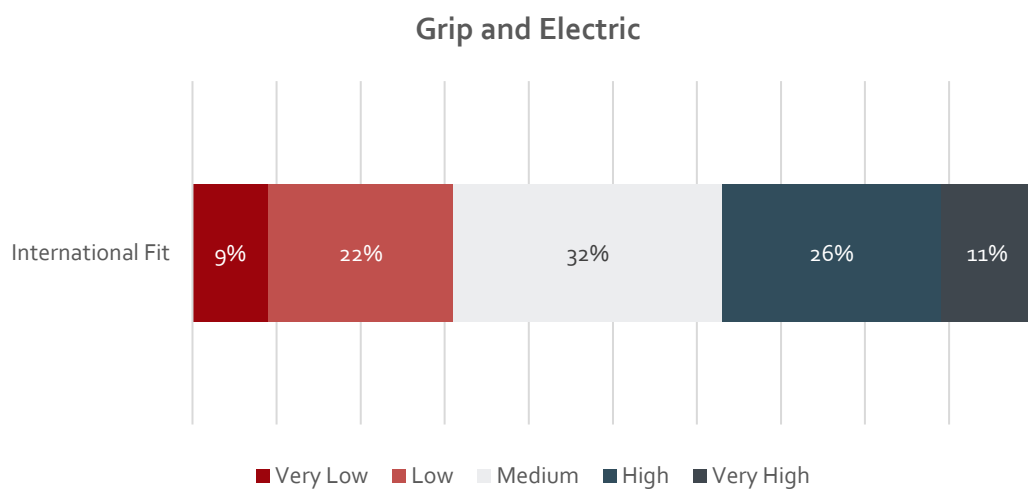
Regarding the current fit of grip and electric equipment infrastructure in São Paulo for international productions, just over half (54%) of survey respondents (Figure 10) indicated 'medium' or 'low' levels.

Based on the above survey results, desk research and consultations, the current capacity gauge has been set at six (Figure 9), indicating some immediate capacity available.

Figure 9 Grip and Electric Equipment Gauge Based on their Current Capacity



Figure 10 How do you Rate São Paulo's Grip and Electric Equipment Based on their Fit for International Productions?



3.2.3. Special Effects and Specialist Equipment

Special effects equipment includes a wide range of technical items, such as wind machines, motorised turntables, confetti cannons, smoke machines, CO₂ jets, and flame systems.

According to the publication by the Inter-American Development Bank¹⁵, special effects manager is ranked number one among the top ten below-the-line technical positions currently in high demand in Latin America and the Caribbean. In addition, that role is ranked number two in roles likely to be in higher demand in 2024. This is a clear indicator of the demand, not only for the position, but also for the equipment required to exercise this function.

According to survey results, two-thirds (67%) of respondents selected either 'medium' or 'low' when asked to rate the current capacity of Greater São Paulo's special effects and specialist equipment. This relatively low rating is partially attributed the fact that much specialised special effects equipment must be imported and Brazil's current importation process makes such importation extremely bureaucratic and expensive.

Two-thirds (65%) of survey respondents (Figure 12) reported that the current fit of special effects and specialist equipment for international productions is 'medium' or 'low', which is an important indicator given São Paulo's objective of attracting international productions in the future.

The current capacity gauge is set at four (Figure 11), indicating little current capacity available.

Figure 11 Special Effects and Specialist Equipment Gauge Based on their Current Capacity

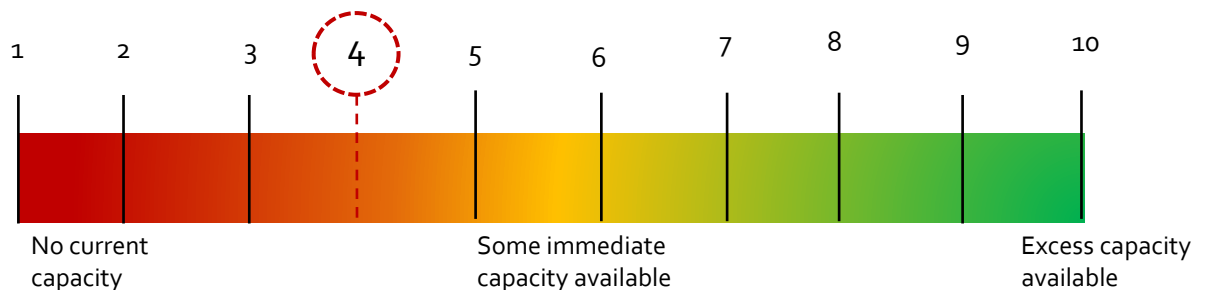
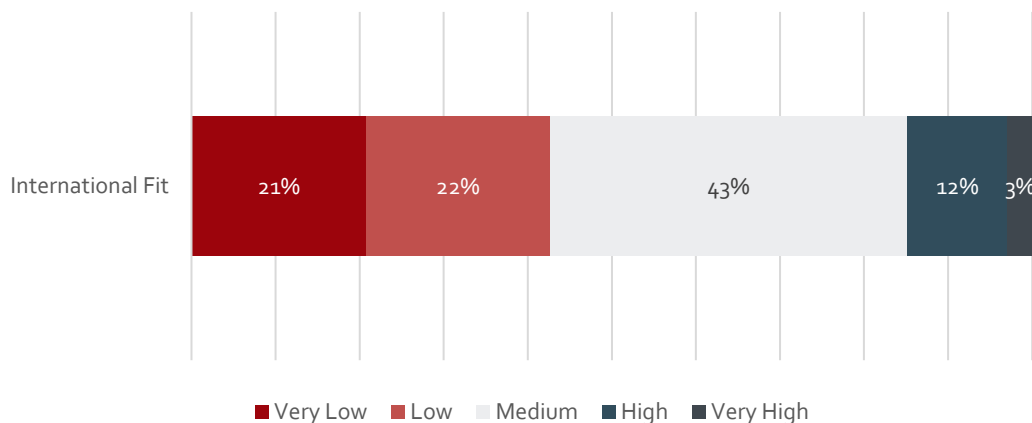


Figure 12 How do you Rate São Paulo's Special Effects and Specialist Equipment Based on their Fit for International Productions?

¹⁵ *Behind the Camera: Creativity and Investment for Latin America and the Caribbean*. IDB. Accessible at: <https://publications.iadb.org/publications/english/document/Behind-the-Camera-Creativity-and-Investment-for-Latin-America-and-the-Caribbean-Learnings-from-Conversations-with-Key-Players-in-the-Audiovisual-Sector.pdf>.

Special Effects and Specialist Equipment



3.3. Production Services

3.3.1. Production Service Companies

Production Service Companies or PSC’s generally offer a broad range of services including pre-production, scouting, permit facilitation, location management, bi-lingual crew, coordination, logistics, equipment, casting, talent, hotel, transport, props, art department, construction, medical services, insurance, stunts, catering, among many others.

Brazil, and Greater São Paulo in particular, offers well-known PSC’s which have gained vast experience over the years with production of commercials as well as theatrical content, much of which has been financed through a set of sophisticated government subsidies. Many PSCs are part of well-organised industry entities such as BRAVI, SIAESP, APRO and also coordinate with the workers’ union, SINDCINE, all of which collectively support the sector for development of the Brazilian audiovisual industry in Greater São Paulo and throughout the country. Despite the generally positive context for PSC, concern was expressed by some producers in the consultations:

“Executive producers and scriptwriters who are trained or have experience to work at the international level are also hard to find; putting together a team for production is not straightforward.”

According to the survey, three-quarters (75%) of respondents selected either ‘medium’ or ‘high’ when asked to rate the current capacity of São Paulo’s production service companies, which is consistent with the good reputation of the country’s PSCs as described above. Furthermore, over two-thirds (69%) of survey respondents reported that the current fit of production service companies for international productions is ‘medium’ or ‘high’ (Figure 14) indicating the PSC are able to service both national and international productions.

The current capacity gauge has been set at eight (Figure 13), indicating notable immediate capacity available.

Figure 13 Production Service Companies Gauge Based on their Current Capacity

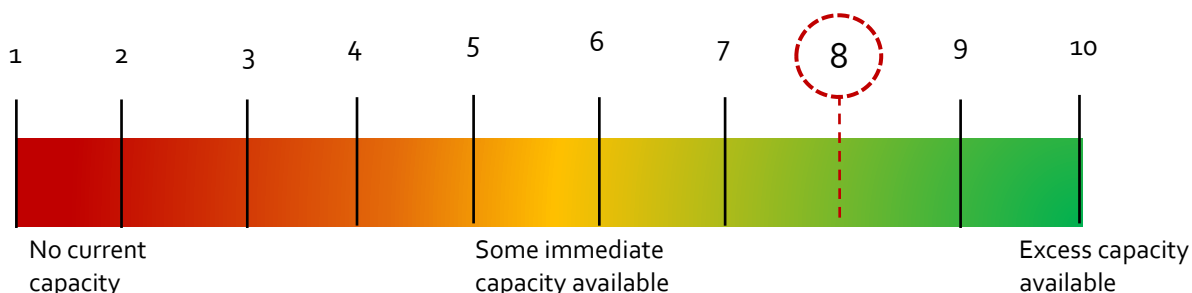
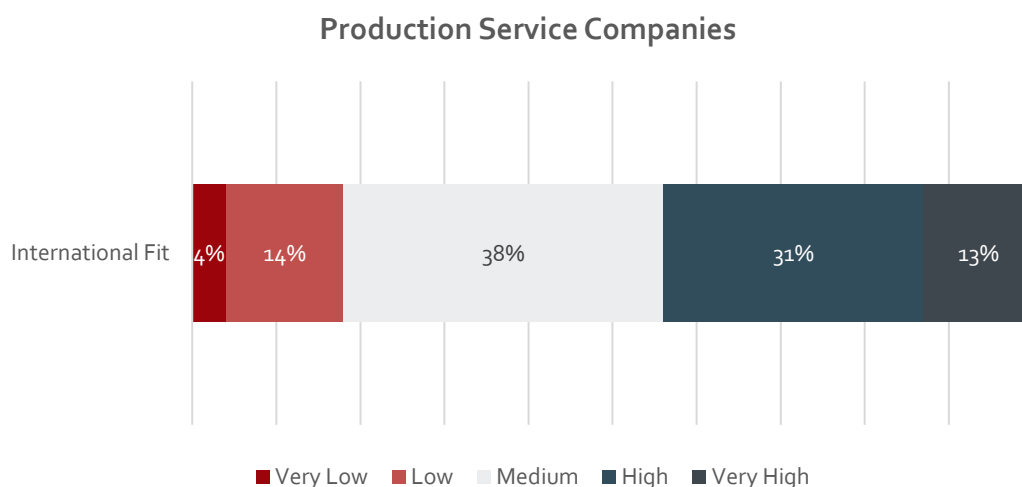


Figure 14 How do you Rate São Paulo’s Production Service Companies Based on their Fit for International Productions?



3.3.2. Production Accounting and Auditing Services

Production accounting and auditing services track costs and budgets throughout principal photography and post-production for all formats of audio-visual content. These services include payroll accounting, budgeting, cash flows, petty cash, and are especially important with budgets spread over multiple productions for various platforms, as is the case for many producers. They are also key when productions are taking part in a production incentive, as detailed auditing is required to successfully secure cash rebates. Furthermore, in Brazil these services are even more important due to the rigorous and burdensome accounting requirements to qualify of federal, state, and municipal funding.

While many PSCs have become accustomed to strict accounting procedures for national productions, they must also conform to international accounting standards when working with international producers. There appears to be current skill gap here, with over half (59%) of survey respondents (Figure 16) reporting that the current fit of production accounting and auditing services for international productions is 'medium' or 'low'.

The ISS (municipal service tax) legislation has recently undergone important changes. In November 2021 the ISS structure for the municipality of São Paulo lowered the tax from 5% to 2.0%, according to Law nº 17.719. This change is expected to become a major factor in making the municipality more competitive within Brazil and internationally and should be taken into consideration by production accounting services.

According to survey results, two-thirds (67%) of respondents selected either 'medium' or 'low' when asked to rate the current capacity of São Paulo’s production accounting and auditing services. Triangulating this response with consultations, SPI set the current capacity gauge at five (Figure 15), indicating some immediate capacity available.

Figure 15 Accounting and Auditing Gauge Based on their Current Capacity

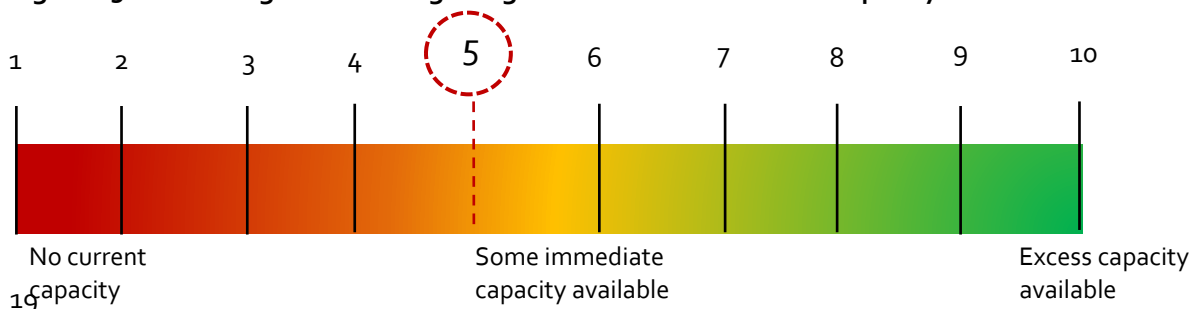
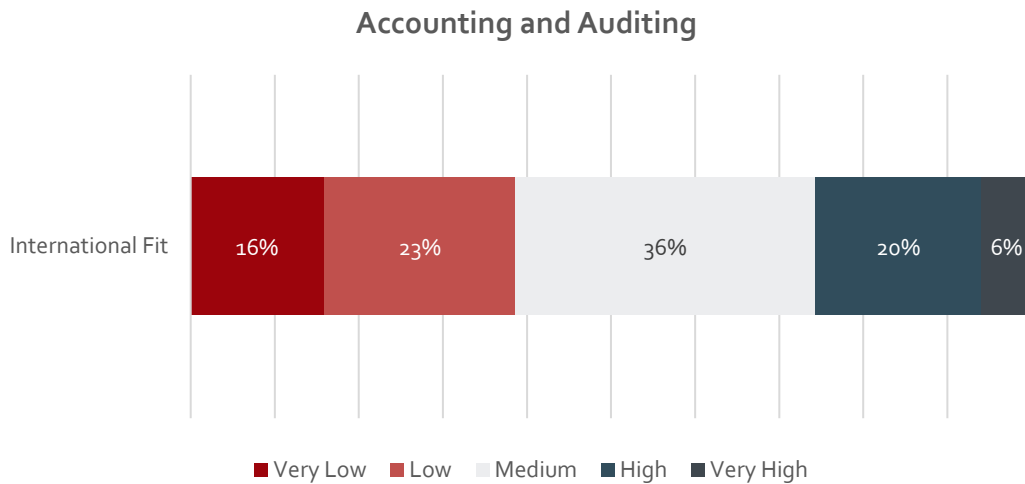


Figure 16 How do you Rate São Paulo’s Production Accounting and Auditing Services Based on their Fit for International Productions?



3.3.3. Hotels

Hotel accommodation is an important consideration for production plans, with film-friendly hotels making location shooting easier for cast and crew, especially areas wishing to attract international productions. Greater São Paulo has the largest and highest rated hotel industry in Brazil, which allows for many options for crews and producers.

Three-quarters (74%) of the survey respondents reported ‘high’ or ‘very high’ current hotel capacity in Greater São Paulo, and as shown in Figure 18, 63% indicated a ‘high’ or ‘very high’ rating of Greater São Paulo’s hotels based on their fit for international productions, which serves as value-added for international producers in need of high-level accommodations for talent and top crew.

The gauge for current hotel capacity is set at eight (Figure 17), indicating notable immediate capacity available.

Figure 17 Hotels Gauge Based on their Current Capacity

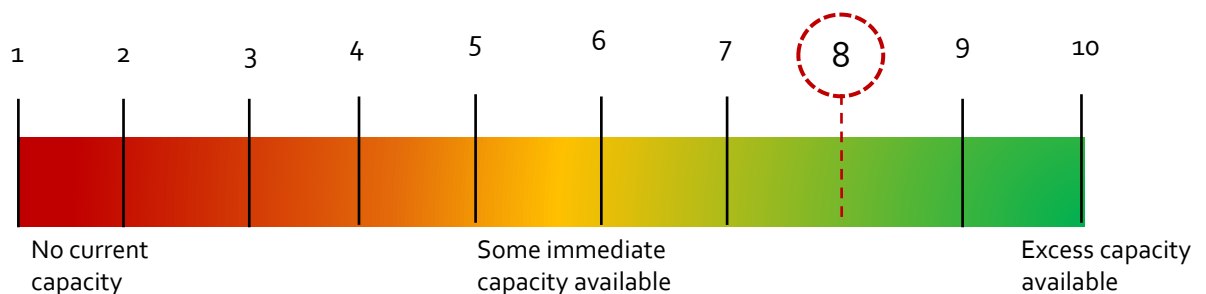
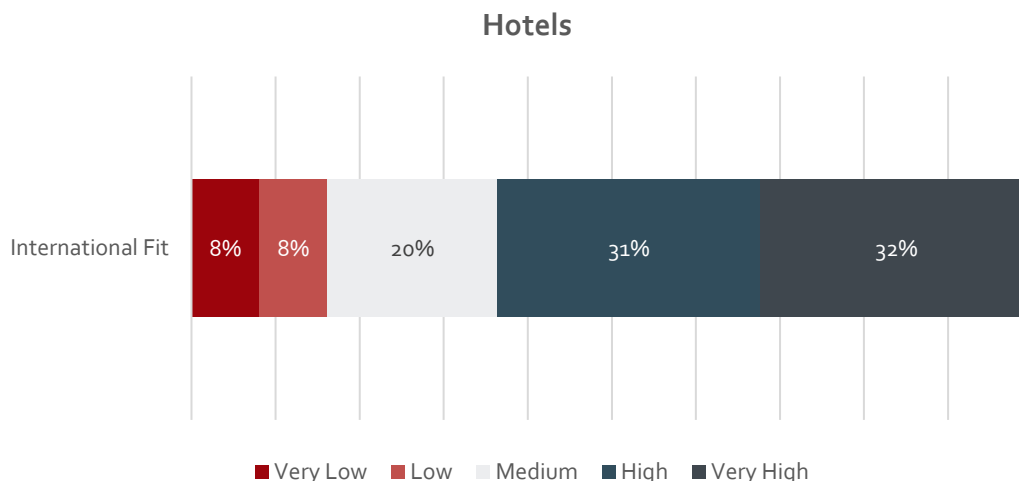


Figure 18 How do you Rate São Paulo’s Hotels Based on their Fit for International Productions?



3.4. Conclusions

Based on the survey results, desk research and consultations, Greater São Paulo offers certain strengths and weaknesses in key areas of production infrastructure and services.

In the critical area of studio facilities, the medium-to-low current capacity in purpose built sound stages, with those spaces regularly booked out on long-term projects, as well as the medium to low fit for international productions, will act as a major constraint inhibiting Greater São Paulo’s ability to capture the growth that is possible in this sector, especially for inward productions.

On the other hand, the experienced and highly rated production service companies in Greater São Paulo offer a distinct comparative advantage to attract international producers and projects. Reductions in the ISS rates and regulations will also help fight the view that Brazil and Greater São Paulo are expensive to produce in.

4. BELOW-THE-LINE WORKFORCE CAPACITY

In terms of capacity, globally BTL workforce is close or at full capacity in several territories. These capacity gaps are influenced by several factors, including a rise in multiple concurrent productions, acceleration of production to clear the backlog of productions put on pause during COVID-19 lockdown periods, and in some cases, a clash between national and international standards for specific roles.

With the internationalisation of the audiovisual content production sector, specific roles are seeing growing demand and transformation. In the audiovisual sector, these transformations differ between above-the-line (ATL) and below-the-line (BTL) crew roles. BTL roles, those considered in this study, require technical skills. For competitiveness within the global market, these technical skills would ideally be standardised in the interest of efficiency and safety. The key jobs in this area include roles in sound editing, art direction, post-production, construction,

and script supervision, among others, and in developing industries with a history of insularity, training has often occurred on-the-job which makes standardisation a challenge.

As a result, territories are beginning to incorporate training and education requirements into their tax incentives in an effort to pre-empt crew capacity concerns. While Spcine does not outline any training and education requirement in its cash rebate scheme, the programme does make a pioneering push for diversity and inclusion. By incentivising the hiring of women, transgender people, and those from Black and Indigenous backgrounds to key positions in a production, Spcine is indirectly supporting growth in workforce capacity.

The diversity and inclusion lens is essential towards ensuring the industry based in Greater São Paulo reaches its full competitive potential while also being representative of the diversity characteristic of the city, a strong selling point also that contributes towards its attractiveness as a location.

Additionally, while the economic benefits of attracting more and larger international productions are highly desirable, within a context of capacity constraint there is a risk of cost inflation affecting local productions more adversely. It is to be expected that international productions with high-budget content will seek the most competent local professionals and crews, this trend may be at the expense of low-budget national productions, causing supply chain shortages in general. This trend is an additional motive for preparing BTL training programs which will produce qualified professionals to meet the demand of both international and national productions.

4.1. Director and Script Department

4.1.1. *First Assistant Director*

In the production stage of a project, the first assistant director (first AD) is responsible for determining and managing a project's filming schedule and working with the director, director of photography and heads of department to ensure filming is on schedule and efficient.

The first AD is also responsible, in the pre-production stage of a project, for studying the script and determining what is needed in terms of cast, locations, equipment and crew and then surveying filming locations to assure their suitability for the project. This is how they determine the shooting schedule and establish how long each scene will take to film; this enables the project's director to focus on actors' performances and framing the shots.

The study survey found that just over half (55%) of respondents rated the current capacity of first AD as 'high' or 'very high'.

Those working in this position were largely seen as being capable of and/or experience in working on inward international productions, with just over half (54%) of respondents rating this role as either 'high' or 'very high' in terms of international fit (Figure 20).

The study's consultations, however, raised some concerns on capacity within the Director and Script Department in general, with one consultee stating:

"[The industry meets] 100% of the [current] demand, but if it goes up, I don't know what we'll do. All the roles are lacking [to some extent], we'll need support for everything: assistant directors, photography directors, electricians... we're not forming people at the same rate the demand is growing, we need to find a way to do what we were doing in one year in 3 months."

The current capacity levels reported for the first assistant director role may therefore be explained by the fact that this role is often seen as a stepping-stone towards becoming a line producer or director. Despite not being seen as a 'destination' role, professionals need to work in this position long enough to gain substantial industry experience and skills to fulfil the first assistant director and line producer responsibilities to a desirable standard.

Although the research, consultations and survey conducted as part of this study found that the professionals currently working as a first assistant director in Greater São Paulo have capacity and are fit to work on inward international productions, it is important to emphasise that for consistency in these factors, the entry of new talent into the industry needs to be consistently stimulated.

To address workforce capacity caps, skills and training development are key. As they stand, there is a chance the training and skills development provided by film schools, universities and vocational education providers in Greater São Paulo is not either sufficient or fast-paced enough to meet the growing demand for audiovisual content production.

Consultations show that training often happens on-the-job and recruiting for new talent into the industry often happens informally through family members training family members. This type of uncoordinated and unregulated training can lead to low level skill training, which can limit growth and potentially incur safety risks. Additionally, informal training pathways may pose a barrier towards achieving greater diversity within the audiovisual content production industry. In order to prevent these distortions, concerted efforts must be made to establish formal workforce training programs.

Investment into formal training pathways, likely through partnerships with universities, film schools, and vocational education providers, and industry training pathways, usually in the form of paid traineeship or internship schemes, will yield positive results in attracting and qualifying young talent based in Greater São Paulo at a much-needed quicker pace and a higher quality.

Considering this, the overall capacity gauge score for first assistant director is seven (Figure 19), indicating notable immediate capacity available.

Figure 19 First Assistant Director Gauge Based on their Current Capacity

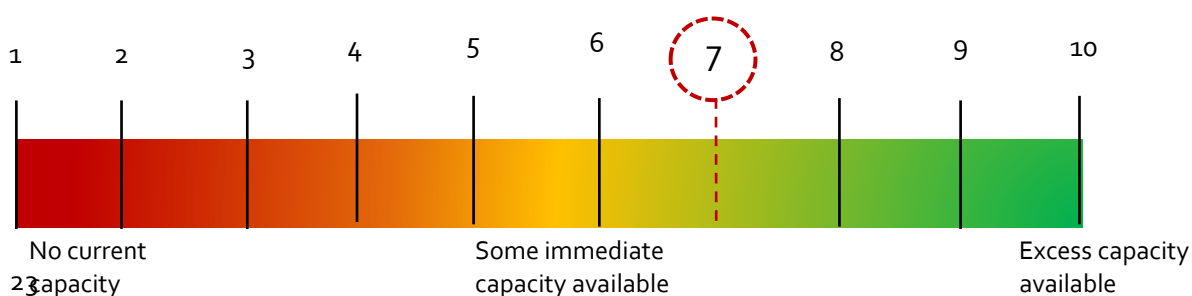
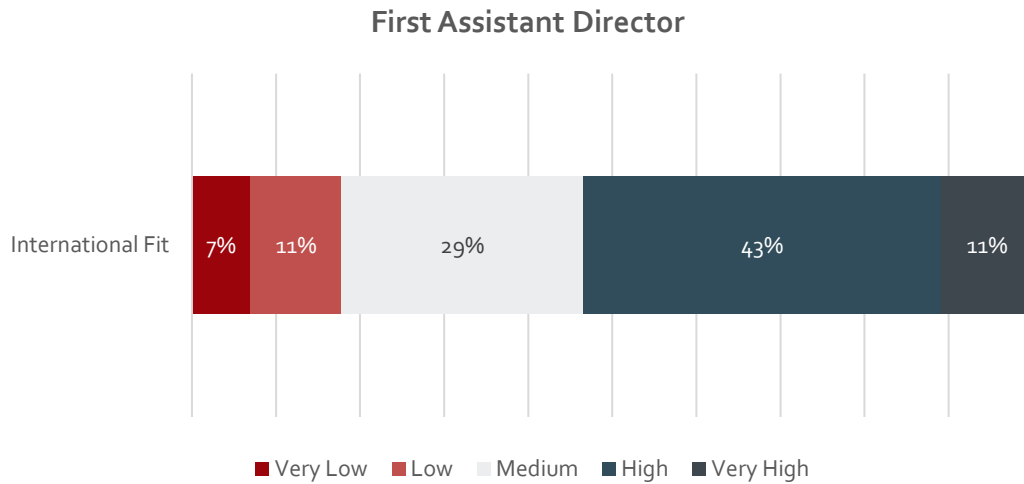


Figure 20 How do you Rate São Paulo’s First Assistant Directors Based on their Fit for International Productions?



4.1.2. Second Assistant Director

The second assistant director (second AD) works directly with the first assistant director (second AD), supporting their work by preparing each day of filming, as well as the next day’s call sheet. The second AD is then the main point of contact for the project’s cast, providing their call sheet to them, ensuring their transportation, makeup, and wardrobe schedules are coordinated so that they are ready for filming when needed to keep with the first ADs filming schedule. Besides the main cast, the second AD is also in charge of booking extras and coordinating their presence on set.

The study’s survey found that half of respondents (49%) rated the current capacity of the second assistant director role as either ‘high’ or ‘very high’.

As with first assistant directors, those working in this position were largely seen as being capable of and/or experienced in working on inward international productions, with 41% of respondents rating the international fit of these professionals being either ‘high’ or ‘very high’ (Figure 22).

There being less reported capacity in the second assistant director’s role compared to first assistant directors suggests that there is likely a need a greater incentive towards the entry of new talent into the Director and Script Department.

Consultees reporting that productions are being forced to hire people with little experience into critical highly experienced roles indicates that individuals are moving through transitional roles more quickly than would be recommended. This will negatively impact efficiency in productions or even, the overall perception of the preparedness of São Paulo-based professionals.

Considering both the survey results and consultations, the overall capacity gauge score for second assistant director is five (Figure 21), indicating some immediate capacity.

Figure 21 Second Assistant Director Gauge Based on their Current Capacity

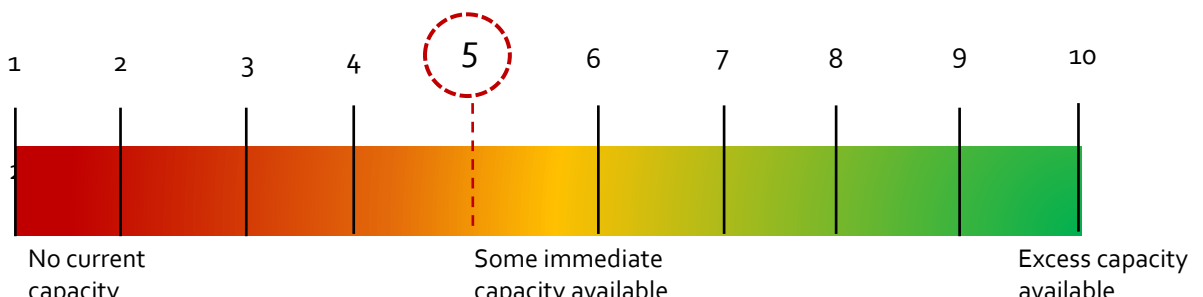
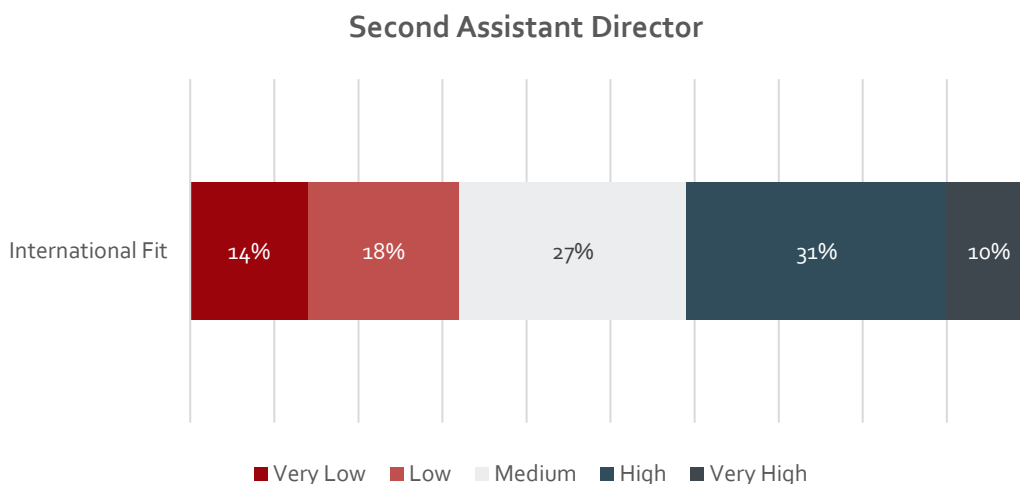


Figure 22 How do you Rate São Paulo’s Second Assistant Directors Based on their Fit for International Productions?



4.1.3. Script Supervisor

Audiovisual content productions are usually filmed out of sequence and because of this there is a need for a dedicated professional to oversee the continuity of scenes and ensure that, when filming wraps, the footage is edited into a cohesive whole.

The professional responsible for overseeing continuity is the script supervisor and the process begins in the pre-production stage, when they analyse the script in terms of actor, action, wardrobe, and props in scene and determine a timeline (termed 'story days' in the industry). This timeline allows the script supervisor to time the script.

During filming, the script supervisor monitors the dialogue and actions, to ensure nothing is overlooked, and checks that the actor’s eyelines match. They keep records of these details along with camera, lens, slate, and scene number information. These records are added to daily reports that are then shared with VFX supervisors, directors, and editors.

The study survey found that just under half (46%) of respondents rated the current capacity of script supervisors based in Greater São Paulo as 'high' or 'very high'. Those working within these positions were largely seen as being capable of working on inward international productions, with two-thirds (74%) of respondents rating this role as 'medium,' 'high' or 'very high' for international fit (Figure 24).

While this is positive, several consultees still expressed difficulties in putting together a Director and Script Department team. One interviewee specifically stated:

"There's always a lack...assistant directors, script supervisors and focus pullers are hard to find"

Similar statements were made throughout the consultation process, indicating that while there are currently enough qualified script supervisors working in Greater São Paulo the situation may be prone to change quickly.

Considering both the survey results and consultations, the overall capacity gauge score for script supervisors is seven (Figure 23), indicating notable immediate capacity available.

Figure 23 Script Supervisor Gauge Based on their Current Capacity

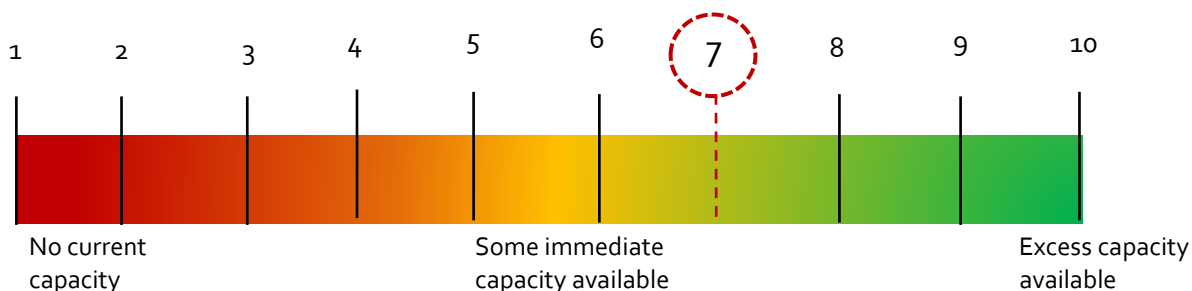
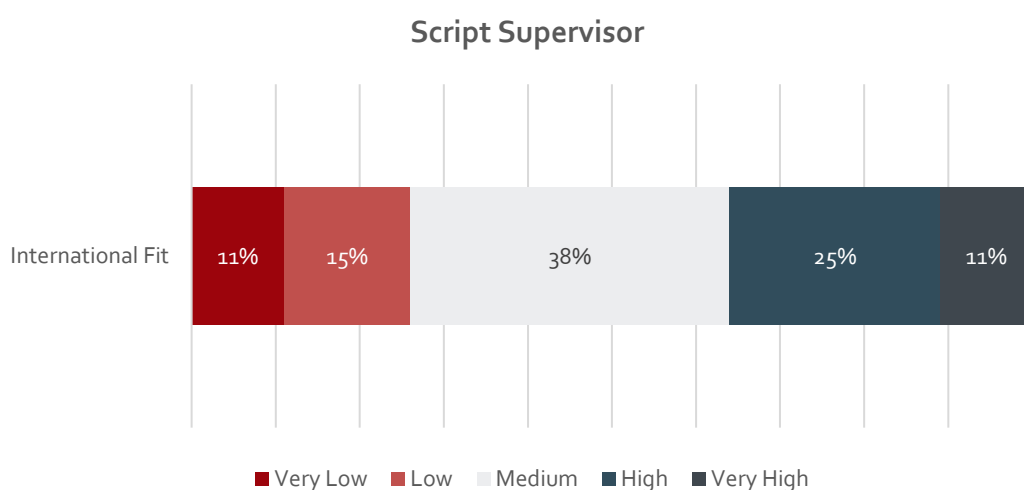


Figure 24 How do you Rate São Paulo’s Script Supervisors Based on their Fit for International Productions?



4.2. Art Department

4.2.1. Director of Photography

The director of photography, also known as the DP or cinematographer, is ultimately responsible for creating the “look” of a film. It is one of the key roles in any project, and Brazil well-known for its competent DPs, such as Lula Carvalho, Cesar Charlone, Affonso Beato and Adriano Goldman, some of which have been hired by international producers.

Goldman, who recently won two Primetime Emmy Awards in 2018 and 2021 for Outstanding Cinematography for a Single-Camera Series (One Hour) for his work on *The Crown* (2016 –), has been mainly working outside of Brazil. Goldman’s professional trajectory brings to attention the potential loss of talent that may occur when production levels and spend in a territory are unable to grow in line with the current context of global production deluge.

The Brazilian Association of Cinematographers (ABC) based in Rio de Janeiro trains DPs and other technicians for BTL roles throughout the country.

Three-quarters (74%) of the survey respondents reported ‘high’ or ‘very high’ current capacity for DPs in Greater São Paulo, and just short of two-thirds (63%) indicated a ‘high’ or ‘very high’ rating of Greater São Paulo’s DPs based on their fit for international productions (Figure 26). These relatively high scores in both categories underscore Brazil’s competence and good reputation for the role of director of photography.

The gauge for directory of photography based on current capacity has been set at seven (Figure 25), indicating notable immediate capacity available.

Figure 25 Director of Photography Gauge Based on their Current Capacity

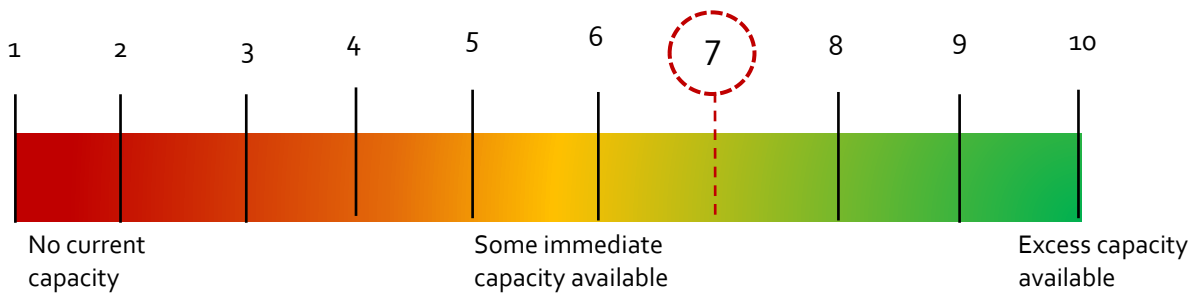
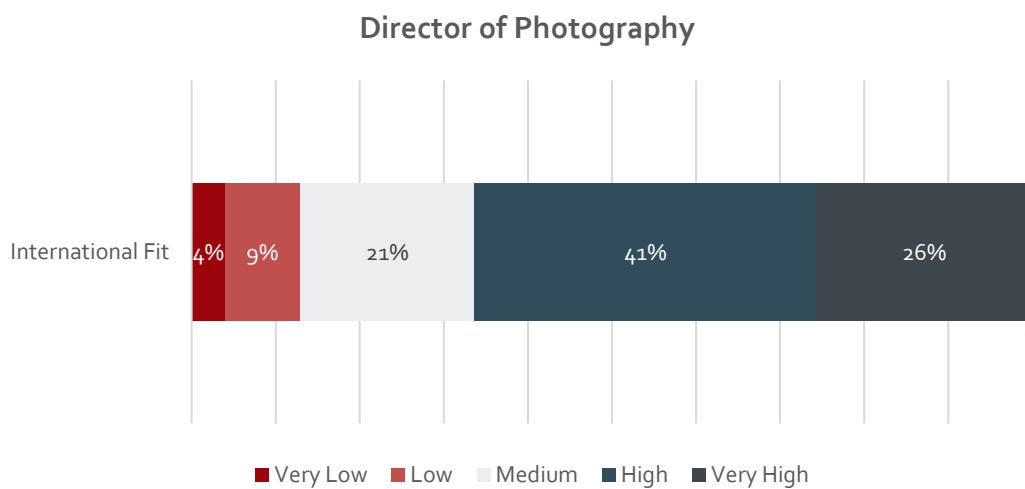


Figure 26 How do you Rate São Paulo’s Directors of Photography Based on their Fit for International Productions?



4.2.2 Production Designer

Production designers are responsible for the visual concept of a film, series or any other audiovisual format production. They identify a design style for sets, locations, graphics, props, lighting, camera angles and costumes, while working closely with the director and producer. It is one of the key role gaps identified in Latin America by the Inter-American Development bank in its forementioned publication¹⁶.

70% of the survey respondents reported 'high' or 'medium' current capacity for production designers in Greater São Paulo, and as shown in Figure 28, two-thirds (67%) indicated a 'high' or 'very high' rating of Greater São Paulo’s production designer based on their fit for international productions. The relatively high scores in both categories indicate that national and international productions will benefit from the competence of production designers in Greater São Paulo.

Based on the survey, consultations and desk research, the gauge for current capacity has been set at seven (Figure 27), indicating notable immediate capacity available. This reflects the great demand by international producers for this skill.

Figure 27 Production Designer Gauge Based on their Current Capacity

¹⁶ Ibid.

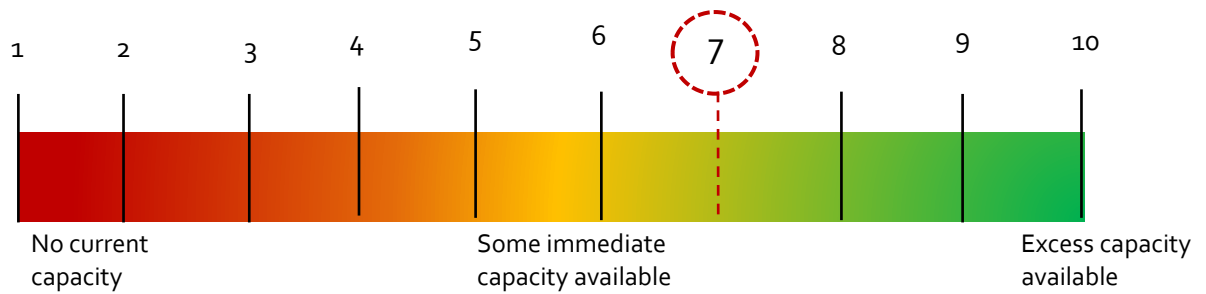
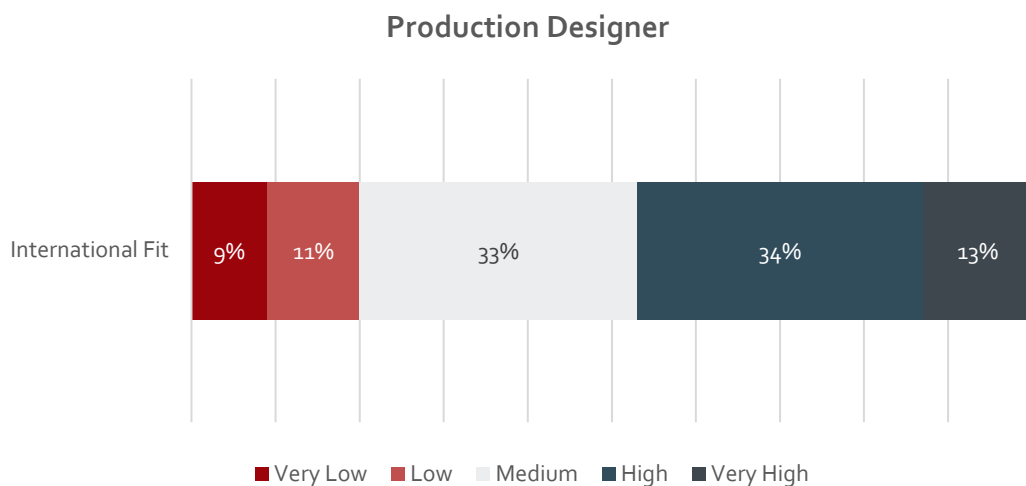


Figure 28 How do you Rate São Paulo’s Production Designers Based on their Fit for International Productions?



4.2.2 Art Director

The role of art director is to report to the production designer, and specifically to coordinate the set design, oversee artists and construction workers, and help determine the overall look of a film production. During pre-production, the art director acts as a liaison between the production designer and the construction crew.

A significant proportion (85%) of the survey respondents reported a 'high' or 'medium' current capacity for art directors in Greater São Paulo, and as shown in Figure 30, 71% indicated a 'high' or 'medium' rating of Greater São Paulo’s art directors for their fit for international productions. As with the role of production designer described above, which oversees the art director, the relatively high scores in both categories indicate that national and international productions will benefit from the competence of art directors in the region.

The gauge for current capacity has been set at eight (Figure 29), indicating notable immediate capacity available.

Figure 29 Art Director Gauge Based on their Current Capacity

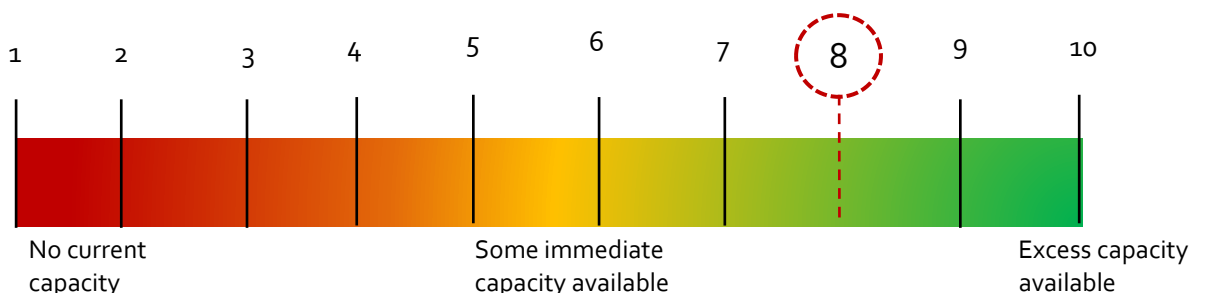
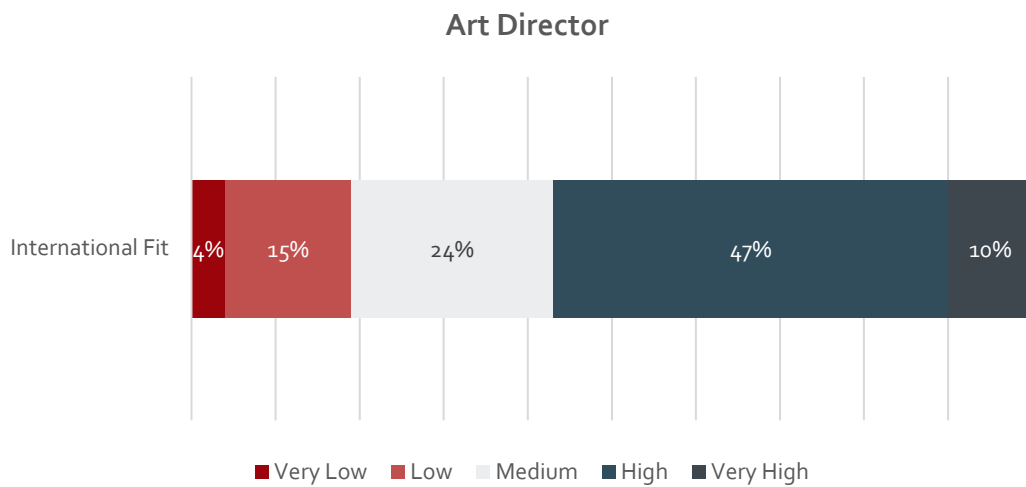


Figure 30 How do you Rate São Paulo’s Art Director Based on their Fit for International Productions?



4.2.2 Greensperson

The greensperson is responsible for procuring, arranging and keeping any plant material alive for the film. They use both real and fake materials to dress the sets. The greensperson usually reports to the art director or the production designer.

Two-thirds (66%) of the survey respondents reported 'low' or 'medium' current capacity for greensperson in Greater São Paulo, and as shown in Figure 32, 58% indicated a 'low' or 'medium' rating of Greater São Paulo’s greensperson based on their fit for international productions. These relatively low scores for both categories reflect the current high demand for this position according to the above-mentioned IDB report in which greensperson is rated five among the top ten BTL roles currently in shortest supply in Latin America and the Caribbean.

Based on consultations, desk research and the survey results, the gauge for current capacity has been set at three (Figure 31), indicating little current capacity available.

Figure 31 Greensperson Gauge Based on their Current Capacity

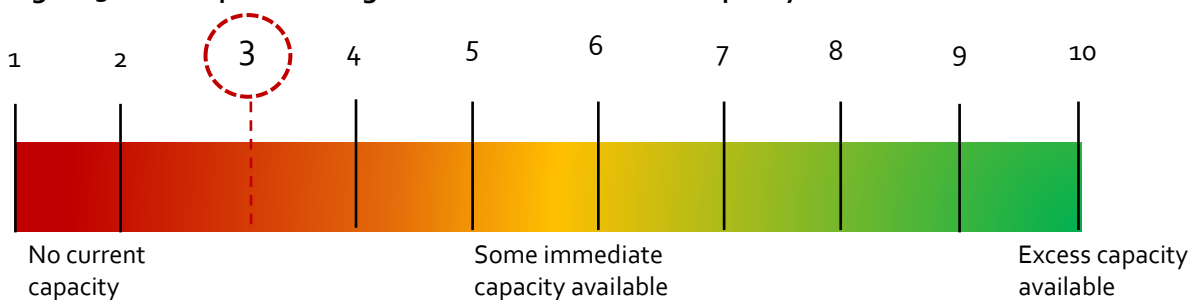
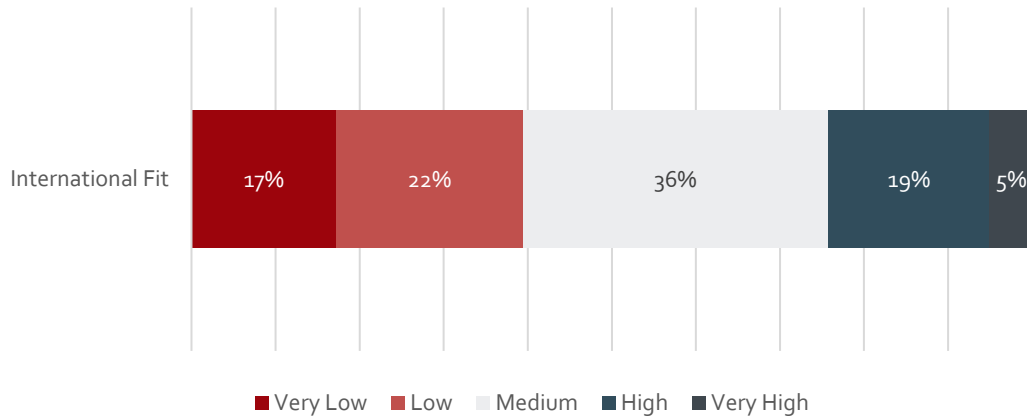


Figure 32 How do you Rate São Paulo’s Greensperson Based on their Fit for International Productions?

Greensperson



4.2.3 Special Effects Makeup Artist

Special effects makeup artists use makeup and prosthetics to reproduce wounds, deformities, wrinkles, or supernatural features. They combine mastery of basic film makeup with knowledge of advanced SFX makeup techniques for more dramatic effects.

Just over half (55%) of the survey respondents reported 'low' or 'medium' current capacity for special effects makeup artists in Greater São Paulo, and half (50%) indicated a 'low' or 'medium' rating of Greater São Paulo's special effects makeup artists based on their fit for international productions (Figure 34). The relatively low scores in both categories appear to be consistent with the demand by producers and trend toward the popularity of action films requiring more sophisticated special effects makeup.

Based on consultations, desk research and the survey results, the gauge for current capacity has been set at four (Figure 33), indicating little current capacity available.

Figure 33 Special Effects Makeup Artist Gauge Based on their Current Capacity

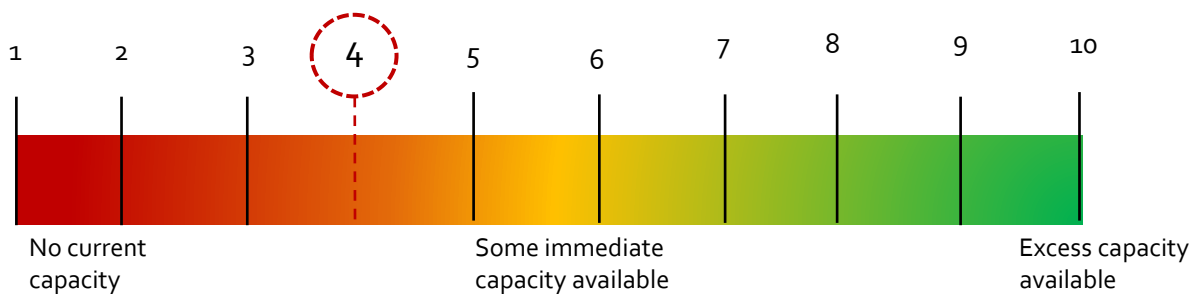
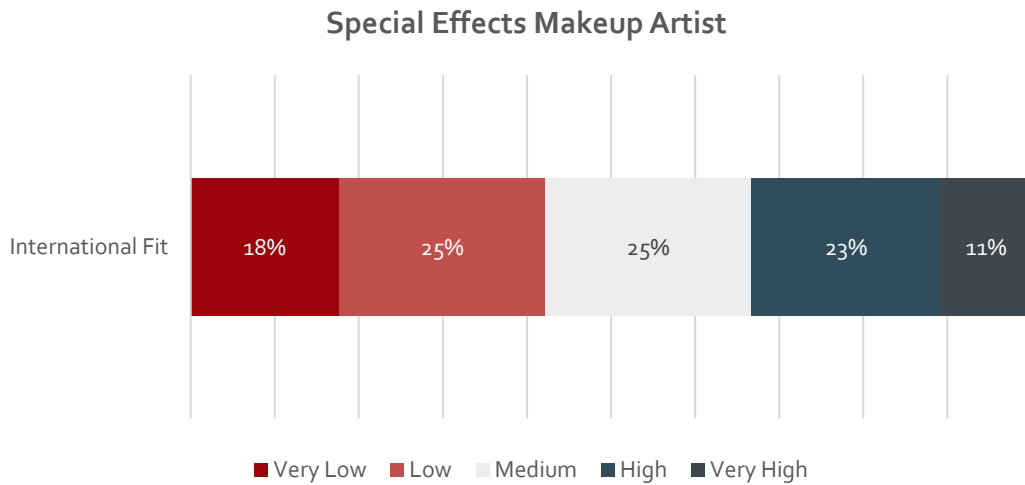


Figure 34 How do you Rate São Paulo’s Special Effects Makeup Artist Based on their Fit for International Productions?



4.3. Camera and Grip Department

4.3.1. Gaffer

The gaffer or chief lighting technician is the head electrician, responsible for the execution, and sometimes the design, of the lighting plan for a production.

Three-quarters (75%) of the survey respondents reported 'high' or 'medium' current capacity for gaffers in Greater São Paulo, and 72% indicated a 'high' or 'medium' rating of Greater São Paulo’s gaffers based on their fit for international productions (Figure 36). The relatively high score in both categories reflect the current competence of this role in São Paulo and is consistent with the fact that it is not among the top 10 BTL roles currently in shortest supply in Latin America and the Caribbean, listed in the abovementioned IDB report.

The gauge for current capacity of gaffers has been set at seven (Figure 35), indicating notable immediate capacity available.

Figure 35 Gaffer Gauge Based on their Current Capacity

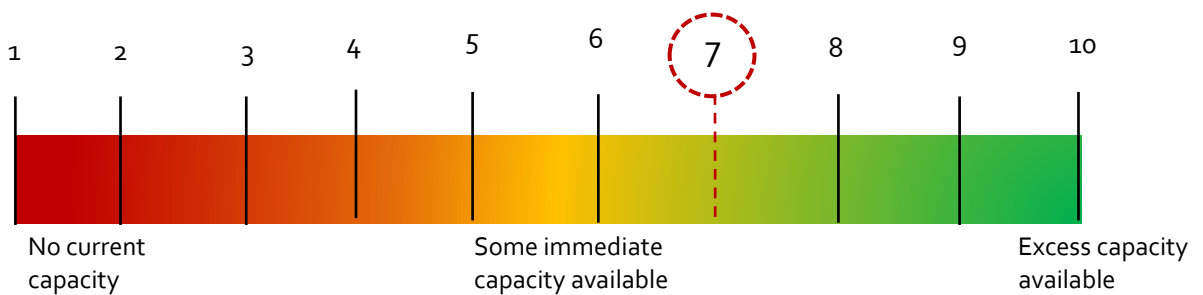
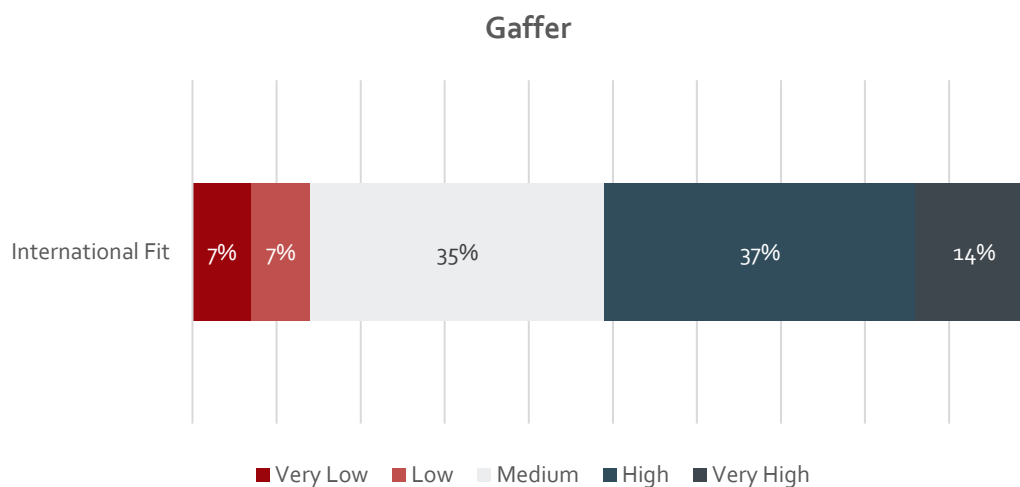


Figure 36 How do you Rate São Paulo’s Gaffers Based on their Fit for International Productions?



4.3.2. Camera Operator

Camera operators are responsible for operating a variety of technical equipment including single and multiple portable cameras, remote-control and electronic cameras, cranes and mobile mountings.

Three-quarters (74%) of the survey respondents reported 'very high' or 'high' current capacity for camera operators in São Paulo, and 60% indicated a 'high' or 'medium' rating of São Paulo's camera operators based on their fit for international productions (Figure 38). As with the role of gaffer above, the relatively high score in both categories reflect the current competence of this role in São Paulo and is consistent with the fact that it is not among the top 10 BTL roles currently in shortest supply in Latin America and the Caribbean, listed in the abovementioned IDB report.

"The equipment that requires more technological knowledge creates a gap between generations. Older professionals aren't necessarily up to date with new equipment, there's been an entry of professionals fired from broadcast TV... [who] went to knock on the door of producers... there's no renovation in these roles"

Based on consultations, desk research and the survey results, the gauge for current capacity has been set at seven (Figure 37), notable immediate capacity available.

Figure 37 Camera Operator Gauge Based on their Current Capacity

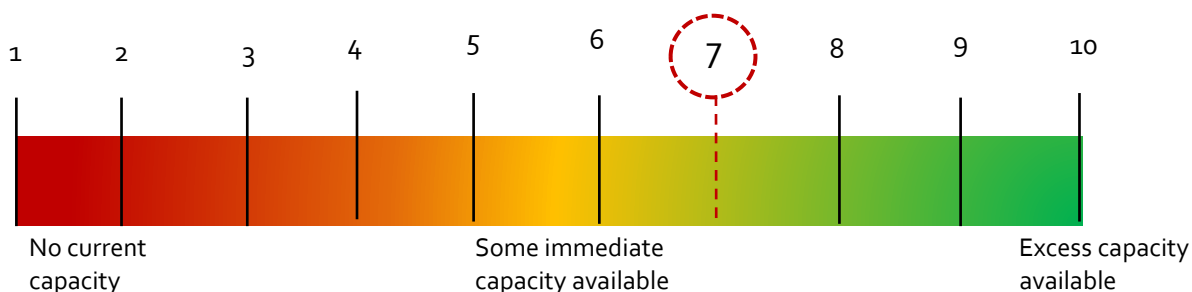
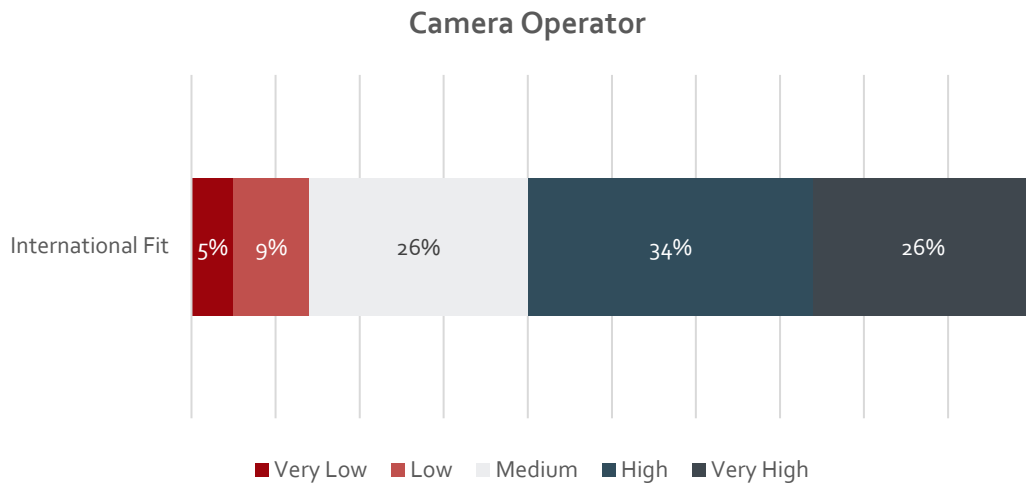


Figure 38 How do you Rate São Paulo’s Camera Operators Based on their Fit for International Productions?



4.3.3. Grip

The grip is responsible for setting up, rigging, and striking lighting equipment on set. They are also responsible for keeping equipment organised, and sometimes equipment maintenance.

Three-quarters (76%) of the survey respondents reported 'high' or 'medium' current capacity for grips in Greater São Paulo, and as shown in Figure X, 72% indicated a 'high' or 'medium' rating of São Paulo’s grips based on their fit for international productions (Figure 40). As with the roles of camera operator and gaffer above, the relatively high score in both categories reflect the current competence of this role in São Paulo and is consistent with the fact that it is not among the top 10 BTL roles currently in shortest supply in Latin America and the Caribbean, listed in the abovementioned IDB report.

The gauge for current capacity of grips has been set at seven (Figure 39), indicating notable immediate capacity available.

Figure 39 Grip Gauge Based on their Current Capacity

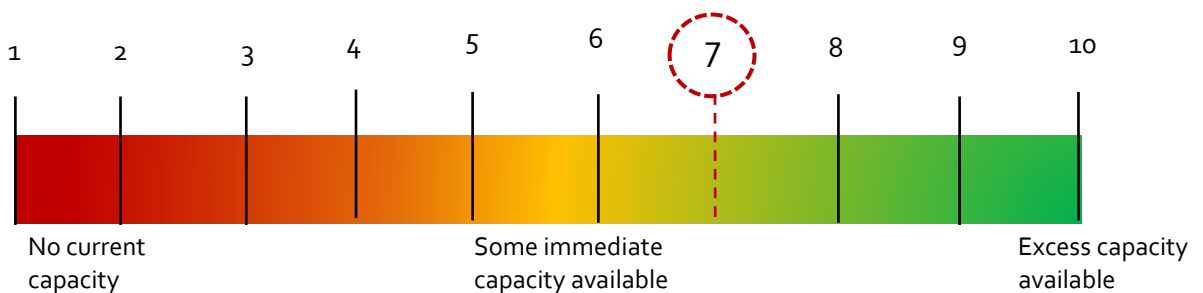
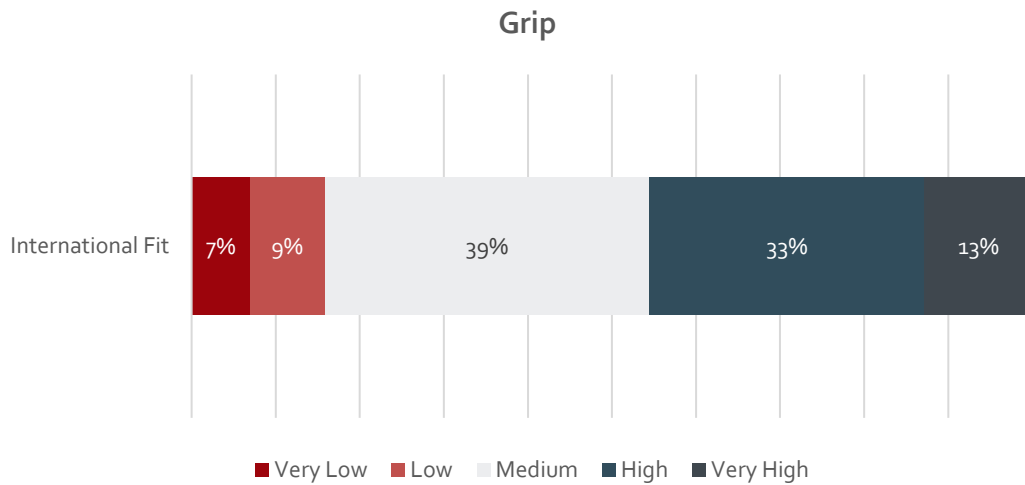


Figure 40 How do you Rate São Paulo's Grip Based on their Fit for International Productions?



4.4. Construction Department

4.4.1. Construction Manager

Construction managers look after the building of studios and sets. They make sure that sets look as realistic or otherwise as desired. They interpret the drawings of the production designer, art directors and draughtspersons and work out how to build them in ways that are safe and environmentally friendly.

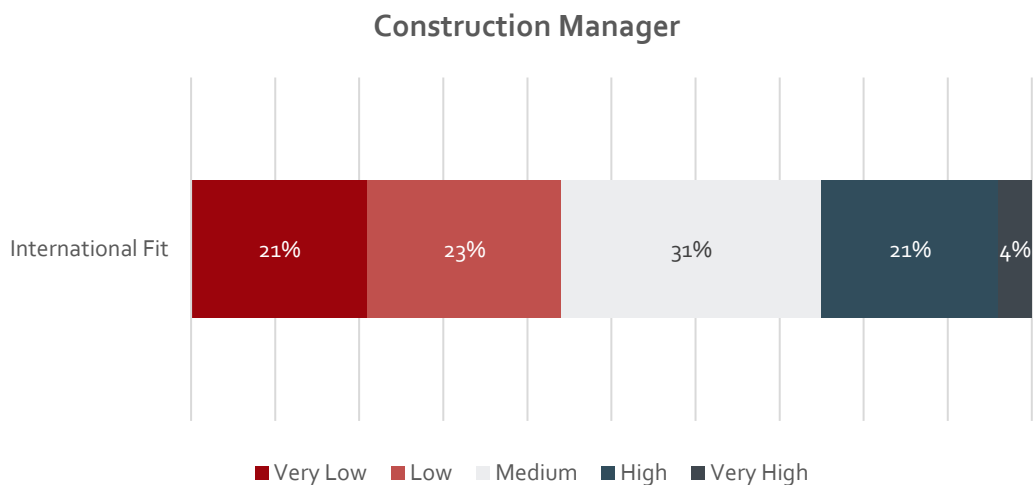
Just short of two-thirds (63%) of the survey respondents reported 'high' or 'medium' current capacity for construction managers in Greater São Paulo, and 54% (Figure 42) indicated a 'high' or 'medium' rating of Greater São Paulo's construction managers based on their fit for international productions. It is noteworthy that according to the above-mentioned IDB report, the role of construction managers is among the top ten roles currently in shortest supply and also likely to be in higher demand in 2024., so that implies that while there exists some current capacity, demand for this role is likely to increase.

Based on desk research, consultations and survey results, the gauge for current capacity has been set at six (Figure 41), indicating some immediate capacity available.

Figure 41 Construction Manager Gauge Based on their Current Capacity



Figure 42 How do you Rate São Paulo’s Construction Manager Based on their Fit for International Productions?



4.5. Health and Safety Department

In part driven and emphasised by COVID-19 restrictions (e.g., social distancing, mandatory wearing of facemasks and rapid testing), the health and safety of production sites has become increasingly important to producers and relevant authorities. A highly technical function, relevant and up-to-date training in this area will be hugely attractive to inward productions who may be less familiar with local laws and restrictions.

4.5.1. COVID-19 Safety Marshal

As a new position necessitated by the COVID-19 pandemic, capacity constraints for the COVID-19 safety marshal role were expected. Usually, the role of COVID-19 safety marshal would be fulfilled by an experienced professional who upskilled.

In the other parts of the world, including the USA and UK, senior production staff such as heads of department and first ADs with at least five years of experience are designated to implement, monitor, and oversee COVID-19 safety arrangements on a set.

The study’s survey found that under half (42%) of respondents rated the current capacity of COVID-19 safety marshals as either ‘high’ or ‘very high’. Another third (38%) of respondents rated capacity as ‘medium’.

Those working within this position were largely seen as being capable of working on inward international productions, with just under half (46%) of respondents rating the international fit of COVID-19 safety marshals working in Greater São Paulo as either ‘high’ or ‘very high’ (Figure 44).

It remains to be seen how long this position stays in effect or whether it evolves into something new, but the study’s survey results do reflect consultation and research findings suggesting the industry based in Greater São Paulo was able to effectively respond to the needs created by the pandemic context, even if in an improvised manner in the short-term.

Considering this, the overall capacity gauge score for COVID-19 safety marshal is six (Figure 43), some immediate capacity available.

Figure 43 COVID-19 Safety Marshal Gauge Based on their Current Capacity

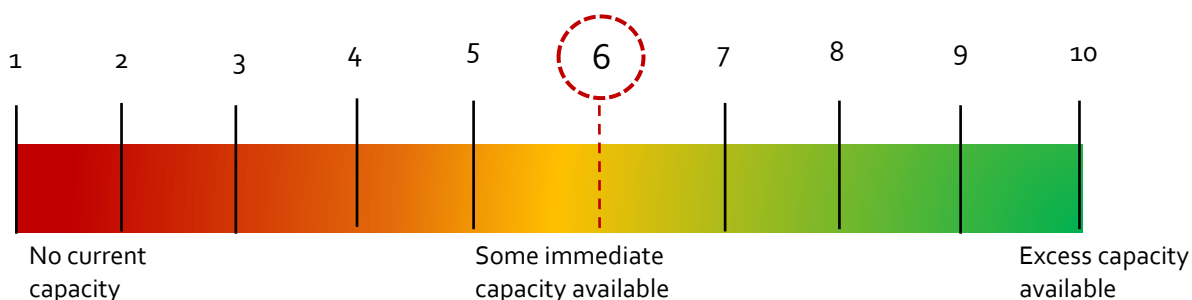
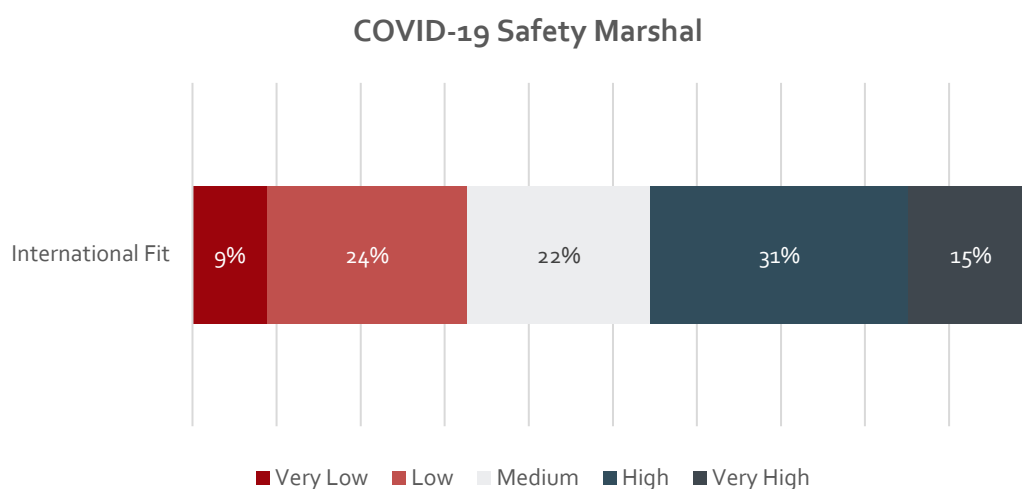


Figure 44 How do you Rate São Paulo’s COVID-19 Safety Marshal Based on their Fit for International Productions?



4.5.1. Safety Supervisor

Independent of how the COVID-19 pandemic conditions progress, the safety supervisor role is essential towards establishing a city’s desirability as a shooting location for international productions. They are responsible for evaluating risks and ensuring that in every situation on a set, the health and safety of the cast and crew is prioritised.

The study’s survey found that one-thirds (37%) of respondents rated the current capacity of safety supervisors as either ‘high’ or ‘very high’. Another third (39%) of respondents rated capacity as ‘medium.’

Those working within these positions were seen as being capable of working on inward international productions, with just under half (47%) of respondents rating this role as ‘high’ or ‘very high’ for international fit (Figure 46).

Improving the capacity levels of the Health and Safety Department roles may be essential to meet demand from both local and international productions during the upcoming months in Greater São Paulo. However, capacity levels and international fit need to be addressed in a coordinated manner. Greater São Paulo needs to ensure that the health and safety procedures and safety supervisors who enforce them align with the expectations of inward international productions.

This is not only because ensuring safety on set is fundamental and better achieved when it is the specific responsibility of a professional or team of professionals, but also because

consultees specifically cited a perceived lack of security within the City of São Paulo as an impediment towards efficiently attracting inward production to Greater São Paulo.

One consultee noted:

"We have a very bad image problem, we worked on this over the last two decades and then reversed ten years [worth of progress] in the last three years, co-productions with Brazil are being discriminated against... for projects that involve star power, the security issue and having to hire insurance companies creates difficulty."

Considering this, the overall capacity gauge score for safety supervisors is four (Figure 45), indicating little current capacity available.

Figure 45 Safety Supervisor Gauge Based on their Current Capacity

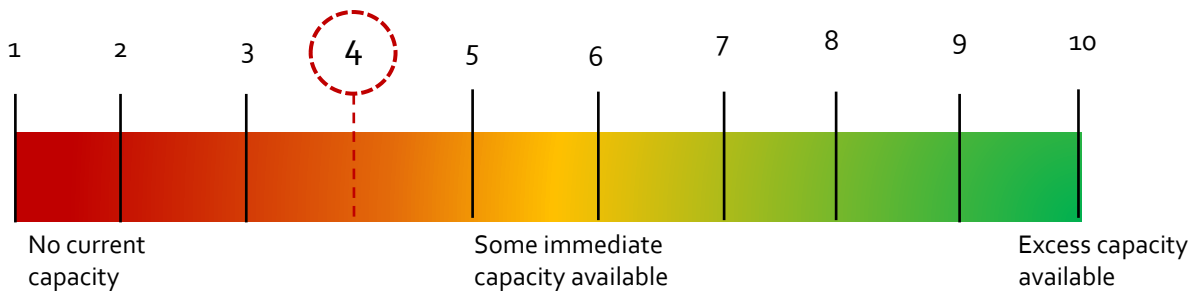
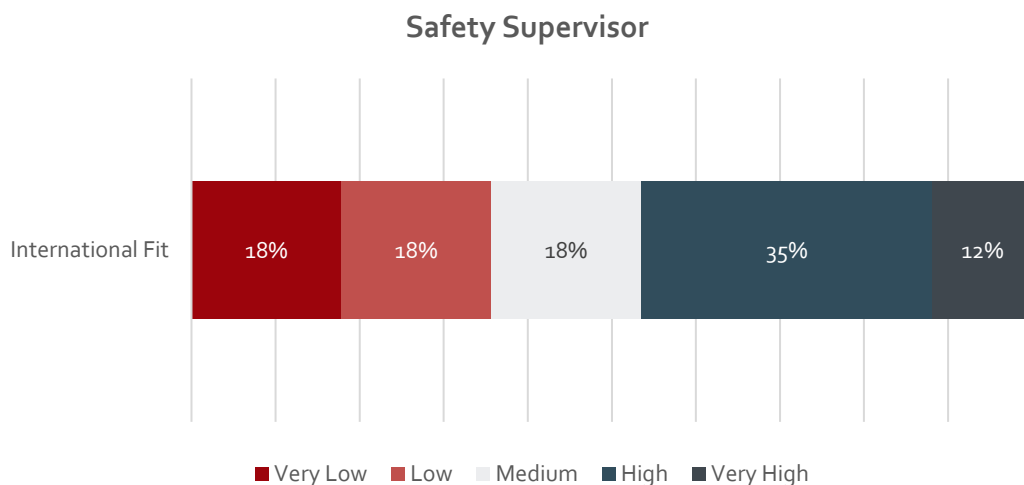


Figure 46 How do you Rate São Paulo’s Safety Supervisor Based on their Fit for International Productions?



4.6. Locations Crew

4.6.1. Location Manager

The location in which a film is set has a huge impact on its look, feel and story. It’s the job of location managers to find that place in the physical world and make sure it’s accessible, safe, and not too expensive to hire.

Based on scripts and discussions with the director, production designers and other department heads, location managers start their research. They might be looking for deserts, stately homes, or shady underpasses. They arrange visits to the locations, take photographs, detailed notes, start discussions with the location owners and work out costs.

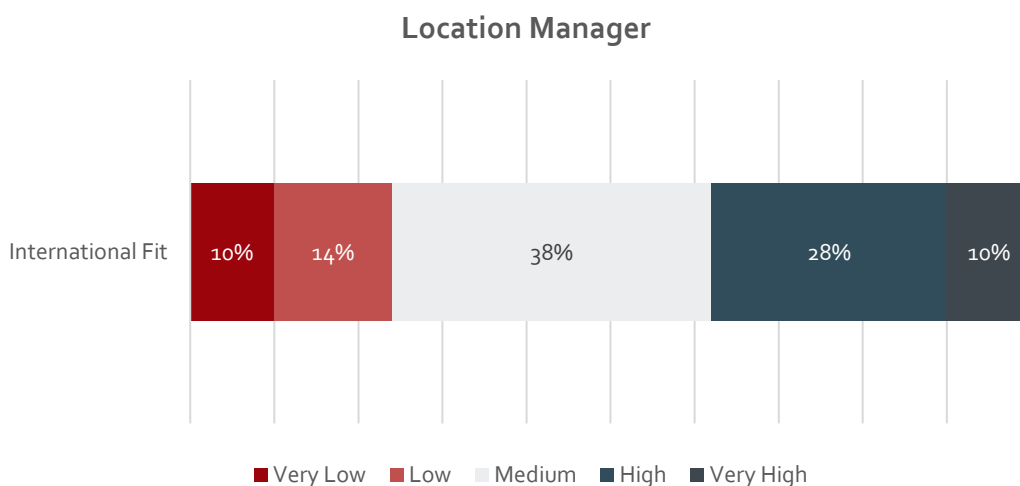
Once filming has started, location managers manage the location. They make sure everyone in the cast and crew knows how to get there. They negotiate parking, noise reduction, power

sources, catering requirements and any official permissions that may be needed with the site’s management or owner. After the shoot, they make sure that the location is cleaned and locked up, before returning it to its owners in a satisfactory condition. Any damage must be reported to the production office and any insurance claims dealt with.

The study survey found that three-quarters (76%) of respondents rated the current capacity of location managers as either ‘medium’ or ‘high’. Furthermore, the current offer is seen as having reasonable fit for international production, with two-thirds (66%) of survey respondents reported the fit as ‘medium’ or ‘high’ (Figure 47).

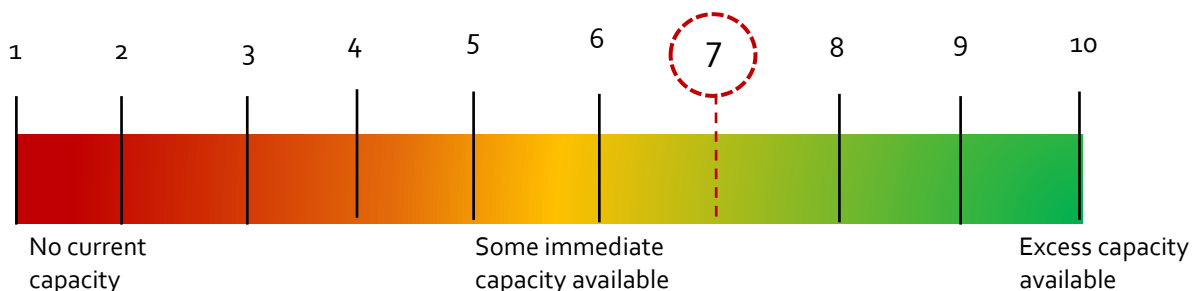
Investment in this role and the sponsorship of location tours for potential inward productions will also enable the production sector to spread further across Greater São Paulo and generate wider economic and social impact to other parts of the region, rather than just in the City of São Paulo hub.

Figure 47 How do you Rate São Paulo’s Location Managers Based on their Fit for International Productions?



Based on desk research, consultations and survey results, the gauge for current capacity has been set at seven (Figure 48), indicating notable immediate capacity available.

Figure 48 Location Manager Gauge Based on their Current Capacity



4.7. Post-Production Crew

4.7.1. Visual Effects Technician

Visual effects (VFX) technicians work with different kinds of digital editing technology that allows them to manipulate analogue film or digital video. They work with directors and visual effects supervisors to bring storyboards to life using special effects. VFX allows filmmakers to create environments, objects, creatures, and even people that would otherwise be impractical or impossible to film in the context of a live action shot.

Three-quarters (76%) of the survey respondents reported 'high' or 'medium' current capacity for VFX technicians in Greater São Paulo, and as shown in Figure 50, 60% indicated a 'low' or 'medium' rating of Greater São Paulo's VFX technicians based on their fit for international productions. In the forementioned IDB report, this role was scored number one in the top ten roles currently in shortest supply, and number two as likely to be in higher demand in 2024, which is especially relevant for international productions, which is consistent with the above relatively low score for international fit.

During the consultations, concern was expressed about future post-production crew capacity, as demand is increasing, in the words of one producer:

"We'll need support for...post-production, VFX supervisors, colourists, etc., we're not forming people at the same time as the demand is growing, we need to find a way to do what we were doing in one year in 3 months."

Another consultee highlighted that in their experience, the VFX professionals based in São Paulo are not working at international standards and this is a specific factor limiting the industry's potential, as visual effects have a huge impact on overall production value.

Capacity problems do tend to manifest more notably in post-production crew roles, as these roles require greater technical knowledge and education as well as more consistent upskilling. However, growing consumer demand for higher quality graphics and visual effects has been driving territories around the globe to make specific interventions implementing strategies to grow training opportunities for VFX, VR, gaming, and animation technicians.

It is widely recognized that these roles require greater investment, in terms of education and equipment, but have a high potential of generating significant returns on investment by contributing towards content likely to perform well in international markets.

Based on an awareness of the global context combined with the cautionary remarks of consultees and survey results, the gauge for current capacity has been set at five (Figure 49), indicating some immediate capacity available.

Figure 49 Visual Effects Technician Gauge Based on their Current Capacity

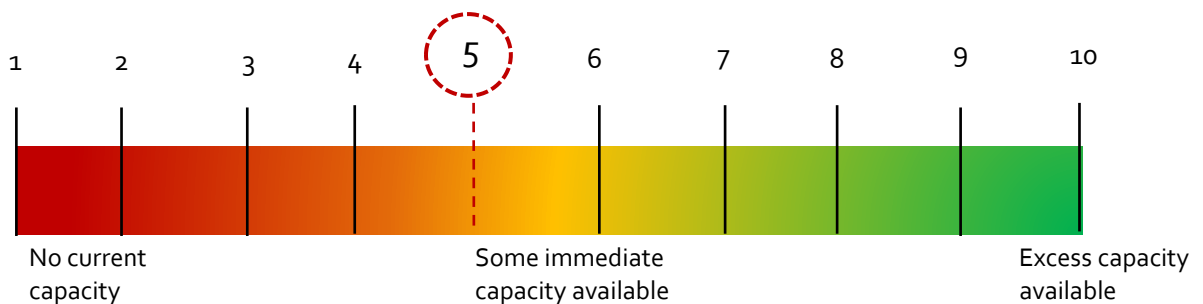
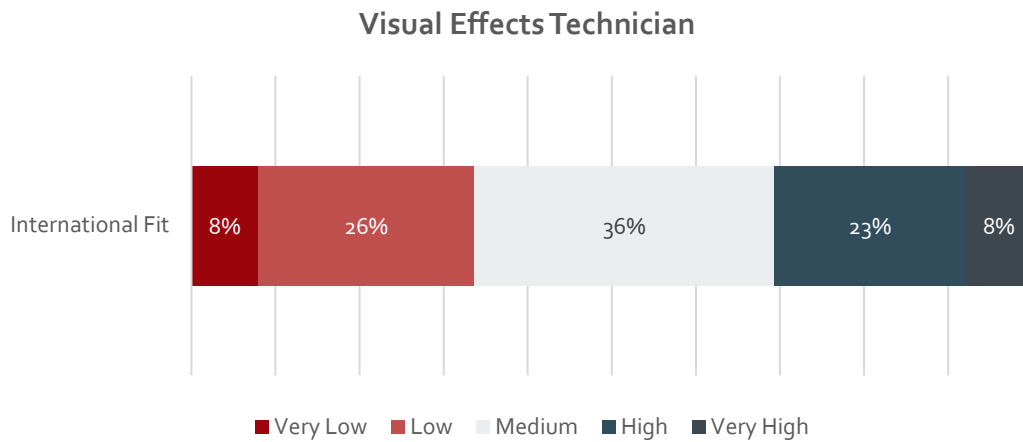


Figure 50 How do you Rate São Paulo’s Visual Effects Technicians Based on their Fit for International Productions?



4.7.2. Sound Designer

Sound designers edit the chosen sounds and, using timecodes given to them by the director, add into the film. They are involved in specifying, acquiring, or creating auditory elements using audio production techniques and tools. This work often requires searching through commercial audio libraries to find the right sounds for a project, or, when the right sounds cannot be found or licensed, recording sounds in the studio.

Three-quarters (74%) of the survey respondents reported 'high' or 'medium' current capacity for sound designer in Greater São Paulo, and as shown in Figure 52, over two-thirds (69%) indicated a 'high' or 'medium' rating of Greater São Paulo’s sound designers for their fit for international productions.

As mentioned, in the post-production department, even the lowest roles are highly technical and specialised, which slows the rate of new entrants into the workforce. This issue is exacerbated in the case of sound designer as the demand for more sophisticated soundtracks is growing. The move to digital as part of technological change in the industry is also driving skill gaps and skills shortages in this field as in other technical roles across many postproduction activities. In addition, high-skilled positions, including sound designer, typically require substantial on-the-job experience. Consultees noted that such senior positions are difficult to fill, and can't be trained up overnight, placing further strain on the department as production continues and these capacity issues are further amplified. This phenomenon highlights the challenges the industry faces around so-called "progression" or career advancement within the film and screen industries, which is particularly problematic in freelance production and post-production.

Based on desk research, consultations and survey results, the gauge for current capacity of has been set at seven (Figure 51), indicating notable immediate capacity available.

Figure 51 Sound Designer Gauge Based on their Current Capacity

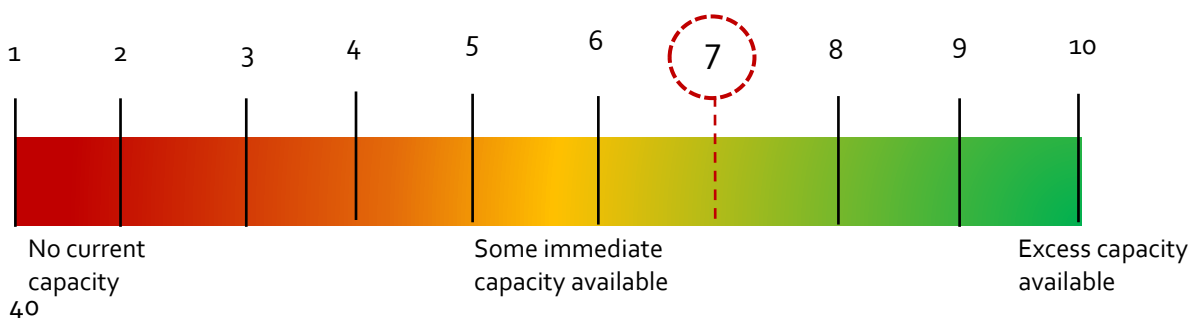
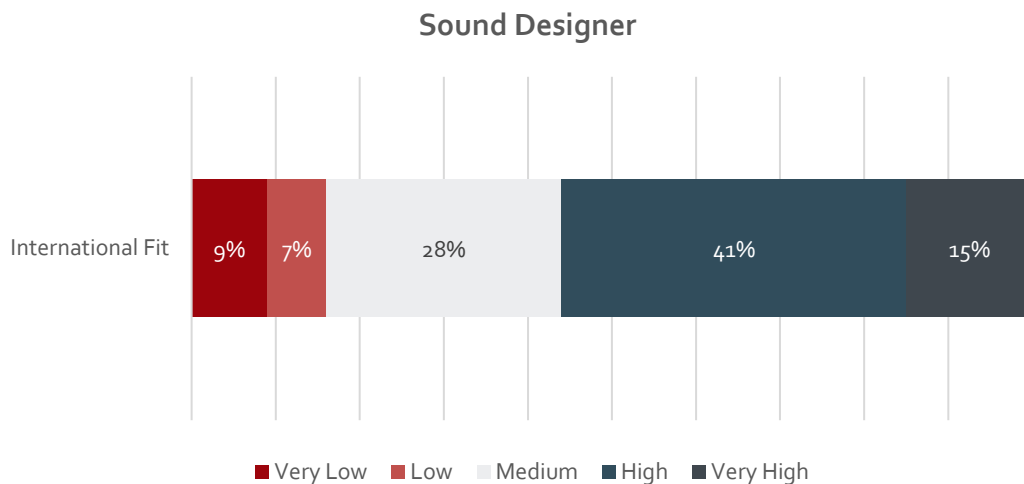


Figure 52 How do you Rate São Paulo’s Sound Designer Based on their Fit for International Productions?



4.7.3. Special Effects Coordinator

A special effects coordinator — also known as a special effects supervisor, SFX supervisor, SFX coordinator, or FX coordinator — designs and executes the mechanical or manual special effects that are done on set during production for film, TV, and other types of video production. This role specifically involves the design, creation, and operation of on-set mechanical, electrical, artificial, and explosive effects throughout a production.

Just over half (54%) of the survey respondents reported ‘medium’ or ‘low’ current capacity for special effects coordinator in Greater São Paulo, and as shown in Figure 54, the same proportion (54%) indicated a ‘very low’ or ‘low’ rating of Greater São Paulo’s special effects coordinators based on their fit for international productions. These relatively low scores for both categories reflect the current high demand for this position according to the above-mentioned IDB report in which special effects manager is rated number one among the top ten BTL roles currently in shortest supply, and number two in the top ten BTL roles likely to be in higher demand in 2024 in Latin America and the Caribbean.

Based on desk research, consultations and survey results, the gauge for current capacity has been set at four (Figure 53), indicating little current capacity available.

Figure 53 Special Effects Coordinator Gauge Based on their Current Capacity

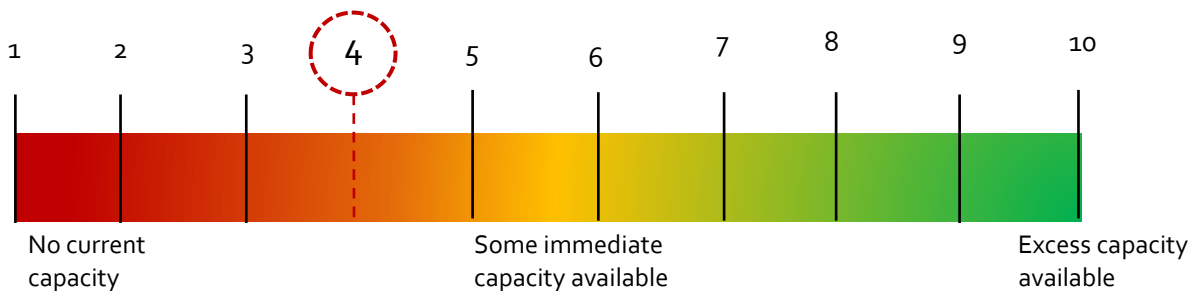
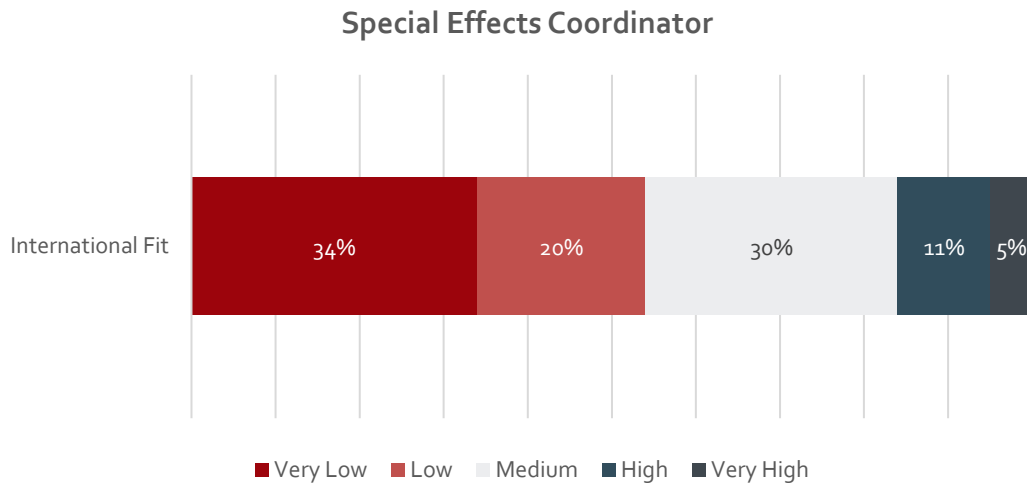


Figure 54 How do you Rate São Paulo’s Special Effects Coordinator Based on their Fit for International Productions?



4.8. Stunts Department

4.8.1. Stunt Coordinator

The stunt coordinator is responsible for planning and overseeing any scenes that involve potentially dangerous highly skilled movements on sets. They choreograph complex movements, cast stunt professionals with the appropriate skills and appearance to perform the stunt, and ensure the action looks realistic.

Capacity constraints tend to be prevalent across stunts and special effects roles in several territories. The study survey found that this is the case also in Greater São Paulo, with half (52%) of respondents having rated the current capacity of stunt coordinators as either 'very low' or 'low'.

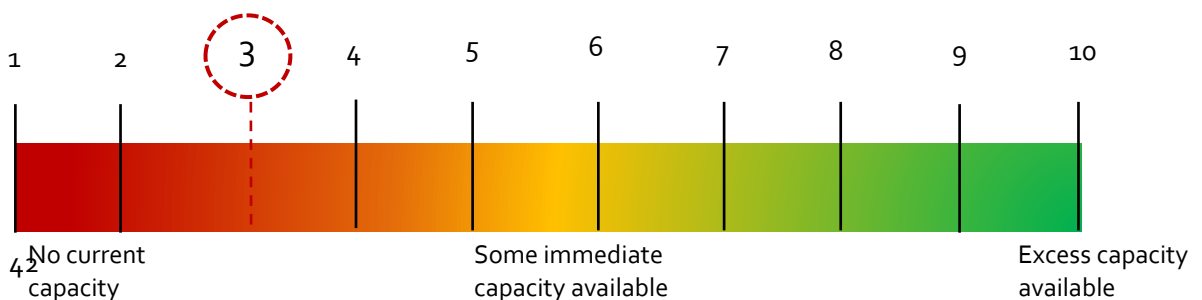
Those working within these positions were largely seen as not being capable of working on inward international productions, with the majority (62%) of respondents rating this role as either 'very low' or 'low' for international fit (Figure 56).

To consistently attract inward production, it is essential to invest in training Stunts Department professionals. This is not only for overall safety reasons, but also because international productions of scale will usually have a demand for stunts professionals.

Not having to bring professionals from abroad to film in Greater São Paulo would undoubtedly make the location more attractive as a filming destination. Additionally, a strong base of stunts professionals would allow the local industry to produce more diverse audiovisual content.

Considering this, the overall capacity gauge score for stunt coordinator is three (Figure 55), indicating little current capacity available.

Figure 55 Stunt Coordinator Gauge Based on their Current Capacity

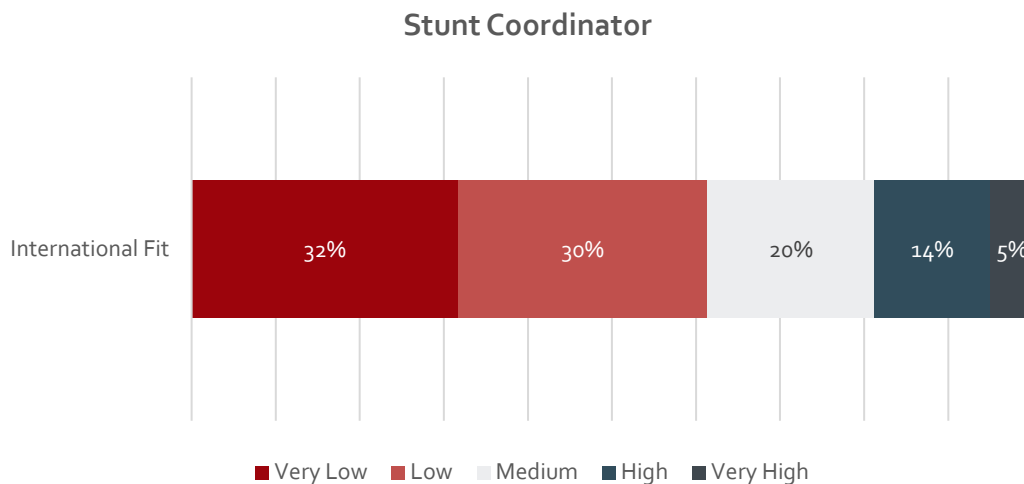


42
No current capacity

Some immediate capacity available

Excess capacity available

Figure 56 How do you Rate São Paulo’s Stunt Coordinators Based on their Fit for International Productions?



4.9. Conclusions

As with production infrastructure and services, based on the survey results, desk research and consultations, Greater São Paulo offers certain strengths and weaknesses in key areas of below-the-line workforce skills, capacity and fit for inward international productions.

There were issues within the Director and Script Department in general. The pace and demand of audiovisual content production has meant that it is not possible to provide suitable on the job or vocational training for key below-the-line roles. Instead, relatively inexperienced below-the-line crew are being quickly elevated to key strategic executive roles, which they are unable to fulfil to a high or suitable standard. This has had a negative impact on both the quality of the productions and the perceived professionalism of the sector to more experienced inward productions executives.

That said, there were notable strengths within first assistant director, script supervisor, director of photography, art director roles. The key notable weaknesses were within greensperson, special effects coordinator, stunt coordinator roles.

As mentioned above, while the economic benefits of attracting more and larger international productions are highly desirable, within a context of capacity constraint there is a risk of cost inflation affecting local productions more adversely. It is to be expected that international productions with high-budget content will seek the most competent local professionals and crews, this trend may be at the expense of low-budget national productions, causing supply chain shortages in general.

Additionally, when production levels and spend in a territory are not competitive in a manner that reflects the global context of production deluge, there is a risk of the most competent local professionals migrating to other markets for better employment opportunities. This loss of talent limits a local film industry’s potential. This trend is an additional motive for preparing BTL training programs which will produce qualified professionals to meet the demand of both international and national productions.

With the current expansion of the audiovisual content production sector, primarily attributed to the boom in demand by online platforms, specific roles are seeing growing demand and

transformation and in Greater São Paulo, especially in second semester 2021 as production emerges from the effects of the COVID-19 pandemic. BTL workforce is close or at full capacity in the majority of those roles and BTL training programs are required now to ensure that Greater São Paulo is properly positioned to meet the production demands.

A robust workforce of skilled production crews is currently one of Greater São Paulo's weaknesses. Going forward, it is crucial that the workforce continues to grow in line with the industry's needs.

5. APPENDIX

5.1. Details of ISS Tax

Prior to the recent change in November 2021, the service tax (ISS) on the audiovisual sector was the highest in the municipality of São Paulo for both distribution and production, and service providers (5% in both). In all other municipalities within the scope of this study the rate is 2% on production and service providers. In November 2021 the ISS structure for the municipality of São Paulo lowered the tax from 5% to 2.0%, according to Law nº 17.719. This change is expected to become a major factor in making the municipality of São Paulo more competitive within Brazil and internationally, and should be taken into consideration by production accounting services, since it will eliminate the relative disadvantage of the City for both international and national producers considering locations for production activities. Specifically, this new scenario is an important factor for the medium and long-term planning of industry development, since now the varying levels of the ISS tax across different municipalities in Greater São Paulo will no longer deter or slow investment decisions by international producers seeking to establish production infrastructure in the area.

5.2. Remaining PICA Capacity Gauges

5.2.1. Production Facilities

Figure 57 Visual Effects and Pre-Visualization Gauge Based on their Current Capacity

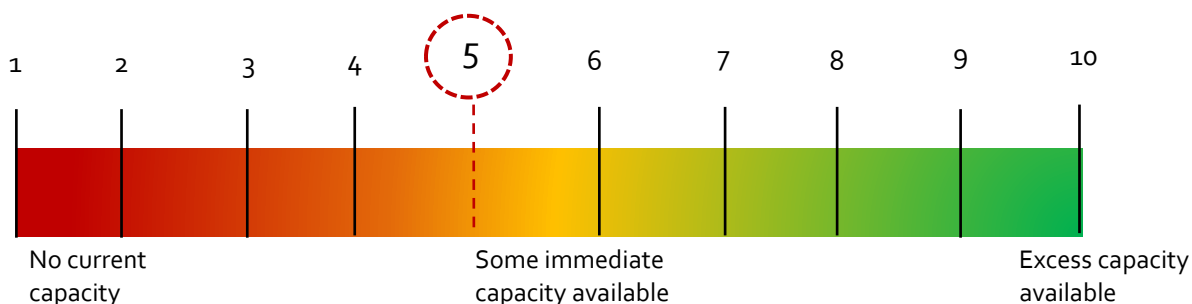


Figure 58 Workshops Gauge Based on their Current Capacity

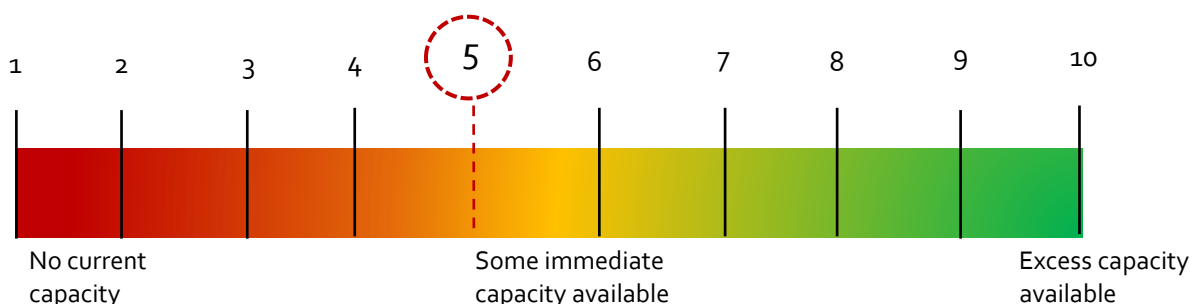
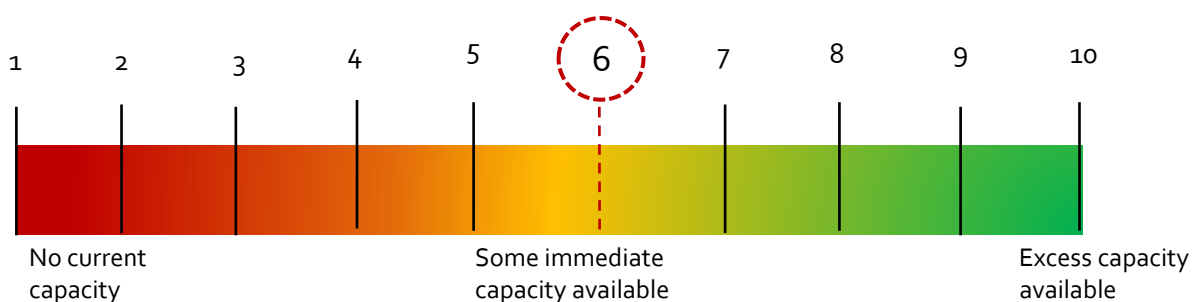


Figure 59 Green Screens (Chroma Key) Gauge Based on their Current Capacity



5.2.2. Production Equipment

Figure 60 Specialist Grip: Cranes and Tracking Gauge Based on their Current Capacity

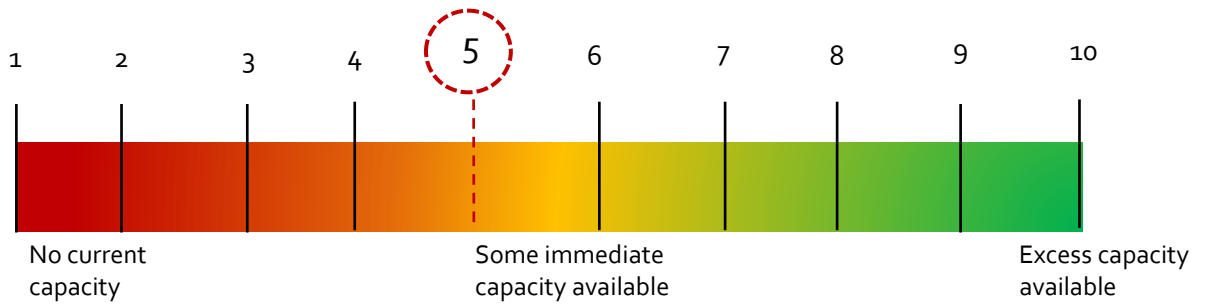


Figure 61 DIT/Archiving Gauge Based on their Current Capacity

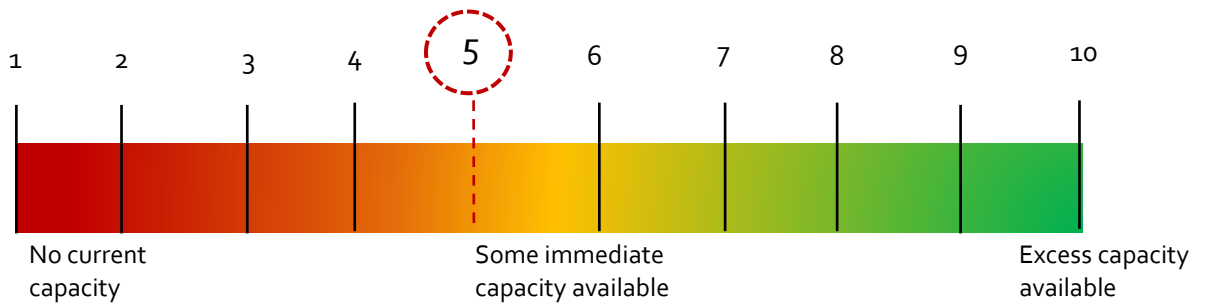
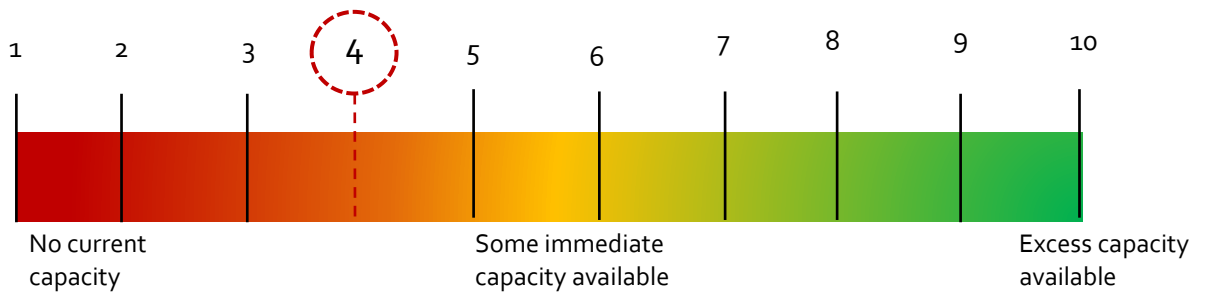


Figure 62 LED Lighting Gauge Based on their Current Capacity



5.2.3. Production Services

Figure 63 Freight and Shipping Gauge Based on their Current Capacity

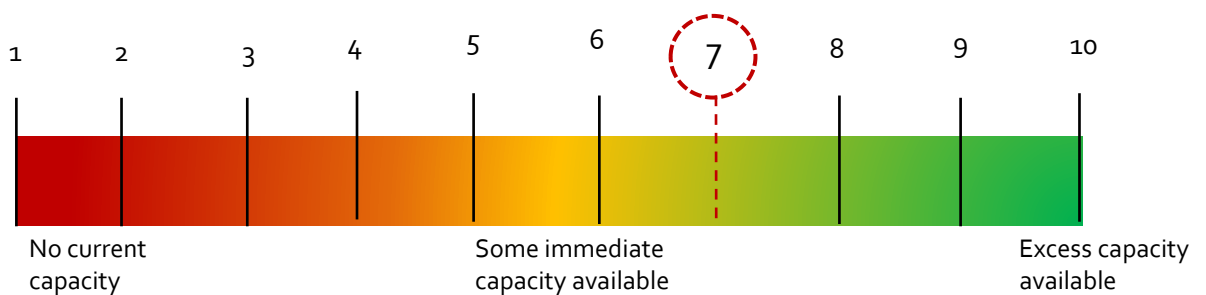
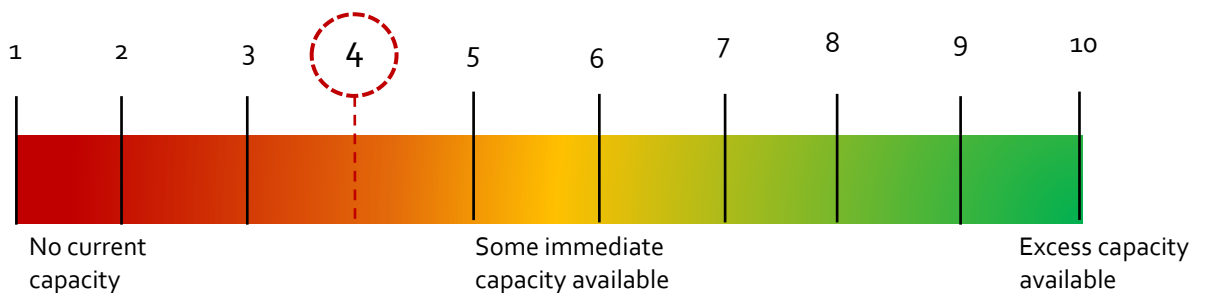


Figure 64 Payroll Processing Gauge Based on their Current Capacity



5.2.4. Art and Production Design

Figure 65 Set Dresser/Decorator Gauge Based on their Current Capacity

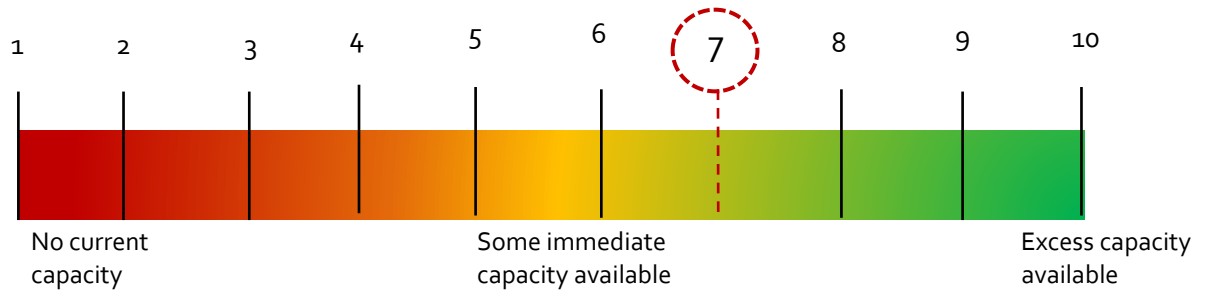
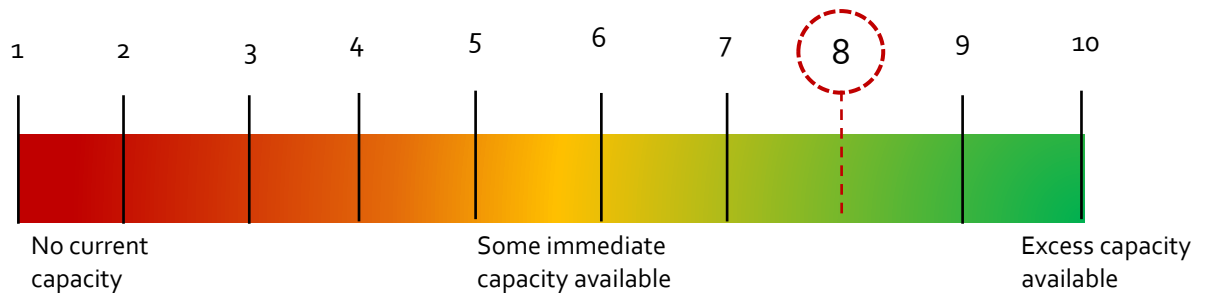


Figure 66 Art Department Coordinator Gauge Based on their Current Capacity



5.2.5. Camera, Grip and Electric

Figure 67 Steadicam Gauge Based on their Current Capacity

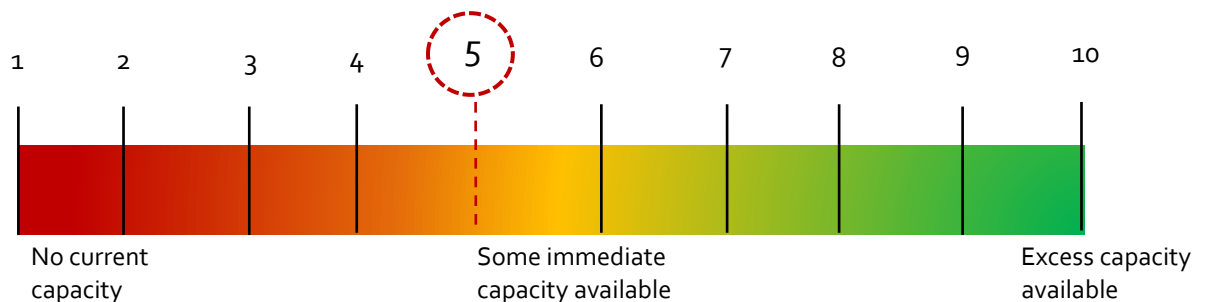


Figure 68 Electrician Gauge Based on their Current Capacity

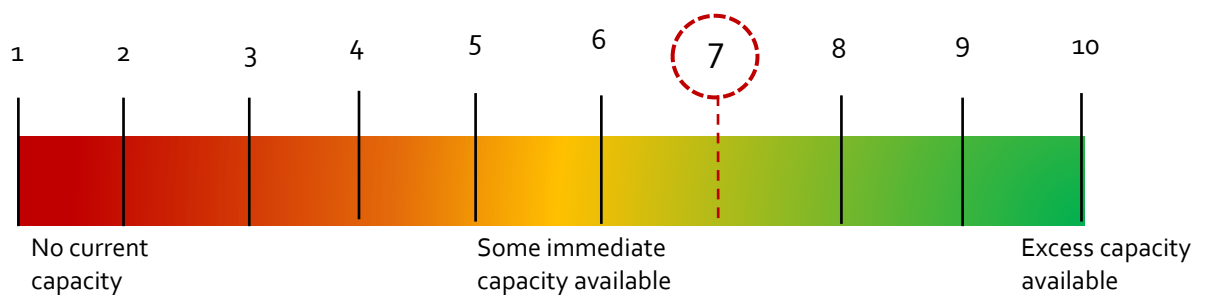


Figure 69 Sound Technician Gauge Based on their Current Capacity

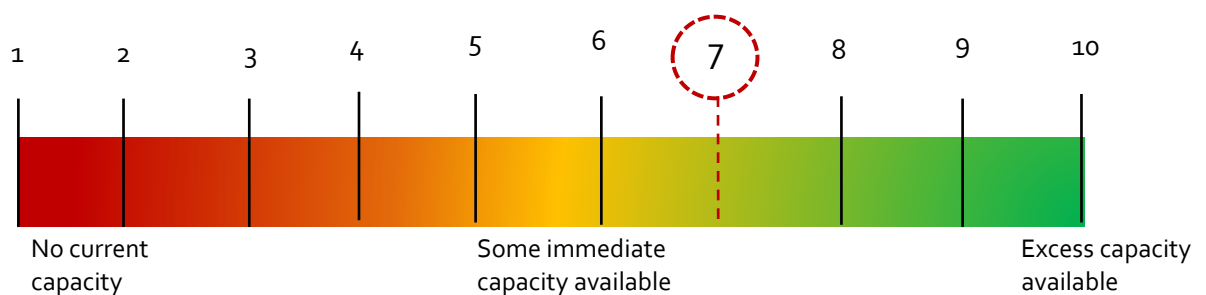


Figure 70 Aerial Pilot Gauge Based on their Current Capacity



5.2.6. Construction

Figure 71 Carpenter Gauge Based on their Current Capacity



Figure 72 Plasterer Gauge Based on their Current Capacity

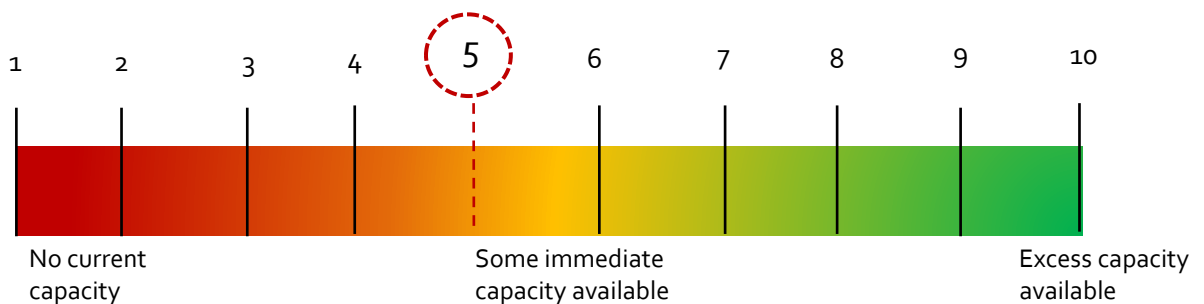
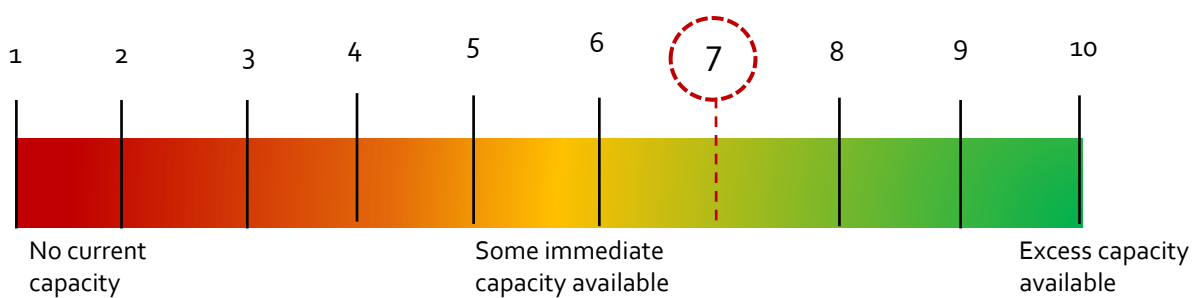


Figure 73 Painter Gauge Based on their Current Capacity



5.2.7. Costume and Wardrobe

Figure 74 Costume Designer Gauge Based on their Current Capacity

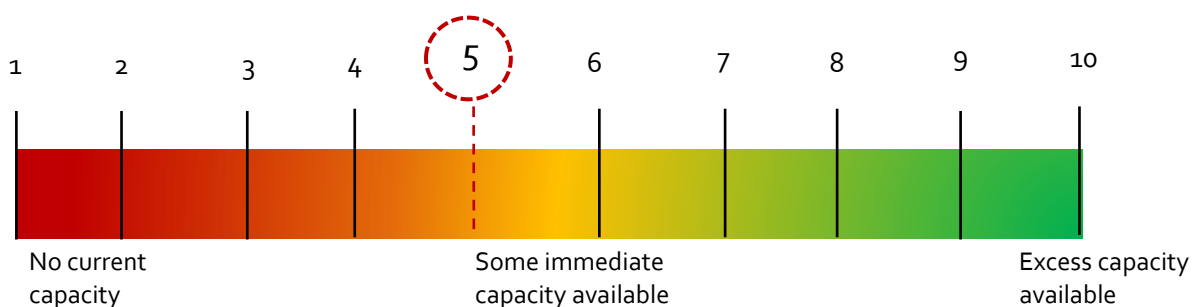


Figure 75 Costume Supervisor Gauge Based on their Current Capacity

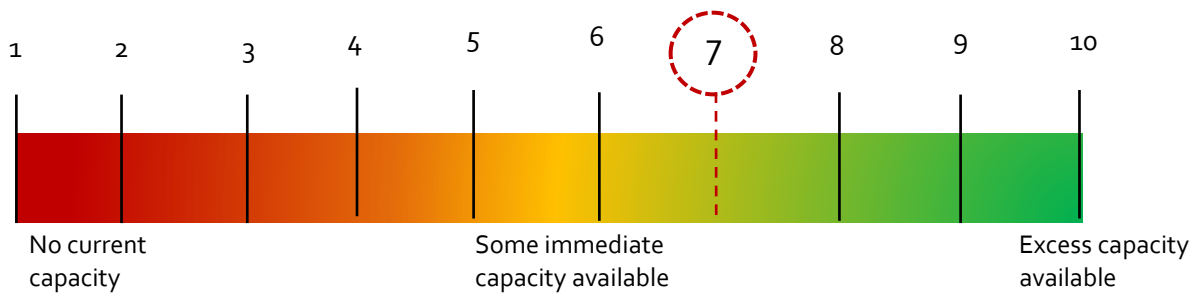
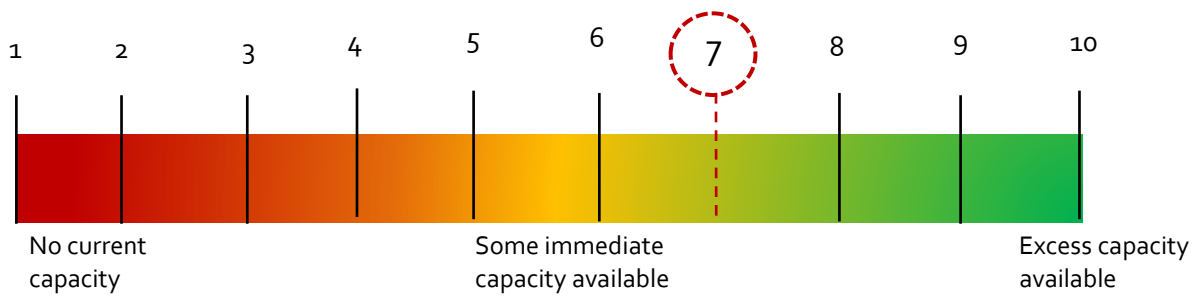
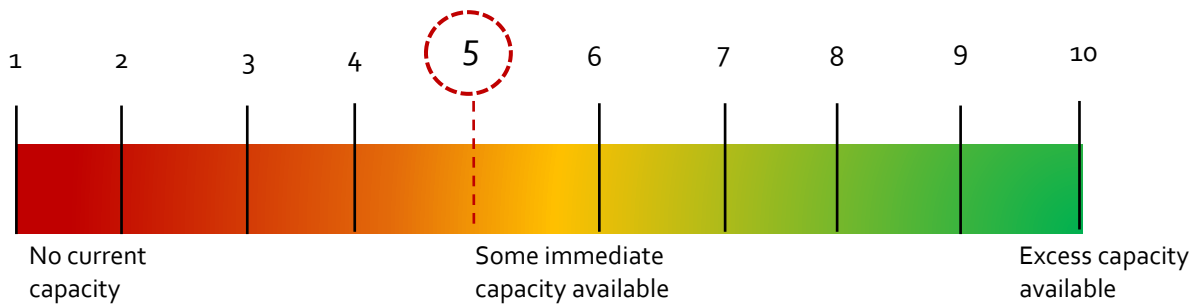


Figure 76 Costume Manufacturer Gauge Based on their Current Capacity



5.2.8. Locations Crew

Figure 77 Location Scout Gauge Based on their Current Capacity



5.2.9. Hair and Makeup

Figure 78 Hairdresser Gauge Based on their Current Capacity

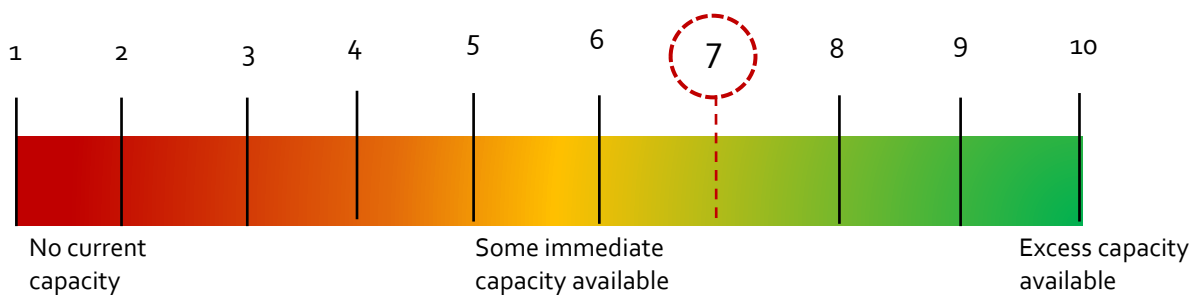


Figure 79 Makeup Artist Gauge Based on their Current Capacity

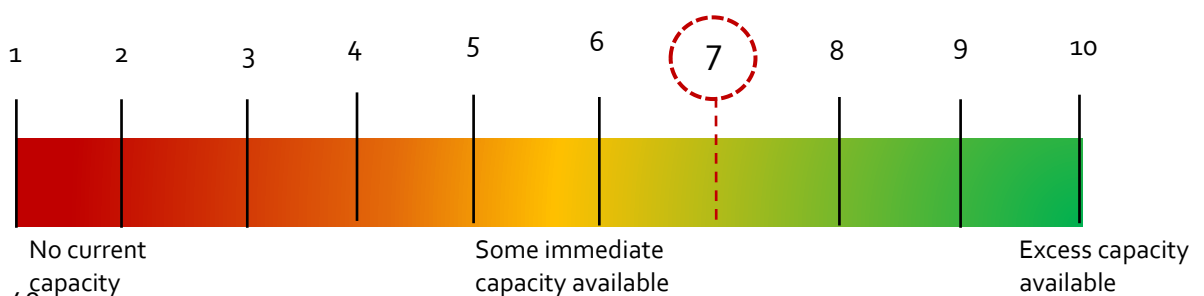


Figure 80 Special Effects Hair Gauge Based on their Current Capacity

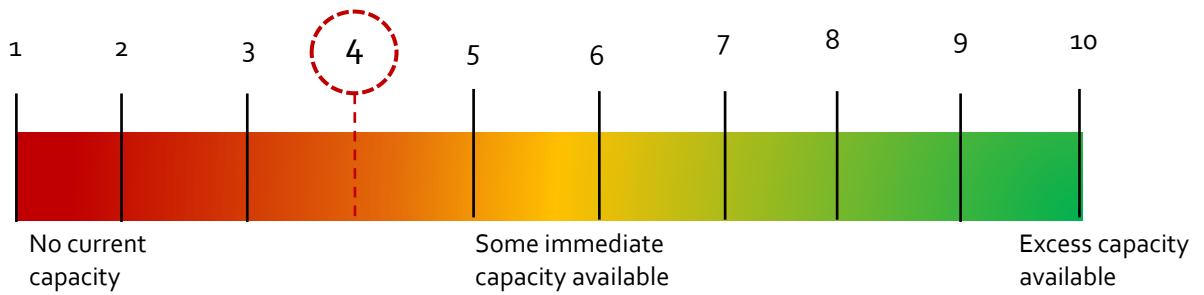
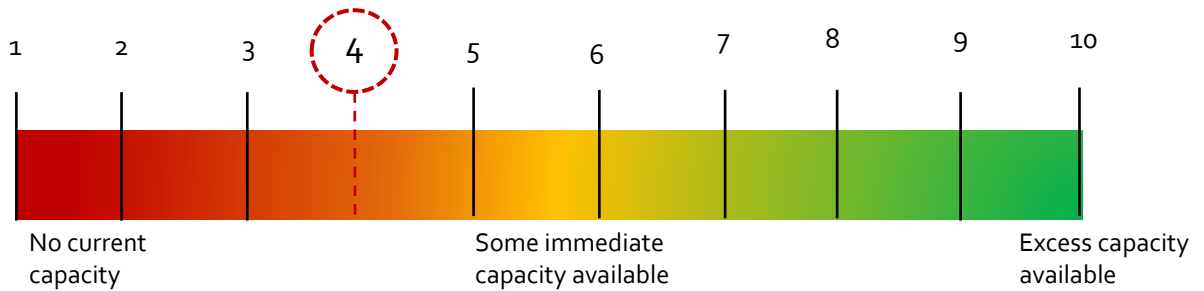


Figure 81 Prosthetics Gauge Based on their Current Capacity



5.2.10. Location, Unit and Transport

Figure 82 Unit Manager Gauge Based on their Current Capacity

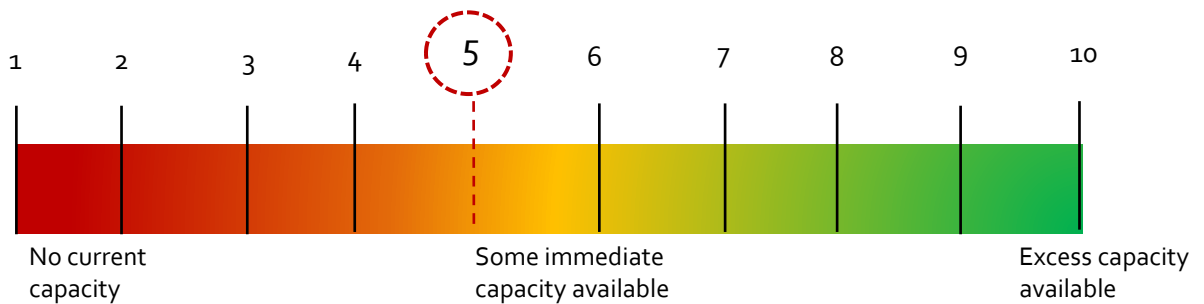
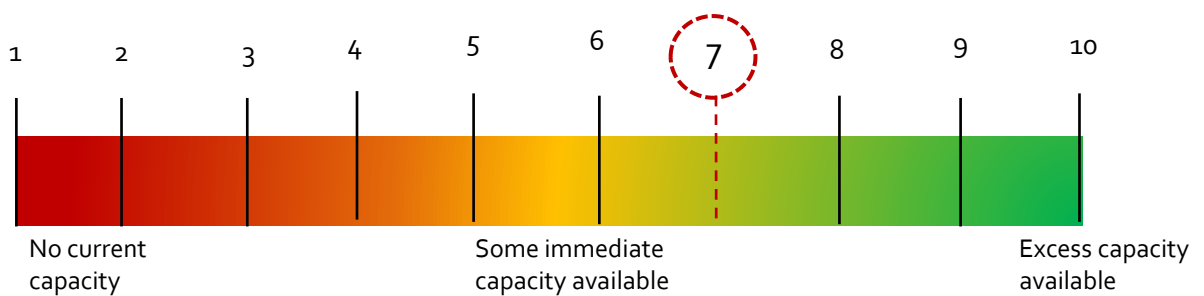


Figure 83 Caterer Gauge Based on their Current Capacity



5.2.11. Production Office

Figure 84 Line Producer Gauge Based on their Current Capacity

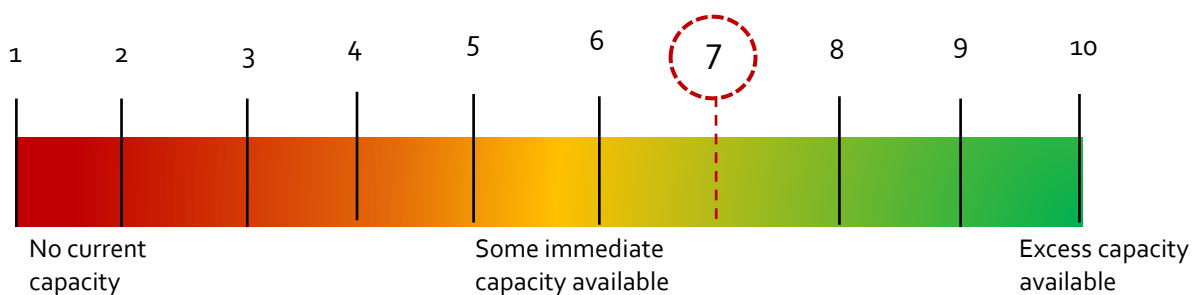
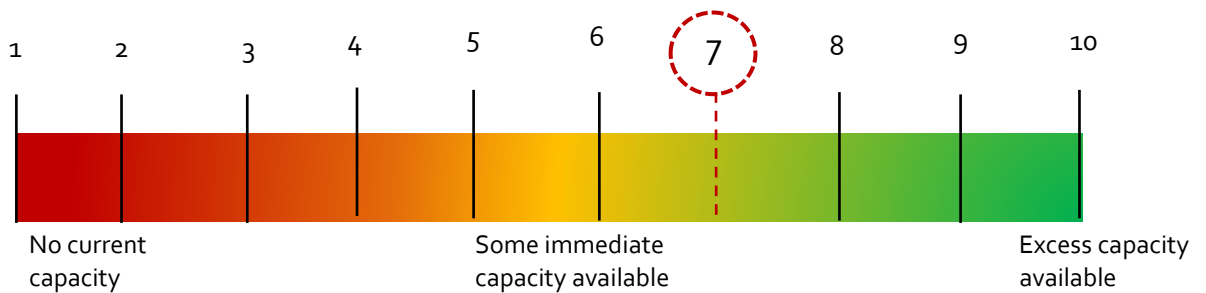


Figure 85 Production Accountant Gauge Based on their Current Capacity



Figure 86 Production Coordinator Gauge Based on their Current Capacity



5.2.12. Post-Production

Figure 87 Visual Effects Supervisor Gauge Based on their Current Capacity

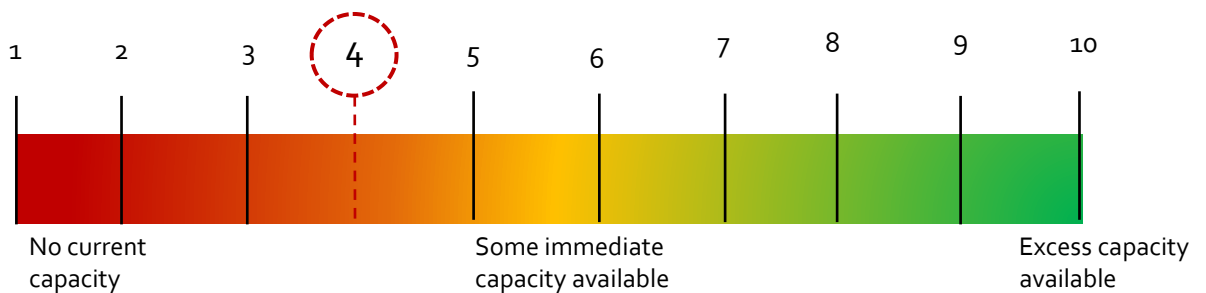


Figure 88 Visual Effects Producer Gauge Based on their Current Capacity

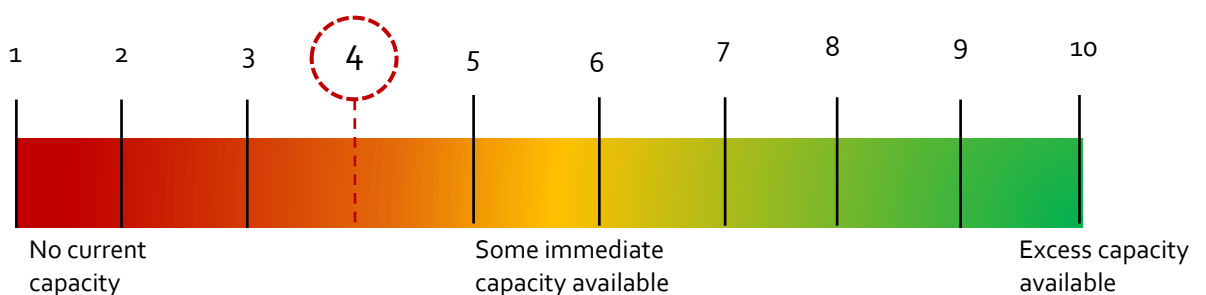


Figure 89 Editor Gauge Based on their Current Capacity

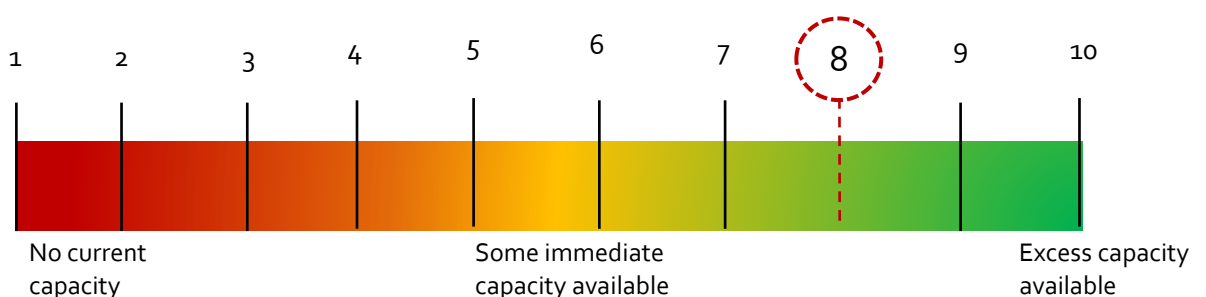


Figure 90 Music Editor Gauge Based on their Current Capacity

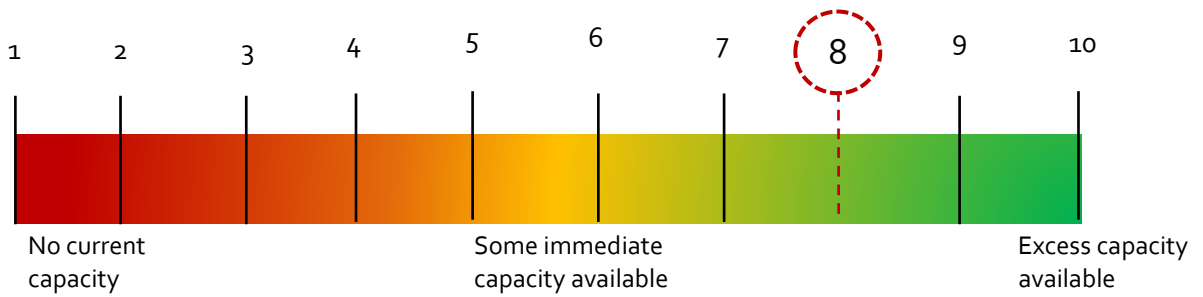


Figure 91 Sound Editor Gauge Based on their Current Capacity

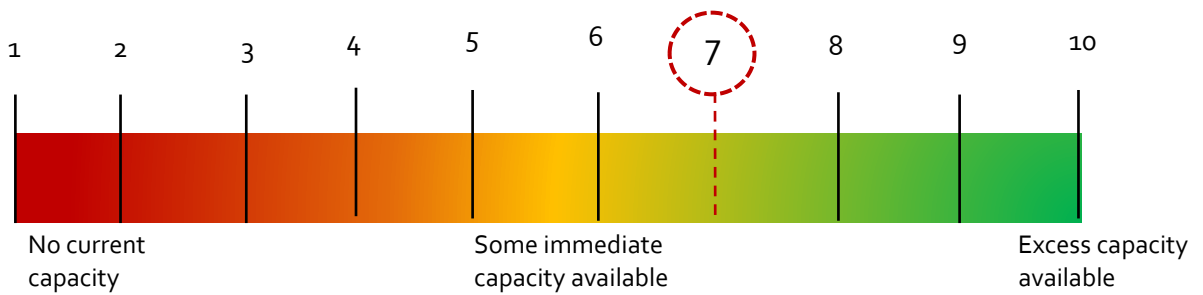


Figure 92 Sound Mixer Gauge Based on their Current Capacity

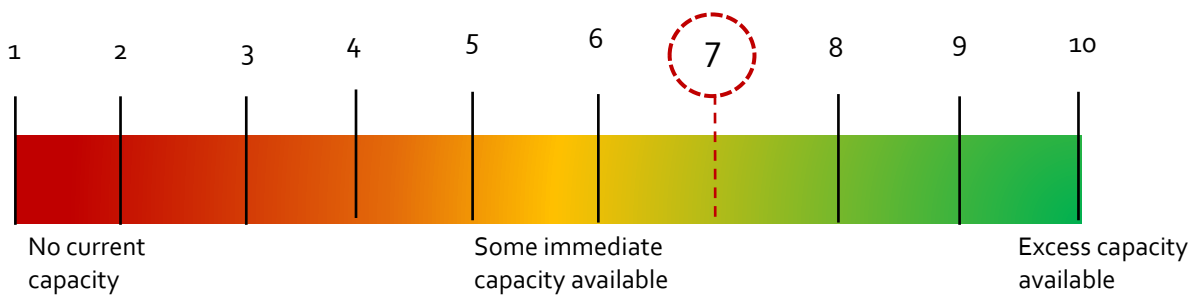


Figure 93 Music Supervisor Gauge Based on their Current Capacity

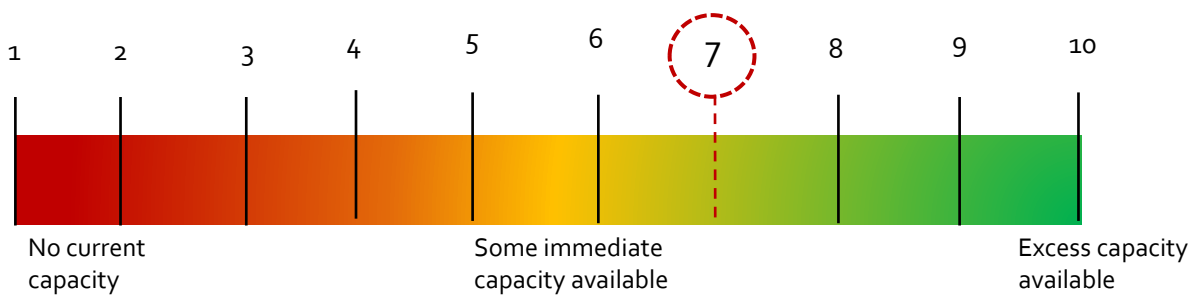
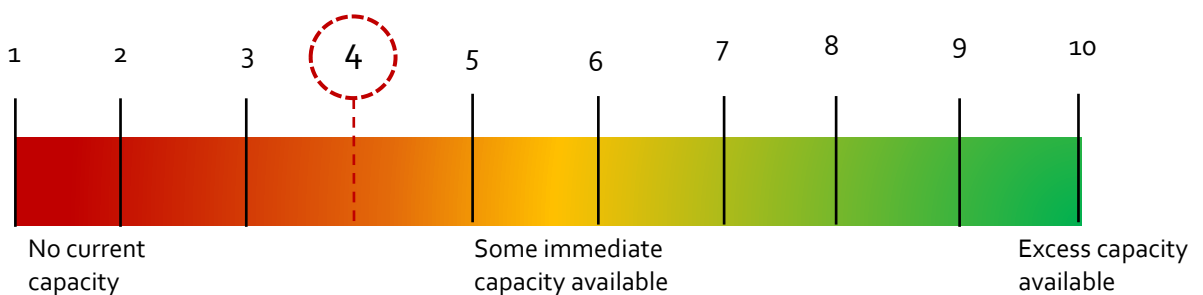


Figure 94 Visual Effects Animator Gauge Based on their Current Capacity



5.2.13. Stunts and Special Effects

Figure 95 Stunt Performer Gauge Based on their Current Capacity

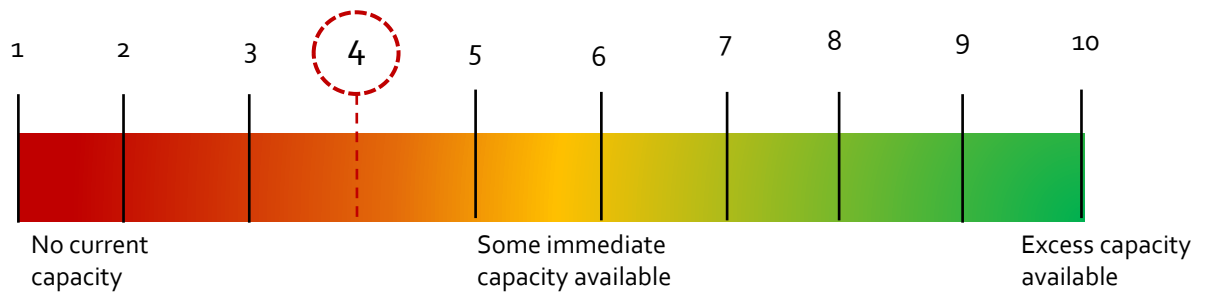


Figure 96 Special Effects Technician Gauge Based on their Current Capacity

