

RESEARCH & BEST PRACTICE REPORT

ON BMX FREESTYLE TRAINING METHODOLOGY

Combined findings of the VR Freestyle field research survey (T2.1) and the five-country Best Practice Exchange (T2.2), establishing the empirical foundation for the VR Freestyle training platform and blended coaching curriculum.

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INTRODUCTION TO VR FREESTYLE PROJECT

VR Freestyle is a 24-month Erasmus+ Sport project (2025–2027) coordinated by Pannonian (Croatia), with four partner organisations: Elamussport Simple Session (Estonia), JB Ride (France), MSSA (Malta), and Foton (Slovenia). The project's core objective is to raise the quality and accessibility of BMX Freestyle cycling through the development of a virtual reality training platform and a blended coaching curriculum.

BMX Freestyle is a discipline with a global community but uneven institutional support across Europe. Training infrastructure, qualified coaching, and progression frameworks vary enormously by country and by region within each country. Many riders are self-taught, progression is largely informal, and the transition from beginner to competitive rider often depends on geography and access to experienced peers rather than structured coaching.

The VR Freestyle project addresses this gap through two intellectual outputs:

- A VR platform enabling riders and coaches to plan sessions, rehearse tricks, and explore 3D-scanned versions of all five partner skate parks before riding them in real life.
- A blended training programme combining virtual simulation with on-bike instruction, designed for coaches, newcomers, and competitive athletes alike.

This report establishes the empirical and contextual foundation for both. It presents the combined results of the research phase of the VR Freestyle project, which was carried out through two parallel streams:

- **T2.1 Field Research** — a structured questionnaire distributed across all five partner countries and the wider global BMX community, gathering responses on riding habits, training access, coaching quality, barriers to participation, and openness to technology-assisted training.
- **T2.2 Best Practice Exchange** — a desk-research and partner-knowledge exchange phase, collecting existing documentation, coaching frameworks, and contextual information from each partner country's BMX ecosystem.

The five headline findings of the comprehensive combined research report on BMX Freestyle training methodology are:

FIVE HEADLINE FINDINGS

- 1 Coaching access is severely limited.** 59.5% of respondents have received no formal coaching. The primary learning method is self-teaching or peer learning, not structured instruction.
- 2 Fear of injury is the single greatest psychological barrier to progression,** cited by approximately 68.4% of all respondents as their primary mental challenge — above burnout, loss of motivation, or social pressure.
- 3 Infrastructure and seasonality are the dominant external constraints.** Lack of facilities, poor park quality, and seasonal weather limitations are cited consistently across all five partner countries.
- 4 There is valid appetite for VR and technology-assisted training.** 31.6% of respondents specifically selected the VR-supported training option, with Spins, Tailwhips, and Flair/Vert tricks identified as the most suitable trick categories for virtual rehearsal.
- 5 BMX is experienced as moderately to highly difficult.** The average self-rated difficulty was 3.67 out of 5, with the transition phase of timing and coordination identified as the hardest part of learning a new trick.

These findings directly inform the design of the VR Freestyle platform and the blended BMX VR training programme.

METHODOLOGY

The field research questionnaire was designed collaboratively by all five partner organisations. The purpose of the survey was to investigate the demographic profile, training habits, coaching experiences, perceived challenges, safety perceptions, and attitudes toward innovative learning methods among BMX Freestyle participants.

Data were collected through an online questionnaire developed using Google Forms and consisted of 41 questions organised into five thematic blocks: (i) consent and data protection, (ii) basic background and sport-specific background, (iii) training engagement and progression factors, (iv) coaching and progression needs, and (v) safety perception and training support needs. The survey was distributed internationally through BMX clubs, national federations, coaches, riders, and project partners. Participation was voluntary, anonymous, and required explicit consent to the project's data protection policy in line with the EU General Data Protection Regulation (GDPR). The survey collected limited personal data (age group, country of residence, gender, and BMX background); responses were processed anonymously for research and training-methodology development purposes, and results are presented here in aggregated form only.

The questionnaire consisted of single-select (multiple-choice) or multi-select (checkbox) formats, Likert-scale items and a small number of optional open-ended questions that allowed respondents to elaborate on specific difficulties. It covered several thematic areas, including:

- participant characteristics and riding experience;
- training frequency and coaching practices;
- physical and psychological barriers to progression;
- accessibility of BMX Freestyle;
- perceptions of safety and injury risk;
- learning preferences;
- interest in virtual reality (VR) and digital training tools.

A total of 301 valid responses were collected: 222 responses (74%) came from the five partner countries (HR, EE, FR, MT, SI), 79 responses (26%) came from the wider international BMX community.

The desk research is based on the Best Practice Exchange templates completed by partner organisations in France, Croatia, Slovenia, Malta and Estonia. The templates collect information on the organisational context of each partner, the BMX Freestyle structure in each country, and examples of best practices and their transferability.

PART ONE

BMX FREESTYLE SKILL AND TRAINING METHODOLOGY SURVEY

Field research (T2.1): a structured questionnaire distributed across all five partner countries and the wider international BMX community, examining training habits, coaching access, safety perception and attitudes toward virtual reality.



BMX FREESTYLE SKILL AND TRAINING METHODOLOGY SURVEY

SAMPLE DESCRIPTION

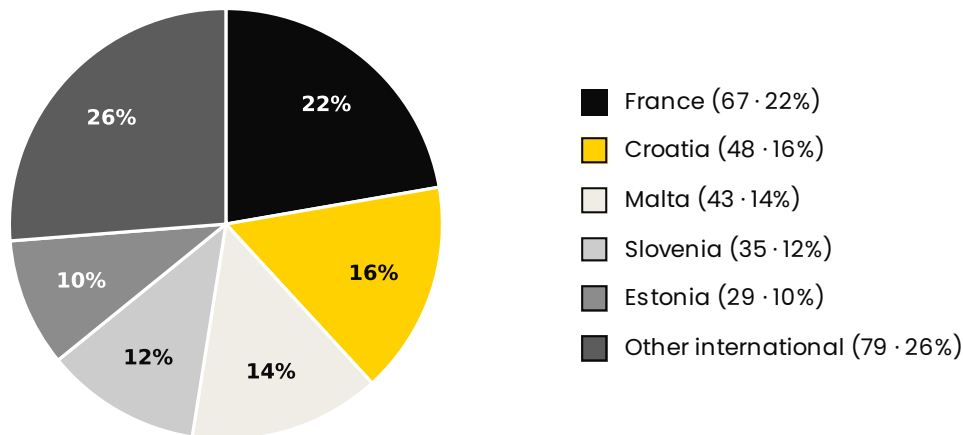
A total of 301 respondents participated in the survey. The sample represents a broad cross-section of the international BMX Freestyle community, including riders, former riders, coaches, sport professionals, parents, organisers, and other stakeholders from multiple countries.

Participants represented more than thirty countries, with the largest proportions originating from partner countries as intended, together accounting for approximately 74% of responses.

Country of residence: France 🇫🇷 67, Croatia 🇭🇷 48, Malta 🇲🇹 43, Slovenia 🇸🇮 35, Estonia 🇪🇪 29, Germany 🇩🇪 10, USA 🇺🇸 10, Latvia 🇱🇻 9, UK 🇬🇧 6, Spain 🇪🇸 5, Hungary 🇭🇺 3, Finland 🇫🇮 3, Lithuania 🇱🇹 3, Chile 🇨🇱 3, Australia 🇦🇺 3, Czech Republic 🇨🇪 2, Romania 🇷🇴 2, Netherlands 🇳🇱 2, Slovakia 🇸🇰 2, Mexico 🇲🇩 2, Serbia 🇷🇸 1, Italy 🇮🇹 1, Russia 🇷🇺 1, Colombia 🇨🇴 1, Austria 🇦🇹 1, Thailand 🇹🇭 1, Ukraine 🇺🇦 1, Switzerland 🇨🇭 1, Brasil 🇧🇷 1, Greece 🇬🇷 1, Suomi 🇫🇮 1, Philippines 🇵🇭 1, Argentina 🇦🇷 1, China 🇨🇳 1.

Just over 88% of the participants are from EU countries, while the remaining nearly 12% of responses come from across the globe. Additional responses were obtained from Germany, the United States, Latvia, the United Kingdom, Spain, and several other countries, providing a geographically diverse sample suitable for exploring international perspectives on BMX Freestyle participation.

RESPONSE BREAKDOWN BY COUNTRY (N = 301)



The majority of respondents were male (88.7%), while females represented 11.3% of the sample. Participants covered a wide age range, although most belonged to the young adult and adult categories. Approximately one-third of respondents were aged 30 years or older, while another one-third were between 22 and 29 years of age. Participants aged 17–21 years accounted for approximately one-fifth of the sample.

Most respondents identified themselves primarily as active riders (69.4%), followed by sport professionals such as coaches, judges, and delegates (12.3%), parents or organisers (9.3%), and former riders (9.0%).

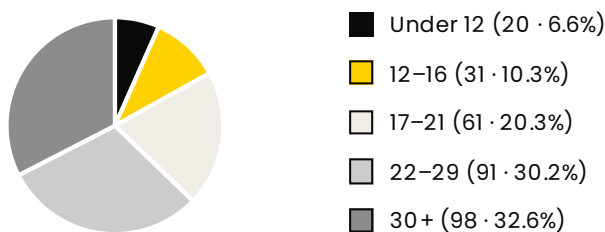
Park/Bowl riding represented the dominant BMX discipline (59.5%), followed by Street riding (33.6%). Smaller proportions specialised in Dirt/Vert (5.3%) and Flatland (1.7%).

The sample was characterised by considerable riding experience. More than half (55.5%) had been practising BMX Freestyle for more than six years, while approximately one-quarter had between one and six years of experience. Respondents also represented a broad range of riding abilities and competition involvement, from recreational participants to international competitors, providing a balanced basis for analysing perceptions, training practices, and development needs across different experience levels.

1 BASIC BACKGROUND

1.1 DEMOGRAPHIC CHARACTERISTICS

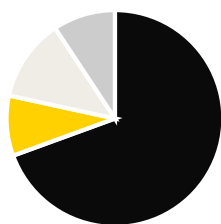
The survey demonstrates that BMX Freestyle continues to be a predominantly male sport (267 – 88.7%), although female participation is evident across multiple countries and experience levels (34 – 11.3%). The age distribution indicates a mature participant base, with adults aged 22 years and older representing more than 60% of respondents. At the same time, the presence of younger riders highlights the importance of maintaining development pathways from youth participation through elite performance.



1.2 PARTICIPANT PROFILES

Nearly seven out of every ten respondents identified themselves as active riders (209 – 69.4%), confirming that the survey primarily reflects first-hand riding experiences. The inclusion of coaches, judges, organisers, parents, and former riders broadens the perspective beyond athletes alone, allowing the findings to capture issues affecting coaching, athlete development, and organisational support.

This diversity strengthens the interpretation of later chapters, particularly those addressing coaching practices, accessibility, and athlete support systems.



- Rider (209 · 69.4%)
- Former rider (27 · 9.0%)
- Sport professional (Coach, Judge, Delegate and similar) (37 · 12.3%)
- Other (Parent, BMX event organisers and similar) (28 · 9.3%)

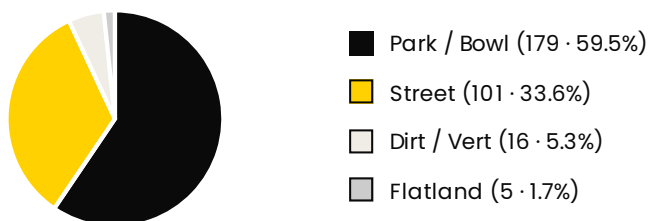
2 SPORT SPECIFIC BACKGROUND

2.1 RIDING DISCIPLINES

Park/Bowl is clearly the dominant discipline within the sample (59%), followed by Street riding (34%). Dirt/Vert and Flatland together account for less than 10% of respondents.

This distribution is consistent with current participation trends observed within international BMX Freestyle, where Olympic-format Park riding has experienced substantial growth while Street riding continues to maintain a large and active community.

The predominance of Park/Bowl riders should therefore be considered when interpreting findings related to training environments, coaching needs, and safety perceptions.



2.3 RIDING EXPERIENCE

The survey population was characterised by substantial BMX experience. More than half of respondents had been practising BMX Freestyle for over six years, indicating that the dataset contains perspectives from experienced participants.

At the same time, approximately one-quarter of respondents had between one and six years of riding experience, while a smaller proportion consisted of beginners with less than one year of practice. Respondents with no direct riding experience primarily represented supporting roles such as parents, organisers, and other stakeholders.

This broad experience profile allows comparisons between novice, intermediate, and experienced participants regarding learning barriers, coaching needs, and attitudes towards innovative training methods.



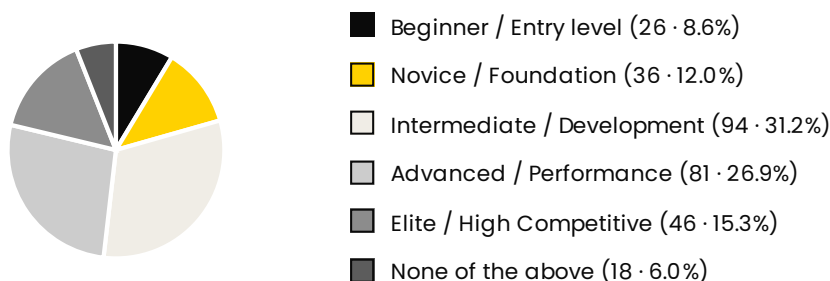
2.4 RIDING LEVEL AT PEAK OF BMX JOURNEY

The questionnaire defined five developmental levels: Beginner / Entry level – new to BMX, basic control, learning safety and fundamentals; Novice / Foundation – rides the park smoothly, performs simple airs and basic tricks, and starts linking features; Intermediate / Development – performs multiple tricks with variations and intentionally links lines; Advanced / Performance – performs high airs and advanced tricks with strong consistency under pressure; Elite / High Competitive – performs complex combinations and signature tricks with full performance support. A sixth response, None of the above, was also available for participants who are not within the riders categories.

Participants represented all stages of riding development, from complete beginners to elite competitors.

The largest proportion described themselves as Intermediate riders (31.2%), followed by Advanced riders (26.9%), while approximately one in six respondents identified as Elite or High Competitive athletes (15.3%). Beginners (8.6%) and novice (12%) riders together also represented an important segment of the sample, ensuring that perspectives from individuals at early stages of skill development were adequately represented.

The diversity of riding levels strengthens the external validity of the survey by ensuring that findings are not limited solely to highly experienced athletes.



2.5 CURRENT COMPETITION INVOLVEMENT

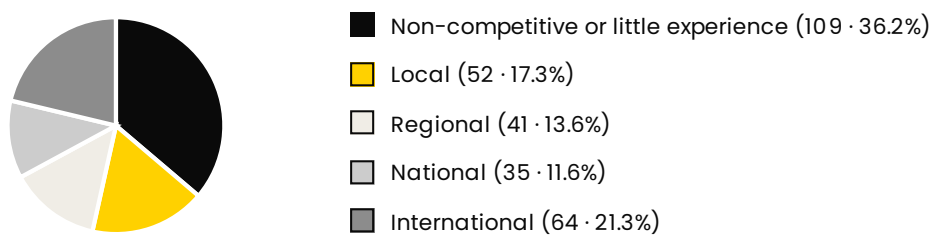
Competition participation was equally diverse. Recreational participants constituted the largest single group (36.2%), followed by riders competing at local, regional, national,

and international levels.

When grouped into broader categories, the sample consisted of:

- Recreational participants: 109 respondents (36.2%)
- Competitive participants (local and regional): 93 respondents (30.9%)
- High-performance participants (national and international): 99 respondents (32.9%)

This balanced distribution provides an excellent basis for investigating differences between recreational and competitive BMX communities.



2.6 OVERALL SPORT BACKGROUND

Taken together, the findings describe a mature and experienced BMX Freestyle community with diverse competitive backgrounds and regular engagement in the sport. Although recreational participation remains the largest segment, almost one-third of respondents compete nationally or internationally, highlighting the representation of performance-oriented athletes within the survey.

The combination of experienced riders, active competitors, coaches, and other BMX stakeholders provides a comprehensive foundation for examining the practical challenges of athlete development.

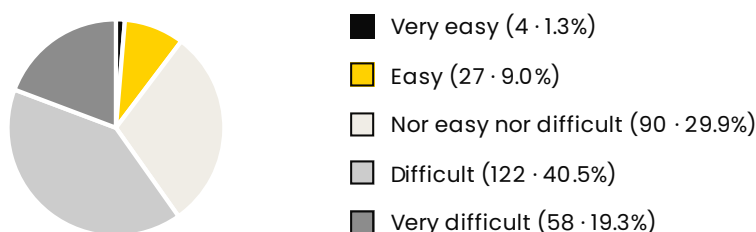
3 TRAINING ENGAGEMENT AND PROGRESSION FACTORS

3.1 PERCEIVED DIFFICULTY OF LEARNING BMX FREESTYLE

Respondents were asked to rate how difficult they believe BMX Freestyle is to learn using a five-point scale, where higher values represented greater perceived difficulty. The results indicate that BMX Freestyle is widely regarded as a technically demanding sport.

More than two-thirds of respondents rated the learning difficulty at levels 4 or 5, while only a small minority selected the lowest difficulty categories. The mean learning difficulty score was 3.67 out of 5, confirming that participants generally perceive BMX Freestyle as a challenging discipline requiring significant time, practice, and commitment to achieve proficiency.

These findings are consistent with the progressive nature of BMX Freestyle, where skill acquisition depends on mastering increasingly complex technical movements while simultaneously managing balance, coordination, speed, spatial awareness, and risk.

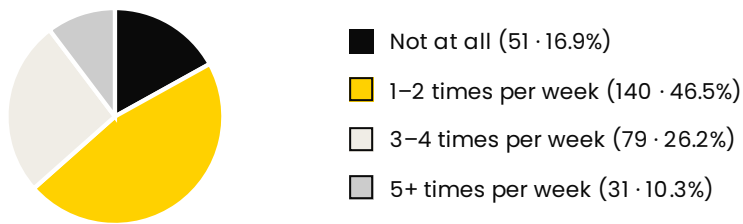


3.2 TRAINING FREQUENCY

Training frequency varied considerably across respondents, reflecting differences in age, experience, competitive involvement, and access to training facilities.

The most common training schedule was 1–2 sessions per week, reported by nearly half of all participants. Approximately one-quarter trained 3–4 times per week, while a smaller but notable proportion reported training five or more times weekly. Around one-sixth of respondents indicated that they were not currently practising, largely reflecting former riders, parents, organisers, and other non-riding stakeholders included within the sample.

Overall, the findings demonstrate that BMX participation ranges from recreational engagement to intensive high-performance training, providing an opportunity to examine how experience and competitive level influence training behaviours throughout the report.



3.3 MOTIVATION FOR CONTINUOUS DEVELOPMENT

BMX Freestyle is a discipline that requires continuous technical progression and long-term commitment. Unlike many sports where performance improvements can be achieved through repetitive practice alone, BMX athletes must progressively acquire increasingly complex tricks while simultaneously managing confidence, risk perception, physical readiness, and environmental constraints.

The survey demonstrates that motivation remains a key determinant of long-term participation. Although many respondents reported maintaining strong engagement with the sport, several motivational barriers emerged that may reduce training consistency or slow athlete progression.

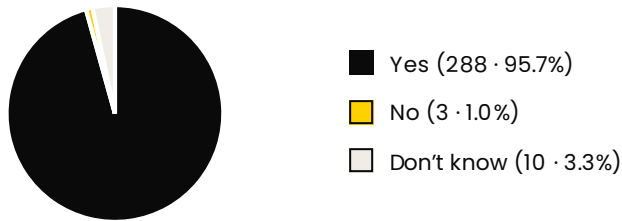
Among the most frequently reported psychological challenges were:

- fear of injury;
- reduced motivation and discipline;
- reduced enjoyment during practice;
- difficulties maintaining concentration during demanding training sessions.

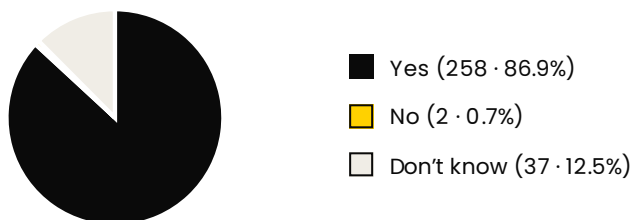
Fear of injury was consistently identified as one of the strongest psychological barriers, highlighting the close relationship between confidence and skill acquisition in action sports. Participants also recognised that maintaining motivation over many years of practice can become increasingly difficult, particularly when technical progression slows or external constraints limit opportunities for training.

These findings suggest that successful athlete development depends not only on technical instruction but also on psychological support, confidence building, and appropriately structured progression.

The survey included optional questions ‘Do you think BMX is good for mental health?’ and whether participants thought BMX helps social inclusion, to which we have a 100% response rate. 95.7% of the recorded responses expressed the view that BMX is good for mental health, which, combined with the result about social inclusion, indicates a strongly positive perception of BMX’s contribution to mental health and social inclusion among respondents.



Do you think BMX is good for mental health?



Do you think BMX helps social inclusion?

3.4 PHYSICAL CHALLENGES AFFECTING PROGRESSION

Respondents identified several physical factors that interfere with regular training and performance improvement.

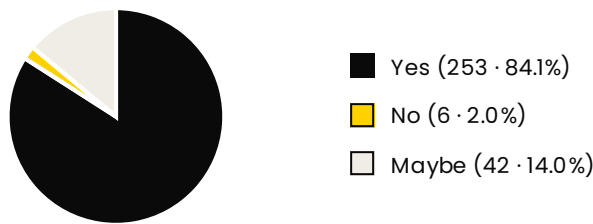
The most frequently reported challenges included:

- temporary physical fatigue after intensive practice that is reversible (46.2%);
- injury or recovery from previous injuries (39.2%);
- longer-term physical overload resulting from insufficient recovery, accumulated muscular fatigue and pain or persisting training imbalances (14.6%).

While short-term fatigue represents a normal consequence of intensive practice, persistent overload and injury recovery may substantially interrupt skill acquisition. Because BMX Freestyle involves repeated impacts, explosive movements, and high mechanical loads, appropriate recovery strategies are essential for sustainable athlete development.

The results indicate that many participants recognise recovery management as an important component of performance, supporting the growing emphasis on evidence-based conditioning within modern BMX coaching.

Nonetheless, a large majority of participants perceived BMX as having improved their physical health (84.1%).



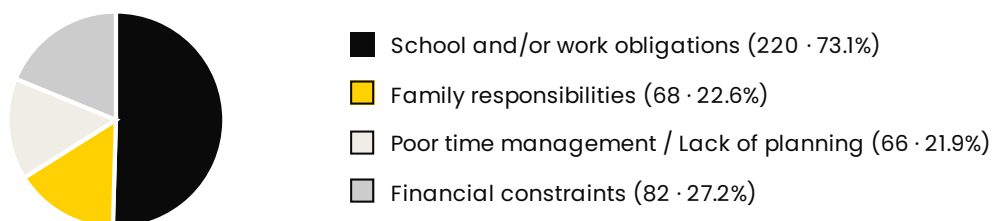
3.5 LIFESTYLE FACTORS INFLUENCING TRAINING

Beyond psychological and physical demands, respondents identified several external factors that reduce the amount of time available for practice.

School and employment obligations were the dominant constraint across the sample (73.1%), reflecting the demographic profile of many BMX participants who balance education or employment alongside regular training.

Financial considerations also remain a significant challenge. Expenses associated with bicycles, maintenance, protective equipment, travel, coaching, and competition participation create substantial barriers for 27.2% of athletes, particularly younger riders and those living in regions with limited institutional support.

These findings emphasise that athlete development is influenced by broader social and economic circumstances in addition to individual motivation and technical ability.



% of n = 301 respondents · multiple choice, selections can exceed 100%.

3.6 ACCESSIBILITY OF BMX FREESTYLE

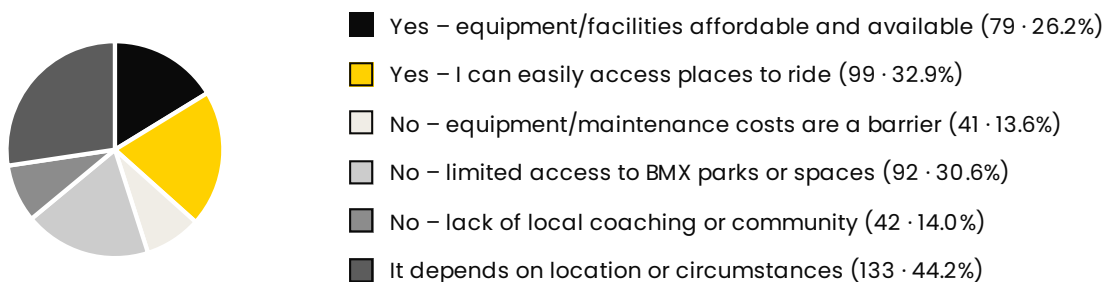
Participants were asked whether they considered BMX Freestyle to be an accessible sport.

Responses revealed a mixed picture. While many respondents considered BMX reasonably accessible because of available riding locations or affordable facilities in their local communities, a substantial proportion identified important barriers to participation.

The most commonly reported accessibility challenges included:

- limited access to BMX parks or suitable riding facilities;
- lack of local coaching or organised BMX communities;
- high equipment and maintenance costs;
- considerable differences between geographical regions.

Many respondents (44.2%) selected the option indicating that accessibility depends largely on local circumstances, demonstrating that opportunities for participation vary considerably between countries and even within individual regions.



% of n = 301 respondents · multiple choice, selections can exceed 100%.

Regarding the perceived financial requirement for starting BMX, almost half of respondents (49.2%) estimated that less than €500 was required, while a similar proportion (46.8%) estimated between €500 and €1,000. Only 12 respondents (4.0%) selected more than €1,000.



These findings highlight the importance of infrastructure development and community support as prerequisites for expanding participation in BMX Freestyle.

3.7 INFRASTRUCTURE AND COACHING SUPPORT

When asked about the external factors limiting BMX development in their local environments, respondents most frequently identified deficiencies related to infrastructure and coaching.

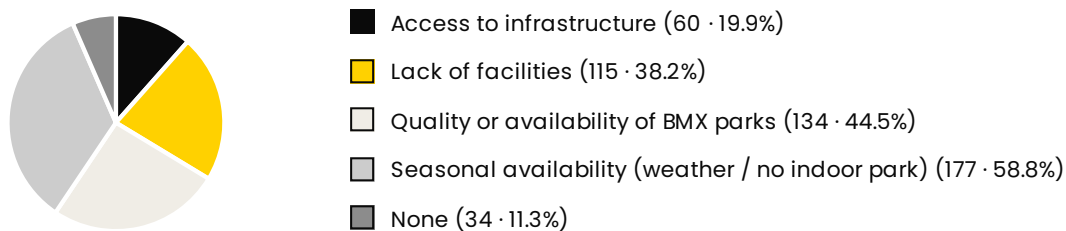
Commonly reported limitations included:

- insufficient BMX facilities;

- limited access to specialised infrastructure;
- variable quality of BMX parks;
- seasonal restrictions caused by weather or lack of indoor facilities.

The most frequently selected environmental limitation was seasonal availability, including weather and lack of indoor parks (58.8%). This was followed by quality or availability of BMX parks (44.5%) and lack of facilities (38.2%).

The combination of limited infrastructure and inconsistent coaching opportunities represents one of the most important barriers to sustainable athlete development identified within the survey.



% of n = 301 respondents · multiple choice, selections can exceed 100%.

3.8 LIMITATIONS TO PROGRESSION OR PARTICIPATION IN BMX FREESTYLE

The findings of the optional open question ‘Is there anything else that currently limits your progression or participation in BMX Freestyle?’ summarise questions within the chapter.

Responses demonstrate that progression in BMX Freestyle extends far beyond technical riding ability. Athletes must simultaneously manage psychological confidence, physical recovery, financial constraints, and environmental limitations while maintaining long-term motivation for continuous improvement.

Inadequate facilities and training infrastructure — lack of suitable parks, parks being too small or poorly designed, lack of indoor facilities, loss/demolition of skateparks, distance to suitable facilities, lack of lighting, and limited access to advanced training infrastructure such as foam pits and resi ramps — account for 45% of the answers.

Among other limitations, most prominent were:

Financial limitations and lack of sponsorships — inability to earn a living as a professional rider, limited sponsorships, expensive international travel and lack of federation/government travel support; and

Weak community and rider base — lack of ambitious riders or established crews, declining local BMX scenes, insufficient support from sport associations or authorities and lack of regular national-level activities and competitions.

4 COACHING AND PROGRESSION NEEDS

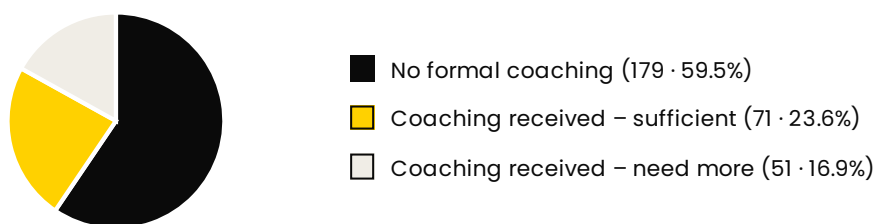
4.1 COACHING AVAILABILITY

Coaching is widely recognised as one of the most important contributors to long-term athlete development. Effective coaching provides technical instruction, structured progression, performance feedback, injury prevention strategies, and psychological support throughout an athlete's development pathway.

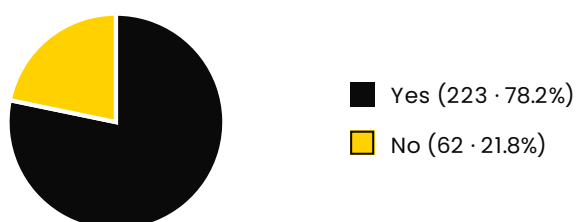
The survey findings indicate that access to structured coaching remains inconsistent across the BMX Freestyle community. While some respondents reported receiving regular guidance through clubs or qualified coaches, many indicated that they continue to rely primarily on self-directed learning, peer support, or freely available online resources.

The largest group consisted of respondents who reported no formal coaching experience (59.5%). A total of 122 respondents (40.5%) had received formal coaching. Of the complete sample, 71 (23.6%) reported that the coaching they had received was sufficient, while 51 (16.9%) reported having received coaching but needing more.

This variation reflects the current state of BMX Freestyle internationally, where organised coaching systems are still developing and access often depends on geographical location, available facilities, and the maturity of local BMX communities.



Perceived value of additional coaching time indicates that 78.2% of respondents believed that more coaching time would improve their BMX experience.



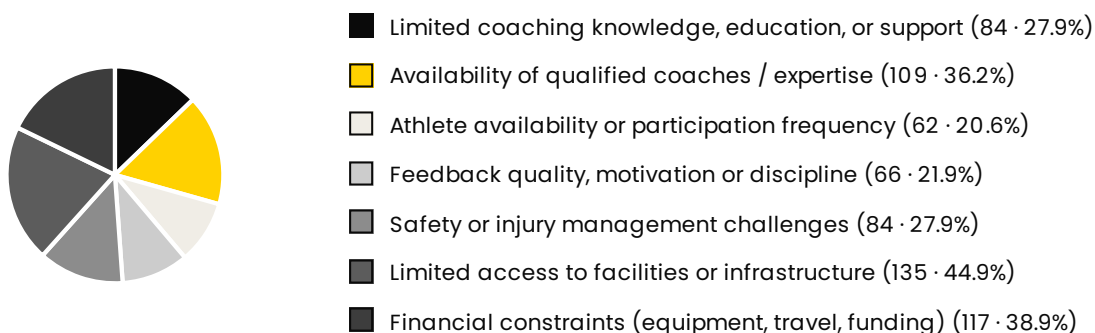
4.2 KEY CHALLENGES FOR ATHLETE PROGRESSION

We asked participants, ‘What do you consider the biggest limitation affecting BMX Freestyle training and coaching?’ This was a multiple-response question, meaning participants could identify more than one limitation, and the questionnaire included seven predefined factors.

Respondents identified factors that currently restrict athlete progression within BMX Freestyle. The most frequently reported challenges included:

- limited access to suitable facilities and infrastructure (44.9%);
- financial barriers associated with equipment and participation (38.9%);
- availability of qualified coaches, guidance and expertise (36.2%);
- limited coaching knowledge, education, and guidance (27.9%);
- concerns regarding injury prevention and safe progression (27.9%).

These findings indicate that progression in BMX Freestyle depends upon a complex interaction between technical instruction, psychological readiness, infrastructure, financial resources, and access to experienced mentors.



% of $n = 301$ respondents · multiple choice, selections can exceed 100%.

4.3 CURRENT LEARNING PRACTICES

The survey explored how respondents currently receive coaching and technical guidance.

Learning pathways varied considerably across the sample.

The most common primary learning method was self-directed learning, reported by 139 respondents (46.2%). Friends and peers represented the second most common primary learning source (28.2%). Formal learning through a coach or club was identified by 49 respondents (16.3%), while online videos were the primary method for 28 respondents (9.3%).

Combining the self-taught and friends/peers categories shows that 224 respondents (74.4%) primarily learned new tricks either independently or through peers. This is a derived grouping of the questionnaire categories rather than a separate survey response.

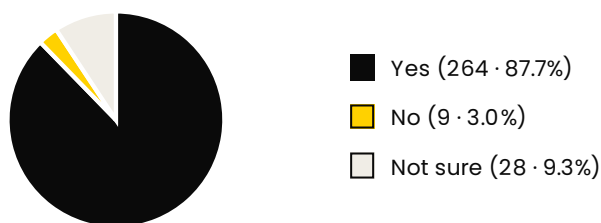
Only 16.3% identified a coach or club as their primary method of learning new tricks.

This finding suggests considerable potential for educational initiatives capable of complementing existing informal learning practices rather than replacing them.

Although informal learning remains an important characteristic of BMX culture, respondents clearly expressed a need for more structured coaching, improved educational resources, and better access to appropriate training environments. These observations provide an important context for the following topic, which examines safety perceptions, injury prevention, and the potential contribution of innovative training approaches — including virtual reality — to athlete development.

4.5 IMPORTANCE OF REVISITING BASIC TECHNICAL SKILLS

A clear majority of respondents (87.7%) believed that periodically revisiting basic technical skills is important for long-term progression. The result provides strong descriptive support for the perceived importance of maintaining or revisiting fundamental BMX skills throughout rider development.



In addition to learning the importance of revisiting basic skills, we wanted to look at which stages it is most needed. The multiple-choice answer was enabled for the development stages as follows: All stages, Beginner, Intermediate, Advanced and Elite.

The most frequently selected response was All stages, identified by 164 respondents (54.5%). Beginner was selected by 113 respondents (37.5%) and Intermediate by 82 (27.2%). Advanced and Elite were selected less frequently, by 29 (9.6%) and 11 respondents (3.7%), respectively.

The results indicate that more than half of respondents explicitly selected All stages, suggesting that revisiting fundamental skills was commonly perceived as relevant throughout rider development. Among the individual development stages, Beginner received the highest selection frequency, followed by Intermediate, Advanced, and Elite.



% of n = 301 respondents · multiple choice, selections can exceed 100%.

4.6 COACHING AND PROGRESSION NEEDS SUMMARISED

The Coaching and Progression Needs section reveals a BMX learning environment in which formal coaching is not the predominant experience. Almost three-fifths of respondents reported never having received formal coaching, and approximately three-quarters identified either self-directed learning or friends/peers as their primary method for learning new tricks.

At the same time, additional coaching was viewed positively: 78.2% of respondents to the optional coaching-time question believed that more coaching would improve their BMX experience.

The barriers affecting coaching and training were broader than coaching availability alone. Limited facilities and infrastructure (44.9%), financial constraints (38.9%), and qualified coach availability/guidance (36.2%) were the three most frequently selected limitations.

Finally, the survey shows strong agreement regarding the role of technical fundamentals. 87.7% believed that periodically revisiting basic BMX skills is important for long-term progression, while All stages was the most frequently selected answer when participants were asked when revisiting those basics is most important.

Overall, responses indicate a combination of substantial informal learning, limited exposure to formal coaching, positive attitudes towards additional coaching, multiple structural constraints on training, and strong support for continued attention to technical fundamentals throughout rider progression. These conclusions are limited to what is directly supported by the supplied questionnaire and statistical summary; no causal relationships are assumed.

5 SAFETY PERCEPTION IN BMX FREESTYLE

5.1 GENERAL PERCEPTION OF SAFETY

Safety is one of the defining characteristics of BMX Freestyle. The sport combines high speeds, aerial manoeuvres, complex technical tricks, and continuously changing environments, all of which expose riders to an inherent level of physical risk. Consequently, athletes must develop not only technical competence but also the ability to assess risk, make appropriate decisions, and progress safely through increasingly demanding skills.

Participants were asked how safe they generally feel when practising BMX Freestyle.

Overall, respondents demonstrated a balanced perception of risk. Most participants reported feeling either safe (47.2%) or neither safe nor unsafe (38.9%), while only a relatively small proportion considered BMX Freestyle to be clearly unsafe. Very few respondents described the sport as very unsafe.

These findings suggest that riders generally recognise the inherent risks associated with BMX Freestyle without perceiving the sport as excessively dangerous. Instead, safety appears to be viewed as something that depends largely on preparation, technical ability, experience, and responsible decision-making.

This balanced perception is characteristic of many action sports, where participants develop an informed understanding of risk through progressive exposure rather than attempting to eliminate risk entirely.

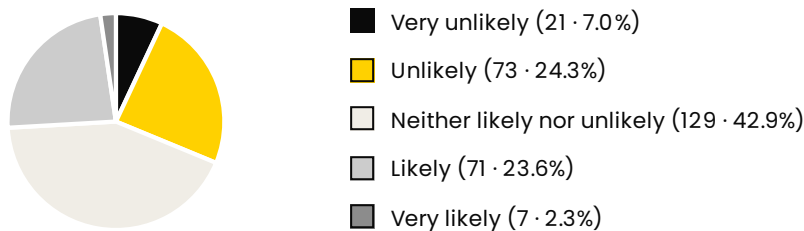


5.2 PERCEIVED LIKELIHOOD OF INJURY

Respondents were also asked how likely they believed they were to sustain an injury while riding.

Most participants selected the middle categories of the response scale, indicating that injury is considered a realistic possibility rather than an inevitable outcome (Neither likely nor unlikely: 42.9%).

Conversely, 73 respondents (24.3%) considered injury unlikely and 21 (7.0%) very unlikely, while the majority acknowledged that some level of injury risk is an unavoidable component of BMX participation.



5.3 SAFETY ACROSS DIFFERENT RIDING ENVIRONMENTS

The survey further explored safety perceptions within four common BMX training environments: skateparks and bowl facilities; street or urban environments; dirt jump lines; indoor BMX facilities.

The results reveal clear differences between environments.

■ Unsafe ■ Neutral ■ Safe



Skatepark / Bowl
n = 296



Street / Urban obstacles
n = 294



Dirt / Jump lines
n = 293



Indoor facility
n = 294

› INDOOR FACILITIES

Indoor BMX facilities received some of the highest safety ratings. Of the 294 respondents who provided a rating, 177 (60.2%) rated indoor facilities as safe. A further 102 (34.7%) were neutral, while only 15 (5.1%) rated them unsafe.

This is generally associated with controlled conditions, predictable surfaces, weather independence, and improved opportunities for structured coaching and supervised practice.

› SKATEPARKS AND BOWL FACILITIES

Purpose-built skateparks and bowl facilities were generally perceived as the safest outdoor training environments. Of 296 recorded responses, 157 (53.0%) rated this environment safe, 112 (37.8%) neutral, and 27 (9.1%) unsafe.

This finding is unsurprising, as professionally designed parks provide predictable riding surfaces, consistent obstacle geometry, and environments specifically intended for BMX and similar action sports.

› STREET AND URBAN ENVIRONMENTS

Street riding received noticeably lower safety ratings. Of 294 responses, 102 (34.7%) rated these environments safe, while 131 (44.6%) were neutral and 61 (20.7%) rated them unsafe.

This can be explained by recognising the additional risks associated with riding in public environments.

› DIRT JUMP LINES

Perceptions of dirt jump safety were more varied. 23.2% rated Dirt/Jump lines safe. Many respondents reported neutral (48.5%) or unsafe (28.3%) perceptions, reflecting the variable quality of dirt facilities and the technical demands associated with larger jumps.

5.4 FACTORS AFFECTING SAFETY

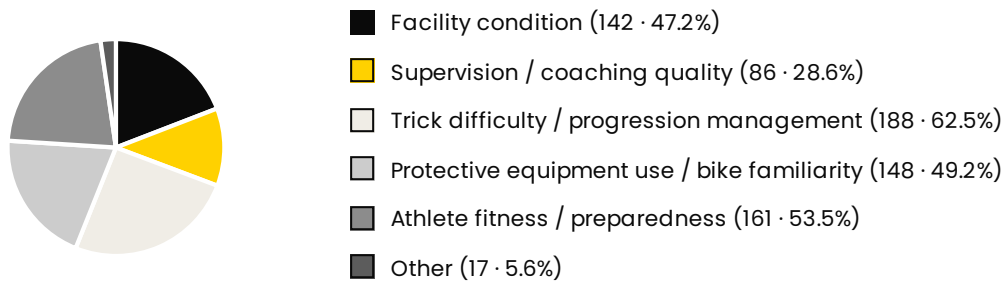
Earlier questions identified several environmental constraints affecting BMX participation, so we wanted to cross-examine which also influence safety. The questionnaire included facility condition, supervision/coaching quality, trick difficulty/progression management, protective equipment use and familiarity with bike performance, athlete fitness/preparedness, and Other.

The most frequently selected factor was trick difficulty/progression management, selected by 188 respondents (62.5%). Athlete fitness/preparedness was selected by 161 respondents (53.5%), followed by protective equipment use and familiarity with bike performance (n = 148; 49.2%) and facility condition (n = 142; 47.2%).

Supervision/coaching quality was selected by 86 respondents (28.6%), while 17 (5.6%) selected Other.

These factors demonstrate that rider safety is determined not only by individual ability but also by the quality and accessibility of the surrounding training environment.

Investment in well-designed infrastructure therefore represents an important strategy for improving both participation and injury prevention.



% of $n = 301$ respondents · multiple choice, selections can exceed 100%.

5.5 INTEGRATED FINDINGS AND IMPLICATIONS ON SAFETY PERCEPTION

General feelings of safety were predominantly positive. This provides a useful distinction from the mental and motivational findings where fear of injury was selected by 68.4% of respondents as a challenge when trying to improve BMX skills. The two findings measure different questions: participants may report generally feeling safe while still identifying fear of injury as a challenge during skill progression.

Perceived injury likelihood was comparatively neutral, and safety perceptions differed according to environment. Indoor facilities received the most positive safety assessment, and Skatepark/Bowl was also predominantly viewed as safe.

Progression management was the most frequently selected safety factor, and it should occupy a prominent position in safety-oriented training resources. Trick difficulty/progression management was selected by almost two-thirds of respondents as affecting athletes' perception of safety. Athlete preparedness is also prominent: more than half of respondents selected athlete fitness/preparedness, while approximately half selected protective equipment use and familiarity with bike performance.

The environment in which BMX takes place matters to perceived safety. Indoor facilities and Skatepark/Bowl environments received more positive safety ratings than Street/Urban obstacles and Dirt/Jump lines in the supplied responses.

Finally, the results support treating safety as multifactorial within the training methodology. The questionnaire responses do not identify one factor that can independently account for safety perception. Instead, participants selected factors related to progression, physical preparedness, equipment/bike familiarity, facilities and coaching.

6 TRAINING SUPPORT NEEDS

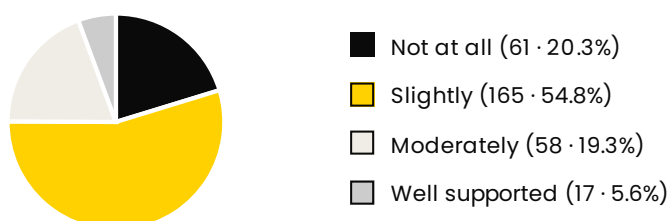
Long-term development in BMX Freestyle depends on much more than regular practice. Athletes require access to appropriate coaching, safe training environments, educational resources, and opportunities to progressively develop technical skills. Understanding the support needs of athletes and coaches becomes essential for designing effective development programmes.

The section examines respondents' perceptions of national support for BMX Freestyle, attitudes towards complementary training approaches, factors that could improve training and development, preferred training methods, perceived suitability of VR or digital tools for specific tricks, challenging phases of trick acquisition, difficult tricks identified through an optional open-ended question, and the level of tricks for which respondents would like more structured guidance.

6.1 PERCEIVED SUPPORT FOR BMX FREESTYLE

'To what extent do you feel BMX Freestyle is supported as a sport in your country?' and 'Would support through alternative or complementary training methods (e.g., off-bike training, digital tools, VR) help you address challenges in coaching/training?'

The results point to a clear perception that BMX Freestyle is still not strongly supported in many respondents' countries. More than half of participants (54.8%) felt the sport was only slightly supported, while a further 20.3% felt it was not supported at all. In practical terms, this means that three out of four respondents (75.1%) saw national support as limited. Only a quarter of the sample considered BMX Freestyle to be moderately or well supported.



This finding fits closely with results from earlier chapters, where respondents repeatedly highlighted limited facilities, seasonal access, financial constraints, and restricted coaching availability as barriers to participation and progression. Together, these responses suggest that the main challenges are not only technical, but also linked to the broader environment in which riders train and develop.

At the same time, participants showed strong openness to new forms of support. Half of the respondents (50.2%) believed that complementary methods such as off-bike training, digital tools or VR could help address coaching and training challenges, while a further 39.2% were open to the possibility. Only 10.6% rejected the idea.



Overall, the findings suggest both a clear need for stronger support structures and a willingness within the BMX community to explore new training solutions alongside traditional coaching, peer learning and real-world practice.

6.2 FACTORS THAT COULD MOST IMPROVE BMX FREESTYLE TRAINING OR DEVELOPMENT

The question was asked to obtain a clear picture of what respondents believe would make the greatest difference to their BMX Freestyle development.

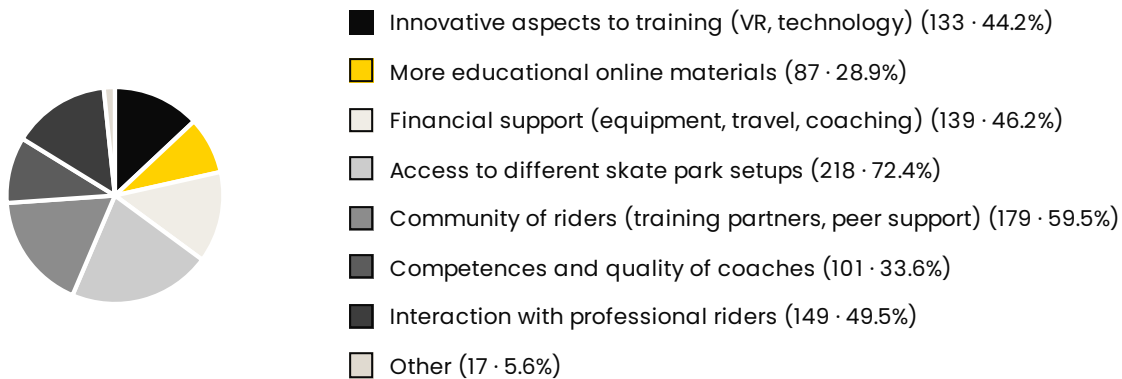
Access to different skatepark setups and facility types stood out as the strongest priority, selected by 72.4% of respondents. This reinforces findings from earlier chapters, where limited facilities, poor infrastructure and seasonal access were repeatedly identified as barriers to regular practice and progression.

The social side of BMX also appears particularly important. Almost six in ten respondents (59.5%) selected having a community of riders, training partners and peer support, while nearly half (49.5%) valued interaction with professional riders. These findings fit with the earlier results showing that many participants learn through peers and prefer group-based training environments.

Financial support was selected by 46.2%, confirming that the ability to access equipment, travel, facilities and training opportunities remains an important part of rider development.

At the same time, 44.2% selected innovative training approaches such as VR and other technologies, indicating meaningful interest in new methods. However, the overall pattern suggests that technology should complement rather than replace the foundations of BMX development.

Taken together, the results point towards a combined support model: better and more varied facilities, strong rider communities, access to experienced riders and coaches, financial support, and innovative training tools working alongside one another to create more effective progression opportunities.



% of n = 301 respondents · multiple choice, selections can exceed 100%.

6.3 PREFERRED METHODS FOR TRAINING MORE EFFECTIVELY

Participants identified several methods for training that they believed would enhance their training experience.

The most frequently selected format was group sessions/peer training (61.5%), followed by in-person coaching (57.1%) and workshops with professional riders (53.5%).

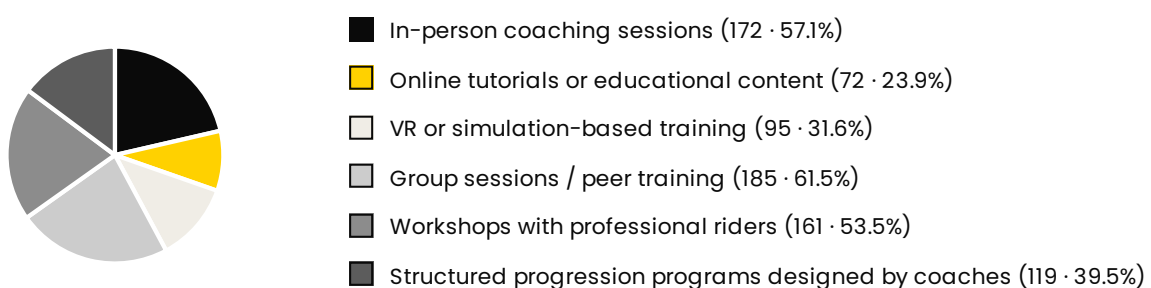
Structured progression programmes were selected by 39.5%.

VR or simulation-based training was selected by 95 respondents (31.6%), while online tutorials or other educational content were selected by 23.9%.

The findings show that respondents most frequently favoured direct, practical and socially based learning methods. VR nevertheless attracted interest from almost one-third of the survey population.

The data therefore support viewing VR as a complementary method within a broader training system, rather than as a replacement for coaching, peer learning or direct interaction with experienced riders.

These preferences illustrate that riders value a combination of technical instruction, practical learning opportunities, and additional support.



% of n = 301 respondents · multiple choice, selections can exceed 100%.

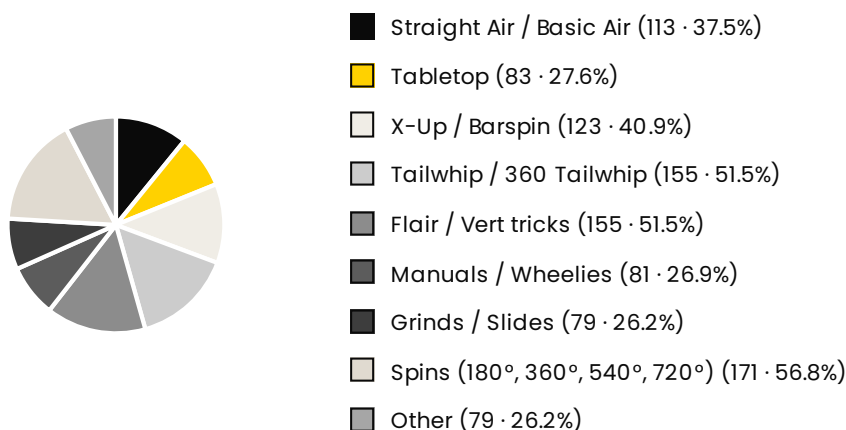
6.4 TRICKS OR STUNTS PERCEIVED AS SUITABLE FOR VR OR DIGITAL TOOLS

The results highlight a clear preference for using VR and digital tools with more complex aerial tricks. Spins were selected most often, by 56.8% of respondents, while Tailwhip/360 Tailwhip and Flair/Vert tricks were each selected by 51.5%. This suggests that riders see the greatest potential for digital training in tricks where understanding rotation, body position and movement in the air is particularly important.

X-Up/Barspin was also selected by a substantial proportion of respondents (40.9%), while 37.5% identified Straight Air/Basic Air. Tabletop, Manuals/Wheelies and Grinds/Slides received less support, suggesting that riders may see fewer advantages in using VR for skills that depend more heavily on physical balance, bike contact or interaction with obstacles.

This pattern connects well with findings from earlier chapters. Fear of injury was the most frequently reported mental challenge, while trick difficulty and progression management was the most frequently selected factor affecting safety perception. Together, these findings suggest a potentially useful role for VR in helping riders understand and visualise difficult aerial movements before attempting them physically.

For the VR Freestyle project, the results point towards prioritising spins, tailwhips, flairs and other aerial progression skills, where visualisation, orientation and understanding the sequence of movement may offer the greatest perceived value.



% of n = 301 respondents · multiple choice, selections can exceed 100%.

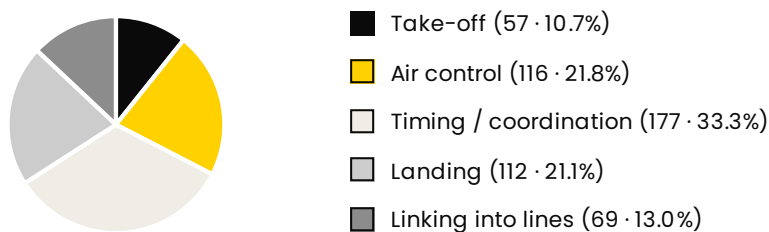
6.5 MOST CHALLENGING PHASE WHEN LEARNING A NEW TRICK

The most frequently identified challenge was timing/coordination, selected by 177 respondents (33.3%). Air control and landing followed at 21.8% and 21.1%, respectively.

Linking tricks into lines was selected by 13%, while take-off was selected by 10.7%.

The substantive result is clear: timing and coordination were identified considerably more frequently than any other phase.

This result is directly relevant to training design because it suggests that educational resources need to address not only what movements are required but also when those movements occur and how they are coordinated within the trick sequence.



6.6 TRICKS AND STUNTS CONSIDERED DIFFICULT TO LEARN OR TEACH

The strongest themes — whips/bike-body separation, rotations, flips/inversions, and advanced combinations — all involve a substantial cognitive and spatial component.

One detailed respondent answer explicitly suggested that VR could be useful when learning backflips and flairs, particularly by allowing riders to visualise the movement safely before their first physical attempts. The same response highlighted: dipped 360s; cork 720s; flip 360s; cashrolls; barspins; tailwhips. The respondent characterised aerial awareness as the area that could benefit most strongly from VR visualisation.

At the same time, the same response questioned whether tricks such as turndowns and tabletops would benefit substantially from VR without integration of an actual bicycle.

This distinction is important. The open-type question responses suggest that the strongest potential VR use case is not simply showing any trick virtually. Instead, it is helping riders understand movements that depend heavily on: spatial orientation; inversion; rotational awareness; timing; bike-body separation; sequencing of multiple aerial actions; visualising a high-risk trick before physical execution.

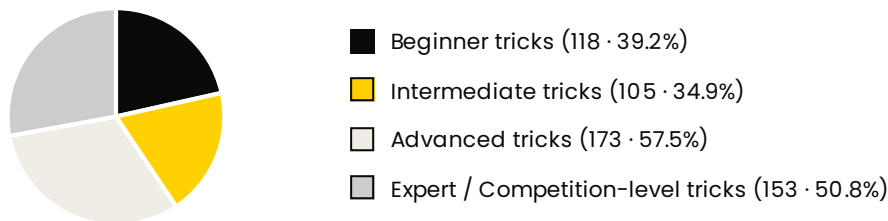
In contrast, skills strongly dependent on continuous physical balance, force application or direct tactile interaction with the BMX may be less suited to purely visual simulation.

6.7 TRICKS AND SKILLS FOR WHICH MORE STRUCTURED GUIDANCE IS DESIRED

Advanced tricks received the highest selection frequency, with 173 respondents (57.5%) requesting more structured guidance. Expert/competition-level tricks were selected by 153 respondents (50.8%).

Beginner tricks were selected by 39.2%, while intermediate tricks were selected by 34.9%.

The findings therefore show that the demand for structured guidance exists across all stages of trick development, but is strongest for advanced and expert-level skills.



% of $n = 301$ respondents · multiple choice, selections can exceed 100%.

6.8 INTEGRATED FINDINGS

The findings from this section point to a combination of structural needs and opportunities for new approaches to BMX Freestyle training. A major concern is the perceived lack of support for the sport: 75.1% of respondents felt that BMX Freestyle was either not supported at all or only slightly supported in their country.

At the same time, there is considerable openness to expanding the way training is delivered. Half of respondents (50.2%) believed that alternative or complementary training methods could help address current challenges, while a further 39.2% considered that they might be useful.

The results also make clear that technology alone is not the solution. Access to varied skatepark facilities (72.4%) and strong rider communities and peer support (59.5%) were identified as particularly important for development, alongside coaching, interaction with professional riders and financial support.

Within this broader training environment, VR appears to have a more specific role. Respondents saw particular potential for its use with spins, tailwhips and flair/vert tricks — skills that involve complex aerial movement and orientation. This connects with timing and coordination being identified as the most challenging phase of learning new tricks.

The open responses further strengthen this pattern, with riders frequently mentioning whips, rotations, flips, inversions and complex combinations as difficult to learn or teach. Taken together, the findings suggest that VR could be most valuable as a complementary tool for understanding, visualising and preparing for complex aerial progression, while practical riding, facilities, coaching and peer learning remain central to BMX development.

7 RIDER DEVELOPMENT PATHWAYS: INFERENCE ANALYSIS

To better understand how riders progress within BMX Freestyle, inferential analyses were conducted using the rider-only subset of the sample ($n = 209$). The objective was to examine the relationships between age, riding experience, training frequency, riding level, and competitive participation. Together, these analyses provide insight into the developmental pathway from recreational participation to advanced and competitive BMX riding.

› AGE AND RIDING LEVEL

The association between age group and self-reported riding level was examined using Pearson's chi-square test. The distribution of riding levels differed across age groups, indicating that technical proficiency is closely related to rider age. Younger participants were predominantly represented at beginner and intermediate levels, whereas older riders were more frequently classified as advanced or elite.

Although age alone does not determine technical ability, the findings suggest that progression through sport generally occurs over time as riders accumulate experience and exposure to increasingly complex skills. This pattern is consistent with long-term athlete development models, which recognise technical mastery as the result of sustained practice rather than chronological age alone.

› AGE AND COMPETITION PARTICIPATION

A second analysis examined the relationship between age and competition level. Older riders were more frequently represented in regional, national, and international competitions, whereas younger participants were predominantly recreational riders or had limited competitive experience.

These findings suggest that competitive participation typically follows the gradual acquisition of technical competence and confidence. Progression into higher levels of competition therefore appears to reflect both accumulated experience and successful skill development.

› RIDING EXPERIENCE AND TECHNICAL LEVEL

The relationship between years of riding experience and self-reported riding level demonstrated one of the clearest developmental patterns within the dataset. Riders with fewer years of experience were primarily represented within the beginner and intermediate categories, while riders with more than six years of experience were substantially more likely to identify themselves as advanced or elite.

This relationship supports the progressive nature of BMX Freestyle skill acquisition. Complex manoeuvres require repeated practice over extended periods, and the findings indicate that technical expertise develops cumulatively through long-term participation rather than short-term intensive training.

› RIDING EXPERIENCE AND COMPETITION PARTICIPATION

Years of riding experience were also associated with competition participation. More experienced riders were considerably more likely to compete at regional, national, or international levels than riders with fewer years of experience.

This pattern reflects the sequential progression commonly observed in BMX Freestyle, whereby athletes first establish technical competence before entering organised competition. Competitive participation therefore appears to represent a later stage of athlete development rather than an isolated characteristic.

› TRAINING FREQUENCY AND RIDING LEVEL

Training frequency was examined in relation to riding level to determine whether athletes with higher technical proficiency also reported greater training exposure.

Advanced and elite riders generally reported more frequent weekly training than beginner and intermediate riders. Regular practice provides greater opportunities for skill repetition, technical refinement, and physical adaptation, all of which contribute to long-term performance development.

At the same time, the findings indicate that training quality should be considered alongside training quantity. Structured coaching, progressive learning, and appropriate recovery remain essential components of effective athlete development.

› TRAINING FREQUENCY AND COMPETITION PARTICIPATION

Competition level was also associated with training frequency. Riders participating at higher competitive levels typically reported more frequent training schedules than recreational participants.

This observation reflects the increased physical, technical, and psychological demands associated with competitive BMX Freestyle. Athletes preparing for competition require regular practice not only to improve technical execution but also to maintain consistency, confidence, and competition readiness.

› PHYSICAL AND HEALTH LIMITATIONS ACROSS RIDER DEVELOPMENT STAGES

- **Beginner riders** — 82.4% reported physical fatigue. Beginners primarily experience normal fatigue associated with learning new skills and adapting to riding demands rather than chronic training stress.

- **Novice riders** — highest proportion reporting injury/recovery (45.8%); 54.2% reported fatigue. This stage appears to coincide with increasing technical ambition while movement quality and conditioning are still developing, potentially increasing injury susceptibility.
- **Intermediate riders** — most balanced distribution; fatigue: 48.6%, injury: 26.4%, and highest prevalence of physical overload: 25.0%. Intermediate riders are likely increasing both training frequency and technical difficulty, exposing them to cumulative fatigue and insufficient recovery.
- **Advanced riders** — fatigue remained the most common limitation (48.3%); injury represented 38.3%; overload decreased to 13.3%. Advanced riders may manage training loads more effectively than intermediate riders but continue to experience injuries associated with higher-risk skills.
- **Elite riders** — fatigue remained dominant (56.2%), injury 25.0% and overload 18.8%. Elite riders appear better adapted to high training volumes, although accumulated fatigue remains an important challenge. The lower injury proportion compared with novice and advanced riders reflects superior technical proficiency, physical preparation, and recovery strategies.

Overall, beginner riders overwhelmingly identified physical fatigue as the primary limitation (82.4%), reflecting the normal physiological demands of learning new skills. Novice riders reported the highest proportion of injury-related limitations (45.8%), suggesting an increased injury risk during early technical progression. Intermediate riders demonstrated the highest prevalence of physical overload (25.0%), consistent with increasing training volume and technical complexity. Advanced and elite riders continued to report fatigue as the most common limiting factor; however, their responses indicate a more balanced interaction between fatigue, overload, and injury, reflecting the greater physical demands of high-performance BMX Freestyle.

› RIDER LEVEL AND FORMAL COACHING RECEIVED

No formal coaching is the most common response at every rider level.

Advanced riders have the highest proportion without formal coaching (70%), indicating that many riders reach a high-performance level through self-directed learning, peer support, or informal mentoring.

Beginners show the greatest demand for additional coaching, with 35.3% reporting they have received coaching but need more.

Intermediate riders also express a considerable need for further coaching (20.8%), suggesting this developmental stage may particularly benefit from structured instruction.

Among elite riders, almost one-third (28.1%) consider their coaching sufficient, the highest proportion alongside novices.

› HOW DO RIDERS PRIMARILY LEARN NEW TRICKS?

Beginners rely primarily on coaches or clubs (58.8%), indicating that structured instruction is especially important at the entry stage.

Novice riders show a more balanced learning pattern, with friends/peers (37.5%) becoming the most common source of learning.

From the intermediate level onward, self-directed learning becomes the dominant approach, accounting for 40.3% of intermediate riders, 63.3% of advanced riders and 56.2% of elite riders.

Online videos are most used by intermediate riders (19.4%), suggesting digital resources complement skill progression during this stage.

Reliance on formal coaching declines steadily as rider level increases, from 58.8% among beginners to 6.2% among elite riders.

When looking into preferred learning formats, beginner riders overall have the strongest interest in in-person coaching (53%), with lower interest in peer learning and workshops, reflecting the need for structured guidance during skill acquisition.

Novice riders show the highest demand for in-person coaching (79%) as well as growing interest in peer sessions (63%) and professional workshops (54%).

Intermediate riders by far specify group sessions (81%) as the preferred learning format; interest in workshops also rises substantially (71%). Approximately half of riders would value structured progression programmes.

The advanced riders group demonstrates the strongest overall demand for collaborative learning: group sessions 88%, professional workshops 82%, in-person coaching 62%, structured programmes 57%.

Elite riders continue to favour collaborative learning: group sessions 81%, professional workshops 78% and in-person coaching 66%. Interest in VR/simulation (34%) is slightly higher than among beginners, suggesting openness to technology-supported performance enhancement.

» DEVELOPMENTAL PROGRESSION IN BMX FREESTYLE

Taken together, these analyses illustrate a coherent developmental pathway within BMX Freestyle. Riders generally progress from recreational participation through intermediate technical development towards advanced riding and competitive involvement as experience accumulates.

The results suggest that progression is influenced by several interconnected factors, including age, accumulated riding experience, regular training, and access to appropriate learning opportunities. No single factor alone explains athlete development; rather, progression reflects the combined effects of sustained participation, effective coaching, suitable training environments, and continuous technical practice.

These findings reinforce the importance of structured long-term athlete development programmes that support riders throughout each stage of progression. They also provide empirical support for educational initiatives that combine evidence-based coaching with innovative learning technologies, such as those being developed within the VR Freestyle project.

Overall, the inferential analyses complement the descriptive findings presented in previous sections by demonstrating that rider development follows a progressive and measurable pattern. As riders

gain experience, increase training exposure, and engage in competitive participation, they are more likely to achieve higher levels of technical proficiency. These observations strengthen the rationale for structured coaching pathways and provide an evidence-based framework for future coach education and athlete development initiatives.

PART TWO

BEST PRACTICE EXCHANGE

Desk research (T2.2): organisational context, national structures and transferable coaching and athlete-development practices from five partner countries and six international models.



BEST PRACTICE EXCHANGE

This desk research is based on the Best Practice Exchange templates completed by partner organisations in France, Croatia, Slovenia, Malta and Estonia. The templates collect information on the organisational context of each partner, the BMX Freestyle structure in each country, and examples of best practices and their transferability.

Due to the fact that partner organisations have different roles, best practice examples are not always directly equivalent. JB Ride, France is primarily involved in coaching and athlete development, Simple Session and Pannonian Challenge are representing major BMX Freestyle events, MSSA Malta are heavily involved in street-sport and community development, and Foton Slovenia contributes mainly through culture, sustainability and immersive technology. These differences are retained rather than normalised away, because they are part of the context in which BMX Freestyle develops in each country.

1 PARTNER ORGANISATION CONTEXT AND POSITION WITHIN THE NATIONAL BMX FREESTYLE ECOSYSTEM

The organisational context provides the starting point for understanding the BMX Freestyle ecosystems examined in this desk research. The partner organisations differ substantially in their primary roles, ranging from coaching and athlete development to event organisation, community development, infrastructure advocacy, culture and digital technology. The information presented in this chapter should therefore not be interpreted as a direct measurement of the national development level of BMX Freestyle. Instead, it identifies the organisational capacity, experience and position from which each partner observes and contributes to its national BMX environment.

At the same time, several organisational characteristics provide indirect indicators of discipline development. These include the existence of regular training programmes, availability of coaches and other specialist personnel, athlete-support activities, competition and event organisation, international connections, access to facilities, and the balance between professional staff and volunteers. When considered together with the national structural information that will be further presented, these indicators help illustrate the extent to which BMX Freestyle development is institutionalised, continuous and sustainable within each country.

This chapter introduces the desk research through the five partner organisations, their most known BMX Freestyle projects, prominent BMX Freestyle roles within their organisations as well as the number of people involved and the way BMX Freestyle training is organised, where applicable.

JB RIDE, FRANCE

Most known projects related to BMX Freestyle

- **Athlete support** — support for athletes in their competitive careers, including support for training and direct/indirect coaching, career development, and travel related to training or competition. The latest initiative is focused on gender equality by involving young girls in discovering a sport where female participation is still low.
- **JB RIDE Week** — a video contest for young riders and BMX fans. Top prizes are three spots to participate in a summer BMX Road Trip with pro riders (French Redline pro Team) for a week, visiting the best BMX spots in France in a holiday-friendly vibe.
- **BOS Festival** — an international BMX Freestyle event in Sérignan, France. This event combined an official international BMX park contest with points towards Olympic qualification, as well as a Dirt Jump event with spectacular jumps to provide an incredible night show for the public.
- **BMX Show Gravel Fever** — a BMX Freestyle Park and Flatland show at the French Gravel Championships, with the objective of spreading knowledge of BMX Freestyle to the general cycling population.

Most prominent roles related to BMX Freestyle: Coach, BMX Park Designer, Technical Director, National Judge, Head Judge, Event Manager, Licensed Riders.

People involved in BMX Freestyle activities: 20.

How BMX Freestyle training is typically organised — within JB RIDE, BMX Freestyle training is typically structured around regular weekly sessions that combine technical skill development, physical conditioning, and tricks practice. Riders are usually grouped by age and skill level to ensure appropriate progression.

Each session is led by a qualified coach and includes warm-up, focused technical drills (bike control and tricks) and supervised free riding time where riders can have additional practice. Safety is a key priority, so proper equipment and progression are always emphasised.

Occasional workshops and training camps are organised, sometimes inviting experienced riders to inspire participants.

For more advanced athletes, training includes individualised coaching and preparation for competitions. Advanced athletes can also receive additional support for their competitive career.

PANNONIAN, CROATIA

Most known projects related to BMX Freestyle

- **Pannonian Challenge (1999–2026)** — an international urban sport and culture event with a 25+ year span. It combines BMX Freestyle, inline and skateboarding competitions, whereas the culture aspect combines a photo exhibition, b-boying (breakdancing) and a graffiti-writing competition as well as music concerts. The BMX Freestyle Park is categorised as a C1 competition according to UCI standards.
- **Pannonian BMX School (2019–2026)** — a BMX Freestyle cycling school initially introduced as a single-day session practice during Pannonian Challenge that evolved into a regular training practice organised throughout the year.

Most prominent roles related to BMX Freestyle: 3 Licensed Coaches, 2 Licensed BMX Freestyle Judges, 5 Licensed Riders, Technical Director, Sports Manager, Sports Coordinator. Pannonian cycling club is a member of the Croatian Cycling Federation.

People involved in BMX Freestyle activities: 3 Official Employees, Approx. 20 Association Members (volunteer roles for legal representatives, board members and members with voting rights), 30 External Collaborators — self-employed experts in skate park construction and/or infrastructure assembly works, marketing experts, logistics and photo and video production, hired external sport judges, MCs and sport commentators, etc., and At least 30 Event Volunteers — volunteers who primarily participate in sport event organisation each year (short-term volunteering).

How BMX Freestyle training is typically organised — BMX training is part of a larger cycling school programme. BMX training is mainly organised in two separate groups — beginners and advanced. For riders that compete in international contests, practice has a more individual character.

The Croatia partner response therefore provides the organisational context for the country-level answers in Chapter 2 and the best-practice answers in Chapter 3.

FOTON, DRUŠTVO ZA RAZVOJ KULTURE IN TRAJNOSTI, SLOVENIA

FOTON is a Slovenian non-profit cultural association working at the intersection of culture, sustainability and immersive/digital technologies.

Most known projects related to BMX Freestyle

- **VR Freestyle** is a direct BMX Freestyle development project for Foton. Foton participates as the Slovenian project partner and contributes expertise in immersive technology, VR and production to the development of tools and methodologies for BMX training.
- **Urbano Dejanje Festival** — an urban-culture festival with a historical BMX component, rather than a dedicated BMX project. Organised by Foton since its early editions, the festival has combined music, arts and urban sports. A BMX session organised with Urban Roof was included in the 2015 programme, and the 2019, 2020 and 2022 programmes again included a skate and BMX session. This demonstrates Foton's experience in presenting BMX within a broader urban-culture context and engaging audiences with urban sports.

Most prominent roles related to BMX Freestyle — within FOTON itself there are no BMX Freestyle related positions such as Head Coach, Assistant Coach, Technical Director, Judge or licensed riders. Foton's BMX-related role is primarily as a technology/cultural NGO and project partner in VR Freestyle.

MALTA STREET SPORT ALLIANCE

Most known projects related to BMX Freestyle

- **Pump It – Empowered Through Sports** — a co-funded European project aimed at engaging youth through street sports, including BMX. The project focused on activating public spaces, promoting inclusion, and encouraging physical activity through organised events, workshops, and community initiatives.
- **Take It to the Streets** — a continuation of Pump It, this EU co-funded project brings BMX and other street sports directly into local communities through roadshow events. It focuses on accessibility, youth participation, and transforming public spaces into active environments.
- **Paola Skatepark Development** — MSSA played a key role in the planning and implementation of Malta's first professional skatepark. This project provides a free, dedicated, high-quality space for BMX Freestyle progression, training, and competitions.
- **BMX Training to Win** — an Erasmus+ project focused on developing BMX Racing skills among young riders through a structured online course. It supports athlete and coach progression and encourages participation in the competitive BMX Racing discipline.
- **Urban Sports Festival** — an annual event that includes BMX Freestyle competitions and showcases, bringing together local and international riders. The festival provides a platform for performance, competition, and community building within the BMX scene.

Most prominent roles related to BMX Freestyle: 2 Coaches, approx. 20 Riders — both unlicensed.

People involved in BMX Freestyle activities: 4 volunteer roles (both legal representatives and coaches).

How BMX Freestyle training is typically organised — currently the training is scheduled as a once-a-week session at the newly opened Paola Skatepark. Prior to the Paola skate park construction, the trainings used to take place at MCAST (Malta College of Arts, Science and Technology) sport facilities in Paola.

The Malta partner response therefore provides the organisational context for the country-level answers in Chapter 2 and the best-practice answers in Chapter 3.

SIMPLE SESSION – ELAMUSSPORT, ESTONIA

Most known projects related to BMX Freestyle

- **Simple Session (2000–2026)** — a world-renowned annual action-sports contest series originating in Estonia, bringing together leading BMX Freestyle and skateboarding athletes for high-level competition. Beyond competition, it functions as an important meeting point for the international BMX community and provides Estonian riders with direct exposure to elite athletes and riding standards.
- **Spot of Tallinn (2015–2024)** — a major indoor action-sports centre near Tallinn provided dedicated facilities for BMX, skateboarding and other action sports. During its operation, it served as an important year-round training and community hub for Estonian riders and hosted both recreational and competitive activities.
- **Session Ramps** — a skatepark and action-sports infrastructure company associated with the Simple Session ecosystem, specialising in the design and construction of skateparks and ramps. Its work has contributed to the development of BMX and skateboarding infrastructure in Estonia and internationally.

Most prominent roles related to BMX Freestyle: Technical Director, Sports Manager, Sports Coordinator.

People involved in BMX Freestyle activities: 2 Official Employees, 4 Part-Time Employees, 30 External Collaborators, 30 Volunteers.

How BMX Freestyle training is typically organised — training is mainly organised alongside events that Simple Session organises, as practice sessions.

2 BMX FREESTYLE STRUCTURE IN PARTNER COUNTRIES

Within the desk research we have examined the structure and level of development of BMX Freestyle across the five partner countries — France, Croatia, Slovenia, Malta and Estonia. Here is the overview of the formal recognition and governance, coaching and education pathways, competition opportunities, public support and the main structural challenges affecting the development and sustainability of the BMX discipline.

2.1 RECOGNITION, FEDERATION STRUCTURE AND GOVERNANCE

» FRANCE

BMX Freestyle Park is recognized as a high-level Olympic discipline and Flatland as a recognized cycling discipline. Other BMX Freestyle practices are not officially recognized as a sport (Dirt, Street, Miniramp, Vertramp etc.).

BMX Freestyle is integrated within the national cycling federation Fédération Française de Cyclisme (FFC) along with BMX Racing, MTB, road cycling, track and other cycling disciplines.

The FFC sets the competition framework, licences riders, validates national events and regulations, and manages the French national-team pathway through its Direction Technique Nationale (DTN); for international selection, the National Technical Director makes the final selection based on a technical selection commission.

A notable recent development is the creation in April 2026 of a dedicated National BMX Freestyle Commission within the FFC, intended to strengthen the recognition and structuring of the discipline while preserving its specific culture and identity.

» CROATIA

BMX Freestyle Park is officially recognized as an Olympic cycling discipline in Croatia by the Croatian Cycling Federation (HBS).

BMX Freestyle is among the recognized cycling disciplines, alongside road, MTB, BMX Racing, cyclocross, trials, gravel, etc.

There are several strong indicators of full recognition. Croatia has held an official BMX Freestyle Croatian National Championship since 2018. As of 2019, the HBS calendar includes the Pannonian Challenge as a UCI C1 BMX Freestyle event.

Within the HBS, the formal BMX Committee continues to publish the BMX Committee rules and the national competition-system regulation. The BMX Committee is club-representative, not simply a small committee whose members are appointed individually. According to its Rules of Procedure, HBS member clubs that opt to participate in the BMX Committee designate a representative. Each participating HBS member club has one representative, with voting rights and the number of votes

determined under the HBS Statute. The representative must also be a member of the organization they represent and meet eligibility requirements. HBS has an official BMX Freestyle national team with its national team coach.

› SLOVENIA

BMX Freestyle is formally recognized in Slovenia within the national cycling structure. The national governing body is the cycling Federation of Slovenia, Kolesarska zveza Slovenije (KZS). BMX Freestyle is governed within KZS's mountain-bike/BMX structure; national competition rules explicitly refer to UCI Part VI-bis (BMX Freestyle), and a BMX Freestyle discipline coordinator has been identified publicly.

Slovenia has an official National Championship in BMX Freestyle Park conducted under UCI rules. The first championship held on Slovenian soil took place in Ljubljana in 2024; earlier Slovenian championships had been hosted in Osijek, Croatia.

› MALTA

In Malta, BMX is formally recognised as a cycling discipline, with the Malta BMX Association acting as the national body for BMX. The association is affiliated with the Malta Cycling Federation (MCF), which serves as the overarching governing body for cycling disciplines in the country.

› ESTONIA

The Estonian Cyclists Union, Eesti Jalgratturite Liit (EJL), explicitly recognises BMX Freestyle as one of the cycling disciplines under its authority. The Estonian Sports Register lists BMX Freestyle among the disciplines represented by EJL, and EJL has been a member of the UCI since 1991.

EJL publishes a general national competition regulation and discipline-specific regulations for some areas — for example, BMX Racing — however formal BMX Freestyle activities operate within the EJL governance framework and the applicable UCI regulations. Estonia has an official national BMX Freestyle championship, organised within the competition structure of the Estonian Cycling Federation (EJL) by the Simple Session team in 2026.

2.2 BMX FREESTYLE CYCLING COACHING LICENCE; FORMAL AND INFORMAL COACH EDUCATION

Let us examine the pathways for obtaining a cycling coaching license relevant to BMX Freestyle across the partner countries, including the availability of formal qualifications and federation-based education. Considering informal coach education and knowledge transfer, such as peer learning, mentoring by experienced riders, club-based training and international exchange is particularly important where BMX Freestyle-specific formal education is limited.

> FRANCE

In France legislation is widely different depending on whether you operate as a professional or a volunteer.

Professional coaching — in France, for a professional BMX Freestyle coaching licence, training takes about a year to a year and a half depending on the training organization. This training is sanctioned by various exams delivering a professional licence to coach at a competitive level in BMX Freestyle (both Racing and Freestyle) under DEJEPS BMX certification.

Other more general certifications allow one to conduct sports initiation including BMX (BPJEPS APT, BPJEPS Cyclisme) but the certification allows one to operate professionally only with beginners or recreational practitioners.

Volunteer coaching — individuals with experience regarding BMX Freestyle can participate in volunteer training and certification with the national federation.

There are two levels of certification, respectively Educator and Competitive coaching (éducateur fédéral, entraîneur fédéral).

The training is significantly smaller for these certifications, requiring 4 to 5 days of in-person training plus online training activities each.

These certifications allow you to safely operate as a volunteer with licensed participants.

Training programs are fairly regular, with availability every year for each certification.

> CROATIA

Croatia has a formal general cycling-coach education route but no separate qualification identified as BMX Freestyle Coach.

The formal route to an HBS coaching licence is the current entry-level qualification as Cycling Coach Level 1. In September 2025, HBS announced a new intake for this formal micro-qualification, delivered through the Croatian Institute of Kinesiology. For that intake, applicants have to: be 18 or older; have completed at least secondary education (HKO level 4.1); demonstrate at least five years of active involvement in cycling confirmed by a club; provide a sports/occupational medicine certificate confirming fitness to work as a cycling coach; and pass an assessment of basic cycling-specific skills and knowledge. The Level 1 programme consists of 200 hours, with theoretical teaching potentially delivered live online. The intake is described explicitly as the basic/initial level for carrying out professional work in cycling.

This is the successor in spirit to the earlier programme, when HBS and the Croatian Olympic Academy previously ran national cycling-coach programmes; for example, 15 coaches completed the programme in 2022. HBS's description of the original programme says that successful completion provided a certificate on the basis of which a person could apply for an HBS coaching licence.

HBS currently has a 2026 Decision on coaching licences in its official document register, so the licensing mechanism remains active.

There is no HBS-accredited programme that awards a qualification specifically called 'BMX Freestyle Coach', nor a separate HBS BMX Freestyle coaching licence. Instead, the formal qualification is cycling coach, while BMX Freestyle is a recognized competitive discipline within HBS.

Therefore, the Croatian pathway is: formal cycling qualification → HBS coaching licence → BMX Freestyle specialization through experience/specialist education.

Croatian coaches can also potentially develop their BMX-specific expertise internationally. The Union Cycliste Internationale operates coach education through the UCI World Cycling Centre in Aigle. The WCC has run coach-diploma programmes combining theoretical and practical education, including BMX/off-road disciplines. It has also run BMX Freestyle-specific training camps involving athletes, coaches and judges, with classroom theory followed by practical work in the UCI BMX Freestyle Park.

So for someone wanting to become a genuinely specialized BMX Freestyle coach, UCI/WCC education is another avenue beyond the Croatian Level 1 qualification.

The missing piece is a standardized Croatian BMX Freestyle-specific coaching certification analogous to what exists elsewhere. For example, British Cycling has a dedicated Introduction to Coaching – BMX Freestyle qualification that explicitly covers coaching body position, carving, jumping, one-handers, one-footers, no-footers and safe coaching in indoor/outdoor freestyle parks. Croatia does not appear to have an equivalent HBS qualification at present.

› SLOVENIA

Slovenia has formal licensing routes for cycling professional staff through KZS, but a separate qualification specifically designated for BMX Freestyle doesn't exist. KZS licensing rules include qualifications such as 'Mountain and BMX Cycling Instructor/Guide – Professional Worker 1' and 'Mountain and BMX Cycling Coach/Guide – Professional Worker 2'.

Professional staff must complete the annual KZS licensing seminar; anti-doping e-learning is required every two years, and the KZS professional licence is valid for one calendar year. Broader formal sport-worker education is also available through the Olympic Committee of Slovenia.

BMX Freestyle-specific informal/specialist education is available through peer learning and several clubs.

› MALTA

Malta has general formal pathways for obtaining recognised sports coaching qualifications through institutions such as the University of Malta and MCAST, as well as technical qualifications certified by recognised national or international sport organisations. However, there are no cycling nor BMX Freestyle-specific coaching qualifications or a clearly defined Malta Cycling Federation licensing pathway. A formal qualification that allows you to work as a cycling coach in Malta can be obtained by requesting access to such opportunities through the cycling federation. Applicants for public-

sector cycling-coach positions must meet general coaching/education requirements and additionally have at least five years' experience as a cyclist and proof of having competed in cycling or another bicycle sport.

Consequently, BMX-specific coaching competence appears to depend substantially on practical experience, federation/association involvement and informal knowledge transfer in addition to general coaching education.

› **ESTONIA**

BMX Freestyle coaching licensing in Estonia runs through the general cycling coach system. The Estonian Olympic Committee (EOK) issues all coach qualifications, with the Estonian Cycling Federation (EJL) managing evaluation. Levels range from Assistant Coach (EKR 3) to Elite Coach (EKR 8) — there is no BMX Freestyle-specific track.

EJL holds an annual coaches' training seminar for qualification and renewal. At the international level, the UCI's Solidarity Programme funds coaching education for national federations, which EJL could tap into.

In practice, the formal infrastructure is minimal — one or two registered BMX coaches in the national sports register — and most knowledge transfer happens informally through the riding community.

2.3 NUMBER AND TYPE OF BMX FREESTYLE EVENTS

› **FRANCE**

FFC's official calendar counts multiple national BMX Freestyle Coupe de France rounds and the French Championships, while FISE organizes the 2026 UCI BMX Freestyle Park World Cup at Montpellier. The numbers are as follows: 7 national formal events, 1 × World Cup (FISE Montpellier), 5 × French Cup rounds and 1 × French National Championships.

The World Cup hosts about 300 riders; in other national events around 100 riders participate.

In addition, there are many informal events — approx. 7–8 national-level events with around 50 riders per event: Astrolabe, FISE Metropole events (3 to 5 per year), FISE Experience series, OutdoorMix, Fight for your Fam.

› **CROATIA**

Croatia currently has a very small BMX Freestyle competition calendar: roughly 2 significant organized competitions per year, plus occasional informal jams, shows and youth/community events that are not consistently documented.

The two recurring competitive pillars are Pannonian Challenge in Osijek and the Croatian National BMX Freestyle Championship, currently associated with School2Rock in Varaždin.

Pannonian Challenge in Osijek is by far Croatia's largest BMX Freestyle competition. It is a formal UCI competition, currently classified UCI C1 (Class 1) BMX Freestyle Park, meaning riders can earn UCI ranking points. UCI confirms the event ran with Men Elite Park and Women Elite Park C1 competitions.

Participation is substantial by Croatian standards. Within the last 5 years there were approx. 45 BMX entries, making BMX the largest sporting category at the festival.

Croatian National BMX Freestyle Championship in Varaždin, formally organized by the Pannonian association and now included in the School2Rock project, is Croatia's principal formal domestic championship.

HBS's official results show up to five Elite riders, which illustrates one of the major issues for Croatian BMX Freestyle: the domestic licensed competition pool is extremely small, even though Pannonian Challenge can attract dozens of international riders.

› SLOVENIA

The formal BMX Freestyle competition calendar is small. A reasonable baseline is approximately one official Slovenian National Championship per year, supplemented by occasional informal/community urban-sport events and international competition abroad.

The 2024 and 2025 Slovenian National Championship in BMX Freestyle Park had no more than 20 competitors from 5 clubs participating. It was formally organized by the Pannonian association and in recent years (2025 title event) was held in Varaždin, Croatia, which illustrates both cross-border cooperation and the limited domestic calendar.

Ljubljana also runs youth-oriented KoloPark events and similar community activities that expose young riders to BMX and competition, but these are not necessarily BMX Freestyle contests and therefore should not be counted as formal BMX Freestyle championships.

› MALTA

The opening of Paola Skatepark in 2026 materially improves the event base by providing a permanent purpose-built venue. However, there is no formally designated national BMX Freestyle Championship sanctioned within the Malta Cycling Federation/UCI structure.

There are organised BMX Freestyle competitions such as the national MSSA Paola Skatepark BMX Championship and Malta BMX Xmas BMX Fest, as well as the international Urban Sport Festival and a BMX Freestyle competition at Pembroke Indoor Skatepark. National events mentioned are formal competitions and have Beginners and Advanced categories. International competitions are organized as open contests, so any Elite rider participation consequently serves an important community-building and role-model function since the direct performance-development benefit is limited.

Usually between 20–30 BMX riders compete in national MSSA events.

› ESTONIA

An official Estonian BMX Freestyle Championship is noted within the EIJ calendar and organized by the Simple Session team in 2026, including Street and Park disciplines.

There are other formal contests, to name a few: **Simple Session**, Estonia's flagship international BMX Freestyle event, including Street and Park disciplines (about 60 leading professional riders from around 35 countries participate together with about 10 Estonians); **Kicking Concrete**, an annual action-sports competition with a strong community-oriented character, includes around 25 riders; **Peetri Battle**, a local skatepark competition open to riders broadly, includes Street and Park, particularly relevant as a grassroots/community-level competition opportunity; and **Street Jams**, informal BMX sessions at various street spots and DIY locations, with emphasis on riding together, tricks and interaction between local and international riders.

2.4 SUPPORT FROM LOCAL AND/OR NATIONAL AUTHORITIES AND THE EFFECT OF RECOGNITION

How do local and/or national authorities support BMX Freestyle, and is the support sufficient? How much does the level of recognition of BMX Freestyle in partner countries affect organisations' work?

› FRANCE

BMX is obviously recognized by official authorities but generally is not a top priority at the diplomatic level. BMX still competes politically with sports that attract broader audiences. The support of authorities is helpful but not sufficient for a BMX-focused organization to be fully professional and autonomous.

Support is available through the regular programs that support sport development and sustainability, and it is usually linked to specific actions that are required to address societal challenges — for example, development of cycling and green transportation, social inclusion or gender equality within the ANS / FFC – Projet Sportif Fédéral (PSF) and ANS – Projet Sportif Territorial (PST) funding for clubs.

Clubs can also seek support directly from municipalities, intermunicipal authorities, departments and regions, but these vary considerably by location and such support does not necessarily take the form of financial help but instead can provide facility access, improvement and maintenance of facilities, event support, equipment costs, etc.

The challenge is not the absence of funding mechanisms but rather the ability of small BMX Freestyle organisations to access sufficient, sustained funding due to not fitting in with the policies and having many competitors.

› CROATIA

BMX Freestyle is institutionally recognized in Croatia and can access public-sport support, but the support appears much stronger for elite athletes and major events than for building a broad

grassroots BMX Freestyle system.

At the national level, support mainly flows through Croatia's general sports structure rather than through a dedicated government BMX Freestyle programme. The Ministry of Tourism and Sport finances national sport through umbrella organizations; the Croatian Olympic Committee (HOO), which in turn co-finances national federations and programmes. HOO's regular programme supports preparation and competition, coaching/expert work, equipment, international obligations and federation operations.

Formal recognition matters here. The Croatian Olympic Committee (HOO) has explicitly supported the inclusion of BMX Freestyle athletes in its development system when Marin Ranteš won the BMX Freestyle World Cup in 2018. HOO explained that HBS first had to nominate him before HOO could place him into one of its development programmes — an unusually clear example of why federation recognition matters financially. This pathway eventually contributed to a functioning elite-performance structure: Ranteš became Croatia's first Olympic BMX Freestyle rider at Paris 2024.

The Ministry of Tourism and Sport finances locally organized sport events as well through public calls — this is where Pannonian Challenge gets co-financing from within the big international manifestation funding, but this is not a BMX-specific event even though the majority of athletes competing are BMX riders.

Local support is particularly visible in Osijek and Varaždin, the two main centres identified in the Croatian BMX Freestyle competition structure.

Osijek has a formal public-sport funding system covering youth sport, athlete preparation and competition, sports clubs, promotion of sport, federations, and construction/reconstruction/equipment of sports facilities. Funding is administered through the City and the Osijek Sports Association. That institutional environment is important for BMX because Osijek hosts the Pannonian Challenge, Croatia's principal international BMX Freestyle event. Thus local government support is not simply recognition of BMX as a niche activity — it is connected with hosting an international sporting event and positioning Osijek through sport.

Varaždin similarly provides an important local institutional environment around Marin Ranteš, School2Rock, the Croatian Championship and BMX activities associated with Špancirfest.

Is the support sufficient? For maintaining an elite presence: arguably yes. For developing BMX Freestyle as a sustainable national discipline: not yet.

Croatia has achieved quite a lot with a very small BMX community: a World Cup winner, European medalist and Olympian; a long-running international competition in Osijek; a Croatian National Championship; UCI C1 competition; and recognized HBS representation.

Those are strong outcomes. But when compared with the situation identified in the previous questions, there are clear structural weaknesses: approximately 2 significant events/year, a very small licensed domestic rider base, no clearly established dedicated national BMX Freestyle coaching qualification, concentrated local clubs/programmes, facilities available in certain cities rather than a broad national network, and no substantial multi-round national series.

Croatia has something of an inverted pyramid: international-level achievements at the top, but a relatively narrow development base underneath. BMX Freestyle has achieved formal recognition,

but formal recognition hasn't yet translated into a fully developed domestic sporting ecosystem.

› SLOVENIA

Support is most visible through recognition, public facilities and the general Slovenian sports system rather than through a large dedicated BMX Freestyle funding programme.

A major local example is the City of Ljubljana's Center urbanih športov Stožice, opened in 2024 as Slovenia's first covered public urban-sports facility; approximately 1,350 m² is intended for skateboarding, inline/roller sports, BMX Freestyle and scooters and enables year-round recreation and training. Ljubljana also supports KoloPark/pump-track programmes aimed at children and young people.

BMX Park Tržič, specifically designed as a BMX Freestyle Park training facility, has an interesting story behind it as a community-led public-private/in-kind development model, rather than a publicly funded BMX centre. It is a community/private-club-led project with important municipal in-kind/infrastructure support, followed by a largely self-financed operating model.

It demonstrates both the strength and weakness of community-led BMX development.

A small BMX community managed to transform an abandoned industrial hall into a specialized high-performance BMX Freestyle facility worth perhaps €200,000 when contributed labour is considered, with only about €80,000 spent on materials. It subsequently supported grassroots riders, clubs and internationally elite athletes.

The model depends on volunteer/community labour, a favourable private rental agreement and a small number of highly committed individuals. Because the organization operating the facility doesn't control the building, a commercial rent increase could threaten the entire national-level training facility.

That connects directly to the structural issues: recognition and municipal goodwill do not necessarily equal sustainable infrastructure financing.

Nationally, formal KZS recognition enables championships, licences, national-team representation and integration into the UCI structure. However, the limited domestic competition and coaching structure suggests support is not yet sufficient to create a broad national BMX Freestyle development pathway.

› MALTA

Local and national authorities in Malta have historically given limited attention to the development of BMX Freestyle, particularly when compared to more traditional sports. While there has been some recent progress — most notably the construction of Malta's first professional skatepark in Paola — this only took place after more than 40 years of BMX presence and activity in Malta. This highlights the lack of long-term investment and strategic planning dedicated to the sport.

At present, support structures and training facilities for BMX riders remain insufficient. Malta still lacks basic progression infrastructure commonly found in more developed BMX scenes, such as foam pits, resi ramps, and dedicated training environments that allow riders to safely develop advanced

skills. As a result, rider progression is often limited, and athletes are required to seek opportunities abroad to train at a higher level.

The level of recognition BMX Freestyle receives nationally has a direct impact on our organisation's work. Limited recognition often makes it more difficult to access resources, develop facilities, secure structured support, and create clear development pathways for athletes. Despite BMX being an Olympic discipline, the sport is still not fully understood or prioritised within existing sports structures. This has required organisations like ours to take a more active role in advocating for facilities, organising grassroots initiatives, and building opportunities independently to help grow the local BMX scene.

› ESTONIA

In Estonia there are options for public funding through broader sport and non-profit support programmes. Municipalities are particularly important: Tallinn, for example, provides grants for local competitions, recreational sport events, international sport projects and youth sport development, but organisations must compete within the wider sports sector and frame their activities according to broader public-policy objectives such as youth participation, competitive development, international events or community physical activity. Access to those depends not only on formal recognition of the discipline but also on organisational capacity to prepare applications, co-finance projects where required and align BMX-focused activities with municipal or national funding priorities.

In regard to infrastructure, pump tracks have gained in popularity and facilities are being built in numerous municipalities. Tartu has made significant public investment in cycling and action-sport infrastructure at Tähtvere Recreation Park. The Tartu Bike Park complex includes a BMX Racing track, pump track, concrete skatepark suitable for BMX Freestyle, and a newer mountain-bike skill park, providing progression opportunities for riders from recreational to more advanced levels.

In conclusion, the issue is not that public funding mechanisms are absent, but rather that there is limited structural funding for year-round coaching, club development and athlete pathways. Event organisers appear to have better opportunities to obtain project-based support than, for example, a small sports club seeking stable operational funding.

2.5 MAIN STRUCTURAL OR SYSTEMIC CHALLENGES LIMITING BMX FREESTYLE DEVELOPMENT

Moving beyond formal recognition, we wanted to assess how effectively national ecosystems support continuous development. Considering connected barriers related to coaching education, club structures, organisational coordination, access to competitions and appropriate facilities, cultural integration, volunteer dependency, and athlete progression and retention. Together, these factors could help identify where gaps between recognition and practical development capacity continue to restrict the sustainable growth of BMX Freestyle.

> FRANCE

The two main structural challenges are lack of BMX Freestyle-specific infrastructure and limited availability of professional coaching with relevant skills.

Firstly, there is a lack of BMX Freestyle-specific infrastructure. While some high-quality skateparks exist, they are unevenly distributed across the territory. This limits both grassroots access and the progression pathway for riders aiming to reach competitive levels.

Secondly, there is a limited availability of qualified professional coaches with BMX Freestyle-specific expertise. Although formal certifications such as the DEJEPS BMX exist, they are relatively demanding and not widely accessible, resulting in a small pool of professional coaches. As a result, many clubs rely heavily on volunteers, which can create inconsistencies in training quality and limit long-term athlete development.

Additionally, the integration of BMX Freestyle within a broader cycling federation can sometimes lead to a lack of dedicated strategic focus for the discipline, especially compared to more established cycling sports. This affects coordination between stakeholders, as well as the development of tailored programs for Freestyle.

Accessibility is also an issue — limited access to structured training environments, financial constraints for participants, uneven access to competitions depending on geographic location, etc. While events do exist, consistent participation at a national level can be challenging for riders.

There is a strong dependency on volunteer engagement, which, while valuable, can limit the professionalization and sustainability of clubs and development programs. This also contributes to challenges in talent identification and retention, as pathways are not always clearly structured or supported.

> CROATIA

BMX Freestyle is recognized within Croatian cycling, has a national championship, international UCI competition and an Olympic pathway. The problem is that this recognition has not yet translated into a sufficiently broad development system underneath the elite level.

The result is a relatively fragile structure: Croatia can produce internationally successful riders and major events, but the pathway from young rider joining a club, having access to an appropriate coach, later participating in domestic competition following national events, and growing into an international athlete contains several gaps.

A very small grassroots and club base means a small number of riders, clubs and local BMX Freestyle programmes. Activity is concentrated around a few centres rather than being distributed through a national network. This creates a circular problem. A small rider population makes it difficult for clubs to justify dedicated BMX programmes, employ coaches or organize competitions. In turn, the absence of clubs, coaches and competitions makes it harder to recruit and retain new riders.

The very small rider pool seen in the Croatian Championship results illustrates this. By contrast, Pannonian Challenge can attract around 40 BMX riders because it draws internationally. Croatia

therefore has a considerably larger event profile than its domestic competitive rider base would suggest.

The coaching pathway is formally available but insufficiently BMX-specific — there is no clearly established national qualification specifically for BMX Freestyle coaching. That distinction matters because coaching BMX Freestyle requires knowledge that a general cycling qualification cannot necessarily provide in sufficient depth: progressive trick development, skatepark movement, jump progression, risk management, spotting, equipment, psychological management of fear and progression, and age-appropriate teaching of technical skills. Experienced riders therefore become extremely important knowledge carriers.

Approximately two significant formal BMX Freestyle competitions per year is insufficient for a mature domestic competition system.

Pannonian Challenge provides an excellent international benchmark, while the Croatian Championship provides a national title. But there is little in between. A young Croatian rider ideally needs something like: local jams, beginner competitions, regional series, national cup rounds, Croatian Championship, international competitions.

Accessibility and facility inequality is also insufficient, as BMX Freestyle is unusually dependent on specialized infrastructure.

Freestyle progression depends heavily on access to appropriate ramps, quarters, spines, boxes, resi/foam facilities and sufficiently safe progression features. Having a skatepark does not automatically mean having an appropriate BMX training facility. This creates geographical inequality. Riders living near established BMX centres have access to community, experienced riders and facilities. A talented teenager elsewhere may have no appropriate park, no BMX coach and no local club programme. Travel therefore becomes part of training, increasing costs for riders and parents and reducing participation outside established centres.

Overall weak coordination across the BMX ecosystem distributes responsibility across several layers: HBS, clubs, BMX representatives/committee structures, national-team coaching, event organizers, municipalities/local sports associations, HOO, individual riders and volunteers. Each institution has a legitimate role, but BMX Freestyle is small enough that fragmentation is a serious problem.

Heavy dependence on individuals and volunteers may be one of the largest hidden vulnerabilities. Small action-sport communities often function because a few highly motivated people simultaneously act as riders, coaches, organizers, club administrators, event promoters and advocates with municipalities. That can produce nice results with limited financing, but it is difficult to sustain. If one key player stops organizing, moves away, becomes injured or simply burns out, a substantial part of the local ecosystem can disappear.

BMX Freestyle competes for limited resources with much larger cycling disciplines and established sports. Its small number of licensed participants can itself become a disadvantage when funding decisions depend on participation, club numbers, competition activity or historical institutional presence.

Informal BMX culture and formal sport do not always fit neatly together. A large proportion of BMX Freestyle culture develops through informal sessions, peer learning, jams and skatepark communities, rather than conventional club training. That is one of the sport's strengths and should not simply be replaced with traditional sports structures. However, it creates difficulties since a highly skilled rider may not belong to a club, hold a licence or train under a licensed coach. Informal riders may see federation procedures as unnecessary bureaucracy, while sports authorities may struggle to support riders who remain outside formal structures.

Croatia's international success is simultaneously an advantage and a potential distortion. Having internationally successful riders — most notably Marin Ranteš — and a flagship event such as Pannonian Challenge gives Croatian BMX Freestyle visibility far beyond what would normally be expected from such a small domestic base. But individual excellence does not demonstrate system strength, because recognition is high at the top but weaker at grassroots level.

Institutionally, BMX Freestyle has a very strong argument: it is a UCI discipline and Olympic sport, Croatia has a National Championship, Pannonian is a UCI event, and Croatia has produced an Olympic BMX Freestyle athlete. Yet at the local level BMX is still perceived primarily as youth culture, skatepark recreation or an 'extreme sport' rather than organized competitive sport. That perception affects discussions with municipalities, schools, parents and potential sponsors.

The critical question is therefore not simply 'Can Croatia produce an elite BMX rider?' — it demonstrably can. It is 'Can the system consistently take 10–14-year-old beginners and develop several of them into high-level riders?' The evidence suggests it can't.

› SLOVENIA

The main systemic challenge is the gap between formal recognition and the size of the development ecosystem. Slovenia has KZS/UCI recognition, talented international riders and improved facilities, but the domestic BMX Freestyle base remains small.

Key constraints are: a limited number of clubs and licensed riders, very few formal BMX Freestyle competitions, no clearly identified stand-alone BMX Freestyle coaching qualification, dependence on broader MTB/BMX coach education plus informal rider-to-rider knowledge, concentration of suitable facilities and expertise in a few locations, reliance on motivated individuals, clubs and volunteers, and the high cost of travelling abroad for stronger competition and training. Coordination is improving through KZS, clubs and projects, but the small ecosystem makes continuity vulnerable when key individuals step away.

Cultural perceptions can also matter, since BMX Freestyle still overlaps with informal skatepark/urban culture, so some riders may remain outside formal club structures. For talent retention, promising riders need regular high-level facilities, coaching and international competition; if these are not available domestically, development becomes dependent on travel and personal resources.

› MALTA

The main structural challenge currently limiting the development of BMX Freestyle in Malta is the lack of long-term investment and strategic focus on the areas most essential for the sport's growth,

particularly infrastructure and athlete development facilities.

This situation reflects broader governance and development challenges within the sport. Greater emphasis has been needed on creating sustainable infrastructure, supporting grassroots participation, and establishing clearer development opportunities for riders. As a result, much of the effort to grow the BMX scene, organise events, advocate for facilities, and create opportunities for athletes has relied heavily on independent initiatives and community-driven organisations rather than structured national development systems.

› **ESTONIA**

The core problem is that BMX Freestyle has quite a tight grassroots culture but almost no formal infrastructure to sustain it.

There is no coaching pathway. Because the discipline sits inside the general cycling coaching system with no Freestyle-specific track and only one or two registered BMX coaches nationally, there is no clear route for an experienced rider to become a qualified, employable coach. Knowledge stays informal and undocumented.

Club structure is weak, as there are very few registered Freestyle clubs, so there is little continuity between learning to ride, training regularly, and entering competitions. Activity is event-driven rather than season-driven.

Volunteer dependency is strong. Combined with very few full-time staff and a heavy reliance on part-timers and external collaborators, the whole ecosystem depends on a small number of committed individuals. This limits scale and makes it fragile to burnout or people leaving the scene.

Public support and recognition is limited. Authorities have invested in facilities such as pump tracks and the Tartu trail park, but day-to-day support for coaching, clubs and athlete development is minimal. Because Freestyle is still treated as a marginal discipline rather than an Olympic sport, funding and institutional attention lag.

Talent retention is a big issue. In a small country like Estonia, the most promising riders quickly run out of domestic competition and structured progression, so they either move abroad or drop off. Without coaching and club continuity to catch them, the talent pipeline leaks at exactly the point where it should be strongest.

3 BEST PRACTICES AND TRANSFERABILITY

Let us examine training, coaching or athlete development best practices in partner countries and explore other examples worldwide.

3.1 BEST PRACTICE EXAMPLES IN PARTNER COUNTRIES

► FRANCE

A best-practice example for BMX Freestyle coaching development in France is the structured coach-education pathway, which combines professional and volunteer training systems. The existence of a nationally recognised professional qualification such as the DEJEPS BMX provides coaches with competencies in technical and pedagogical coaching, safety, performance development and project coordination.

The professional pathway also develops competencies beyond direct athlete coaching, including the design and coordination of development projects, pedagogical and logistical responsibility, and coordination of professional and volunteer teams. This provides coaches with skills that can contribute not only to athlete development but also to the organisation and development of BMX activities within clubs and other sports structures.

At the same time, FFC federal training programmes provide an accessible pathway for volunteer coaches. The Éducateur fédéral qualification includes a specific BMX Freestyle specialisation and develops competencies in technical instruction, session and learning-cycle design, physical preparation and introduction to competition, while the Entraîneur fédéral level develops more advanced competencies in training planning and performance development.

Together, these professional and federal pathways create a progressive coaching ecosystem in which experienced riders and volunteers can develop formal coaching competencies, while those wishing to work professionally can progress toward the qualifications required for professional coaching. This supports continuity of coaching capacity from grassroots participation through to competitive and high-performance development.

In terms of athlete development, FFC's integrated development ecosystem around Montpellier, centred on the Pôle France Olympique BMX Freestyle, is a best practice example. Riders normally remain in the programme for at least two to three years and receive individualised performance planning and multidisciplinary support. The current structure includes BMX coaching as well as physical, mental and medical support. It is the integrated athlete and coach-development system that has the biggest value. Its main strength is the connection between different stages of development: riders can progress through club and development structures toward high-performance training and national/international competition, while coaches can access formal professional education within the same BMX Freestyle environment. The specialised 'tricks learning' facilities, including soft landings and a foam pit, further support progressive and controlled skill acquisition before tricks are transferred to competition-style conditions.

› CROATIA

A good Croatian best-practice example is the athlete-development ecosystem built around Pannonian Challenge and the Osijek BMX community. What makes it particularly relevant is that it combines the informal learning culture of BMX Freestyle with exposure to elite international competition.

Rather than relying exclusively on conventional coach-led sessions, riders develop through regular park riding, peer-to-peer learning, observation of more advanced riders, progressive experimentation and mentoring by experienced athletes. The Pannonian Challenge then brings international elite riders into the same environment, giving Croatian riders direct exposure to higher technical standards and competition practices. The event has developed into a UCI-level BMX Freestyle competition while remaining connected to the local action-sports community.

A particularly strong aspect of this approach is progressive, rider-centred skill development. Riders generally learn tricks incrementally — first establishing bike control and basic movements, then transferring skills to increasingly difficult obstacles and combinations. More experienced riders provide demonstrations and practical feedback, while the athlete retains considerable autonomy over when to attempt the next progression. This fits BMX Freestyle well because technical progression, confidence and risk perception differ substantially between individuals.

Another positive element is the connection between grassroots riders and elite performers. Croatia is a small BMX community, so young riders can potentially train, interact or participate in events alongside riders who compete internationally. The career of Marin Ranteš provides an especially visible development reference: he progressed through the Croatian BMX environment to World Cup success and ultimately became Croatia's first Olympic BMX Freestyle rider. That creates a tangible pathway for younger athletes rather than an abstract international benchmark.

› SLOVENIA

Multidisciplinary athlete development around BMX Park Tržič in connection with Jaka Remec — this is best understood as an elite/individual athlete-development best practice, not evidence of a standardized Slovenian national coaching system, since Slovenian BMX Freestyle is still developing institutionally.

The model combines BMX-specific technical coaching, strength and conditioning, motor-skills development, specialized progression infrastructure, and international competition exposure.

Jaka combined early-morning physical preparation with a strength-and-conditioning coach, motor-skills training at a climbing centre, school, and BMX-specific riding later in the day. The objective was explicitly long-term athlete development rather than preparation only immediately before competitions.

By 2021, Jaka identified his development team as: BMX coach, strength & conditioning coach, parent/team support and organization. Jaka specifically credited this team when describing his development after becoming a Red Bull athlete.

Specialized infrastructure was part of the methodology. BMX Park Tržič was designed not simply as somewhere to ride, but as a progression environment. Its founders stated that it would contain the elements necessary for high-level BMX Freestyle training while also allowing them to progressively introduce talented children to the sport. The park's foam pit is particularly relevant as a coaching practice. Jaka later described Tržič as a place where he could learn new tricks without crowds and as the only BMX/MTB facility of its kind in Slovenia and the surrounding area with a foam pit.

› MALTA

One of the strongest athlete development practices currently taking place in Malta is the Urban Sports Festival, organised annually to bring together local and international athletes across various urban sports disciplines, including BMX Freestyle.

The festival plays a significant role in athlete development by creating opportunities for local riders to compete directly alongside experienced international athletes. This exposure not only motivates local riders to improve their level and progression but also allows them to experience different riding styles, techniques, and approaches to using the skatepark environment. Watching and interacting with foreign athletes provides valuable learning opportunities that are otherwise difficult to access within a small local scene.

Beyond competition, the festival creates an environment focused on exchange, inspiration, and community learning, helping local athletes broaden their perspective on BMX and encouraging higher standards within the sport locally.

› ESTONIA

The strongest practice in our context is using a world-class event as a development engine. Simple Session brings around 60 of the best riders from 35 countries into the same space as roughly 10 Estonian riders, plus open practice sessions, jams and a public skate/BMX hall. Local riders progress not through a formal curriculum but through direct exposure: watching, sharing the same obstacles, and getting informal coaching and feedback from elite athletes during practice.

Alongside this, the most relevant grassroots education practice in Estonia has been BMX Akadeemia in Tartu, founded in 2014 as the country's first Freestyle school, combining hands-on workshops, demos and Estonian-language video tutorials. Together these show a model where event culture and community-led teaching substitute for the formal coaching structures we lack. BMX Est (led by Kaspar Peek) is a new initiative doing similar work, as is Breakless BMX School (led by Janek Markovski).

3.2 BEST PRACTICE EXAMPLES WORLDWIDE

International BMX Freestyle development does not follow a single model. The examples below can be positioned along a continuum from centralised high-performance systems, through market- and community-led decentralised systems, to hybrid models combining federation structure with rider autonomy. The Netherlands/Area51, Italy/H-

FARM and British Cycling examples are best understood not as entirely separate national systems, but as specific operational practices that demonstrate how elements of a hybrid approach can be implemented in a European context.

› 1 CENTRALIZED SYSTEM — CHINA

The Chinese model is based on state institutionalism and a strict methodological hierarchy. The focus is on the elimination of variables and the maximization of technical precision.

- **Talent identification** — early and structured selection based on physical and motor-learning potential; a documented 15–25-year age selection programme evaluates flexibility, balance, reaction ability, physical capacity and learning ability, with talent also recruited from sports such as gymnastics, trampoline and diving.
- **Training methodology** — integration of gymnastic elements for the development of rotational stability. The ‘rule of 90%’ applies — the trick is not performed in a competitive environment until it achieves a landing success of at least 90% in controlled conditions.
- **Operational practice** — unique national curriculum. Coach as supreme authority; the athlete as a precise executor.
- **Infrastructure** — Shanghai Urban Sports Center, Chengdu Extreme Sports.

Advantages: rapid production of competitive riders; extreme consistency and low error rate.

Challenges: limiting individual ‘freestyle’ identity; poorer adaptation to changes in competition format.

› 2 DECENTRALIZED SYSTEM — USA

The American system rests on the market model, private initiatives and the tradition of sports. Development is organic, and innovation is the primary driver of success.

- **Talent identification** — through local competitions (jams), private parks and digital platforms. The system recognizes creativity and style as key factors.
- **Training methodology** — session-based approach. The emphasis is on the research of new lines and high-risk elements that bring a point advantage through originality.
- **Operational practice** — pluralism of methodologies (each training center has its own philosophy). Financing primarily through sponsorships and private capital.
- **Infrastructure** — Woodward Camps, Daniel Dhers Action Sports Complex.

Advantages: high level of innovation and creativity; wide range of technical skills.

Challenges: dependence on private sponsors rather than the system; significant variability in performance quality.

› 3 HYBRID / COMBINED SYSTEM — AUSTRALIA

The Australian model represents a synergy of state support and individual freedom of expression. Considered the most balanced approach for the long-term development of athletes.

- **Structure** — the national association (AusCycling) provides top infrastructure and scientific support, while riders retain autonomy in creating their own style.
- **Training methodology** — combination of structured blocks (driving simulations) and free sessions for the development of creativity. There is a special focus on psychological preparation and video analytics.
- **Operational practice** — mixed financing (state grants + private sponsors) and individualized programs within the national framework.
- **Infrastructure** — BMX Freestyle National Training Center – Gold Coast, JK Coaching (private sector).

Advantages: high level of adaptability and stability; balance between technical difficulty and individual style.

Challenges: complex coordination between the federation and private entities; high system maintenance costs.

› 4 FACILITY-CENTRED HYBRID SYSTEM — NETHERLANDS

The Dutch example demonstrates a hybrid model centred around a high-quality urban-sports facility, where grassroots BMX culture, structured coaching, talent identification and elite training can coexist within the same environment.

- **Talent identification** — naturally through the local skatepark and BMX community, or more structured scouting conducted by the KNWU and TeamNL.
- **Training methodology** — combination of regular independent sessions, peer-to-peer learning and structured coaching. Talented and professional riders can train within the same environment, allowing informal knowledge exchange to complement federation-led development.
- **Operational practice** — independent urban-sports facility connected with federation and high-performance structures. Grassroots participation and elite training coexist rather than being completely separated. Federation coaches can use an established community facility for talent development.
- **Infrastructure** — Area51 Eindhoven, a major indoor urban-sports facility providing BMX/skatepark environments suitable for different ability levels and advanced progression.

Advantages: connects grassroots participation with elite development; preserves the social and cultural environment of BMX; makes efficient use of one specialist facility for several development levels; allows federation structures to interact directly with the existing BMX community.

Challenges: strong geographical concentration around one major facility; riders outside the region may have unequal access; success depends on sustained cooperation between independent facilities and formal sport organisations.

› 5 INFRASTRUCTURE–FEDERATION PARTNERSHIP MODEL — ITALY

The Italian example demonstrates a hybrid partnership between private infrastructure, youth development and the national cycling federation. Instead of relying entirely on publicly owned national training facilities, specialist BMX infrastructure can be developed through cooperation with private organisations.

- **Talent identification** — young riders enter BMX through regular recreational and educational programmes, while talented athletes can progress toward federation and national-team structures. Talent identification is therefore connected to participation rather than based exclusively on centralised selection.
- **Training methodology** — structured BMX sessions; coaching can combine group learning, individual progression and exposure to experienced competitive riders.
- **Operational practice** — cooperation between private infrastructure, the Italian Cycling Federation and specialist park developers. Private infrastructure supports federation high-performance objectives. The same broader environment can accommodate youth participation and elite training.
- **Infrastructure** — H-FARM BMX Freestyle Park, developed as an international/competition-level facility and used as an official training environment for the Italian BMX Freestyle national team.

Advantages: mobilises private investment for specialist BMX infrastructure; connects grassroots participation with national-team activity; reduces the need for the federation to independently develop all infrastructure; creates opportunities for young riders to encounter high-level athletes and facilities.

Challenges: dependence on long-term commitment from private partners; geographical concentration of specialist infrastructure; a high-quality facility alone does not create a complete national athlete-development pathway; access and affordability need to be maintained for grassroots riders.

› 6 COACH-DEVELOPMENT HYBRID SYSTEM — GREAT BRITAIN (BRITISH CYCLING)

The British model provides a strong example of a nationally structured but locally delivered BMX Freestyle coaching system. Rather than concentrating development around one training centre, British Cycling establishes common coaching competencies while coaches deliver training within local clubs, skateparks and BMX communities.

- **Talent identification** — recognised progressively through local coaching environments rather than only through national selection events. Developing a distributed network of trained BMX Freestyle coaches increases the possibility that promising riders can be identified and supported within their local communities.
- **Training methodology** — the ‘Introduction to Coaching – BMX Freestyle’ pathway establishes foundation coaching competencies covering fundamental BMX Freestyle skills and safe session delivery. Coaches can subsequently progress to Coaching in Context – BMX Freestyle, which addresses more advanced skills and the development of riders from recreational toward competitive levels.
- **Operational practice** — a common national coaching framework established. Training delivery remains decentralised through local coaches and facilities. Coach development is progressive

and modular. Coaches build practical experience between qualification levels.

- **Infrastructure** — Adrenaline Alley (Corby), Asylum Skatepark (Sutton-in-Ashfield), Graystone Action Sports Academy (Manchester), Junction 4 Urban Sports Village (Blackburn/Darwen), F51 (Folkestone).

Advantages: highly transferable to countries with relatively small BMX communities; creates minimum standards for safety and coaching competence; provides a pathway for experienced riders to develop as coaches; allows coaching capacity to be distributed geographically; can strengthen local clubs without requiring expensive central infrastructure.

Challenges: qualified coaches still require appropriate facilities and sufficient numbers of riders; small BMX communities may struggle to provide enough coaching hours for progression to advanced levels; standardisation must remain flexible enough to preserve creativity and individual riding styles; coach education alone cannot solve weaknesses in competition or facility structures.

3.3 TRANSFERABILITY TO PARTNER COUNTRIES

The six identified models provide different elements that could be transferred to France, Croatia, Slovenia, Malta and Estonia, but their transferability varies according to the size, resources and institutional maturity of each national BMX Freestyle ecosystem. Rather than replicating any model in full, the most appropriate approach would be to combine selected elements into a flexible European hybrid model, particularly because the partner-country research shows substantial differences in coaching capacity, facilities, competition opportunities and organisational structures.

The Chinese centralised model is the least directly transferable as a complete system because it requires substantial public investment, centralised athlete selection, specialist facilities and professional coaching structures. Nevertheless, its principles of structured technical progression, controlled skill acquisition and multidisciplinary preparation could be adopted by national teams and advanced athlete programmes, particularly in France and potentially Croatia or Slovenia. In smaller countries, these methods could be implemented for selected athletes without creating a full centralised national system.

The USA's decentralised model is already culturally close to how BMX develops in Croatia, Slovenia, Malta and Estonia. Local parks, peer learning, jams, experienced riders and informal mentoring are important parts of these countries' existing ecosystems. Its most transferable feature is therefore the recognition of rider autonomy, creativity and community knowledge as legitimate components of athlete development. However, relying entirely on this model would reinforce existing problems such as inconsistent coaching quality, volunteer dependency and unequal access to facilities.

The Australian hybrid model offers the strongest overall direction for the partner countries because it combines structured development with individual Freestyle identity. France has the strongest capacity to implement such a system comprehensively, while Croatia, Slovenia, Malta and Estonia could adopt it on a smaller scale through national development camps, shared specialist coaches, individual athlete programmes and international exchanges rather than establishing expensive permanent national training centres.

The Area51 model from the Netherlands is particularly transferable to countries where BMX communities are small and resources need to be concentrated. Its main principle is that a high-quality facility can simultaneously serve grassroots participation, regular training, talent identification and elite development, while maintaining the social character of BMX. Existing facilities or development hubs in Croatia, Slovenia, Malta and Estonia could progressively adopt this approach rather than attempting to construct separate grassroots and elite centres.

The Italian H-FARM model demonstrates another highly relevant solution: partnerships between federations, private organisations, municipalities and facility operators can overcome the limited financial capacity of small BMX organisations. This could be especially valuable in Croatia, Slovenia, Malta and Estonia, where specialist infrastructure is limited and individual BMX organisations are unlikely to finance advanced training facilities independently. Its transfer would require clear long-term agreements ensuring that privately supported facilities remain accessible to grassroots riders as well as elite athletes.

Finally, the British Cycling coach-development model is probably the most immediately transferable practice across all five partner countries. A modular BMX Freestyle-specific pathway could allow experienced riders to first acquire foundation coaching and safety competencies and subsequently progress toward advanced athlete-development skills. This would be particularly useful in countries where general cycling-coach qualifications exist but BMX Freestyle-specific education remains limited. Such a programme could complement – not replace – existing national coaching qualifications and provide a common methodological framework covering safe progression, technical instruction, session planning and rider-centred development.

3.4 CONDITIONS NECESSARY FOR SUCCESSFUL TRANSFER

What conditions are necessary to successfully transfer best practice examples in partner countries?

» FRANCE — CONSOLIDATE THE EXISTING HYBRID SYSTEM

The main condition for transfer is better connection and distribution of existing resources: strengthening links between FFC coach education, clubs, specialist Freestyle facilities and the Montpellier high-performance pathway, while making advanced coaching and progression opportunities more geographically accessible. Area51's facility-centred approach could be particularly relevant outside Montpellier: selected regional Freestyle hubs could connect grassroots sessions, coach education, talent identification and advanced training.

Conditions required: stronger regional BMX Freestyle hubs; continued investment in specialist progression facilities; accessible pathways from volunteer to professional coaching; coordination between clubs and high-performance structures; and mechanisms ensuring that promising riders outside major BMX centres can enter national development pathways. Another key condition is raising awareness among BMX Freestyle stakeholders of their value. Helping coaches, clubs, and organisations understand that these practices benefit both sport performance and long-term development is essential to encourage their adoption and motivate individuals to engage in education and training.

› CROATIA — FORMALISE THE STRENGTHS OF AN EXISTING COMMUNITY/EVENT MODEL

Croatia already possesses one half of the hybrid model. BMX Freestyle is formally recognized through HBS, there is a National Championship, UCI competition through Pannonian Challenge and an Olympic/high-performance pathway. What is missing is the depth underneath it.

The most useful transfer would therefore combine British Cycling's modular coach education with the Australian hybrid philosophy. Experienced Croatian riders could be trained as BMX Freestyle-specific coaches or mentors without eliminating the existing peer-learning culture. Pannonian Challenge could also be developed more deliberately as an athlete-development platform through clinics, coach workshops, junior development camps and structured interaction with international riders.

Conditions required: recognition of experienced riders as potential coaches; a BMX Freestyle-specific education module connected to existing Croatian cycling qualifications; stronger cooperation between HBS, clubs and Pannonian; additional grassroots/intermediate competitions; access to advanced progression infrastructure; and stable support for year-round training rather than concentrating resources primarily around major events.

› SLOVENIA — CONNECT EXISTING EXPERTISE AND FACILITIES INTO A PATHWAY

Slovenia already contains elements of several best-practice models but they are fragmented and small-scale. The Tržič BMX Park example demonstrates multidisciplinary athlete development involving BMX coaching, strength and conditioning, motor-skills work and specialist progression infrastructure, while the broader system has formal BMX-inclusive coach education but relatively limited Freestyle competition depth.

The Area51 model is particularly transferable. Rather than attempting to establish an expensive national high-performance centre, Slovenia could identify one or two facilities as BMX Freestyle development hubs and connect them with KZS, clubs, experienced riders and coaches. British Cycling's modular Freestyle education could then complement Slovenia's existing MTB+BMX coach qualifications.

Conditions required: identification of suitable national/regional Freestyle hubs; reliable long-term access to advanced progression facilities; a Freestyle-specific module added to existing coach education; stronger coordination between KZS, facilities, clubs and experienced riders; more regular domestic competitions and camps; and financial support for international competition and training where domestic infrastructure cannot provide the required level.

› MALTA — BUILD THE DEVELOPMENT PATHWAY AROUND THE NEW INFRASTRUCTURE

Malta is at an earlier stage of institutional development, but the development of BMX activities around Paola Skatepark provides an opportunity to build a more structured system from the grassroots upward. Because Malta's rider population is small, international mobility should be considered part of the pathway rather than an exception. The objective should not be to reproduce every high-performance facility domestically.

The current partner best practice, the Urban Sports Festival, already uses international athletes to expose local riders to different styles and higher performance levels. SportMalta also has mechanisms for subsidised facility access for eligible registered sport organisations and recognises technical sport qualifications in its coaching framework.

The most suitable combination would be British Cycling + Area51 + H-FARM. British Cycling provides a model for developing a small group of competent local coaches; Area51 demonstrates how one important facility can serve multiple development levels; and H-FARM demonstrates how public/private/federation partnerships can gradually improve specialist infrastructure.

Conditions required: creation of a small core of trained BMX Freestyle coaches — it is essential to have individuals who understand the culture, needs, and long-term development of BMX and urban sports, and who are capable of working collaboratively with athletes, communities, and government bodies — introduction of regular beginner and youth training, development of more advanced training features when possible, and structured international camps/exchanges for elite riders who outgrow the domestic environment.

Strong communication, advocacy, and cooperation between stakeholders are key to ensuring that infrastructure, coaching systems, and development programmes are implemented effectively. While financial investment is important, the long-term success of such initiatives depends even more on strategic planning, knowledgeable leadership, and genuine commitment to the development of the sport and its athletes.

› ESTONIA — CONVERT EVENT CULTURE INTO YEAR-ROUND DEVELOPMENT

Estonia has a distinctive strength: a small domestic scene has direct access to world-class BMX Freestyle. The research describes local riders sharing practice environments with international professionals, while initiatives such as BMX Akadeemia, BMX Est and Breakless BMX School provide community-led education. Estonia also has an official BMX Freestyle National Championship in the 2026 EJC calendar, so there is already a formal federation connection on which to build.

The most relevant transfer would be British Cycling's coach-development model combined with the Area51 facility-hub concept. The existing informal expertise of experienced Estonian riders could be converted into a small network of recognised coaches, while Tallinn and Tartu could function as development hubs.

Several conditions need to be in place. Recognition at federation level, meaning Freestyle needs to be recognised as a discipline and sit within a national cycling body, so coaching qualifications and events have an official framework.

Local riders need to be converted into coaches; in practice this would only work if respected riders from the scene take on the coaching roles, since credibility inside the community is non-negotiable.

Facilities need to be accessible — a usable park, pump track or skate hall to train in year-round, ideally with affordable or free access. Development hubs in existing facilities could be established.

Stable funding and reduced volunteer dependency is needed, at least in the form of some paid coordination, plus support from local or national authorities or programmes such as the UCI Solidarity Programme, so the model does not rest entirely on a few volunteers.

A shared, adaptable curriculum, common coaching materials and a competition calendar that partners can localize would enable progression to continue between events rather than only during them.

CONCLUSION

Taken together, the survey and best-practice research present a consistent picture of BMX Freestyle development: the sport has a strong culture of creativity, peer learning and community participation, but these strengths are not always matched by structured coaching, suitable progression facilities or clearly defined development pathways. The survey shows that many participants continue to learn primarily through self-directed practice and other riders, while also expressing demand for stronger coaching, better infrastructure and more structured opportunities for progression. The desk research reflects the same pattern, particularly in countries where BMX development depends heavily on clubs, experienced riders, volunteers, events and informal knowledge transfer.

The two research strands also converge around the importance of the training environment. Survey respondents identified access to varied facilities, rider communities, interaction with experienced riders and financial support as important development factors. Similarly, the best-practice analysis demonstrates how specialised facilities, organised programmes, international events, camps and cooperation between grassroots organisations and federations can strengthen progression from recreational participation towards competitive and elite levels. France provides the most structured example, while Croatia, Slovenia, Malta and Estonia demonstrate different ways in which community initiatives, facilities, events and international exchange can compensate for less developed formal pathways.

Safety and progression provide another important connection. Survey findings suggest that riders do not simply need access to more training, but to training that supports gradual, technically appropriate progression, particularly as tricks become more complex. This strengthens the case for coach education and shared progression methodologies identified through the best-practice research.

Together, the findings therefore favour a flexible, blended development model rather than a single system imposed across countries. Formal coaching and structured progression can be strengthened without losing the peer learning, creativity and individual expression that are central to BMX culture.

Within this model, VR Freestyle has an opportunity to connect and reinforce existing practices rather than replace them. VR and digital resources can complement coaching, physical facilities and peer learning by providing additional opportunities to understand and visualise complex movements, while shared methodologies, coach education, development hubs, camps, international exchanges and cross-border cooperation can strengthen the wider pathway. The combined research ultimately points towards a European BMX Freestyle ecosystem that is more structured and accessible, yet flexible enough to respond to different national contexts and preserve the distinctive culture of the sport.

APPENDIX A – SURVEY STATISTICAL SUMMARY

Full frequency tables for all closed-ended survey questions (n = 301 valid responses unless otherwise noted), reproduced from the project's statistical summary.

Valid responses: 301

Country of residence: France 🇫🇷 67, Croatia 🇭🇷 48, Malta 🇲🇹 43, Slovenia 🇸🇮 35, Estonia 🇪🇪 29, Germany 🇩🇪 10, USA 🇺🇸 10, Latvia 🇱🇻 9, UK 🇬🇧 6, Spain 🇪🇸 5, Hungary 🇭🇺 3, Finland 🇫🇮 3, Lithuania 🇱🇹 3, Chile 🇨🇱 3, Australia 🇦🇺 3, Czech Republic 🇨🇪 2, Romania 🇷🇴 2, Netherlands 🇳🇱 2, Slovakia 🇸🇰 2, Mexico 🇲🇩 2, Serbia 🇷🇸 1, Italy 🇮🇹 1, Russia 🇷🇺 1, Colombia 🇨🇴 1, Austria 🇦🇹 1, Thailand 🇹🇭 1, Ukraine 🇺🇦 1, Switzerland 🇨🇭 1, Brasil 🇧🇷 1, Greece 🇬🇷 1, Suomi 🇫🇮 1, Philippines 🇵🇭 1, Argentina 🇦🇷 1, China 🇨🇳 1.

BASIC BACKGROUND

› 3 AGE

AGE GROUP	N
Under 12	20
12–16	31
17–21	61
22–29	91
30+	98

› 4 GENDER

GENDER	N
Male	267
Female	34

› 5 PROFILE

PROFILE	N
Rider	209
Former rider	27
Sport professional (Coach, Judge, Delegate and similar)	37

PROFILE	N
Other (Parent, BMX event organisers and similar)	28

SPORT SPECIFIC BACKGROUND

› 6 WHICH BMX FREESTYLE STYLE DO YOU PRIMARILY PARTICIPATE IN?

STYLE	N
Park / Bowl	179
Street	101
Dirt / Vert	16
Flatland	5

› 7 HOW LONG HAVE YOU BEEN PRACTICING BMX FREESTYLE?

EXPERIENCE	N
Less than 1 year	21
1–3 years	49
3–6 years	49
More than 6 years	167
Not applicable	15

› 8 HOW WOULD YOU DESCRIBE YOUR RIDING LEVEL AT THE PEAK OF YOUR BMX JOURNEY SO FAR?

LEVEL	N
Beginner / Entry level (new to BMX riding, basic bike control, learning safety, park etiquette and fundamentals)	26
Novice / Foundation (rides smoothly in the park, simple jumps and basic tricks, starting to link modules together)	36
Intermediate / Development (multiple tricks with variations, links lines intentionally)	94
Advanced / Performance (high air and advanced tricks, strong consistency under pressure)	81
Elite / High Competitive (complex combinations, signature tricks, full performance support)	46

LEVEL	N
None of the above	18

› 9 HOW WOULD YOU RATE YOUR CURRENT COMPETITION INVOLVEMENT?

COMPETITION LEVEL	N
Non-competitive or little experience (recreational/informal)	109
Local	52
Regional	41
National	35
International	64

TRAINING ENGAGEMENT AND PROGRESSION FACTORS

› 10 HOW HARD DO YOU THINK IT IS TO LEARN BMX?

VERY EASY	EASY	NOR EASY NOR DIFFICULT	DIFFICULT	VERY DIFFICULT
4	27	90	122	58

› 11 HOW FREQUENTLY DO YOU CURRENTLY PRACTICE BMX FREESTYLE?

FREQUENCY	N
Not at all	51
1-2 times per week	140
3-4 times per week	79
5+ times per week	31

› 12 WHAT MENTAL OR MOTIVATIONAL CHALLENGES DO YOU FACE WHEN TRYING TO IMPROVE YOUR BMX SKILLS? (MULTIPLE CHOICE)

CHALLENGE	N	%
Do not enjoy it as much / It isn't fun anymore	29	9.6%

CHALLENGE	N	%
Lack in motivation and discipline	78	25.9%
Riding feels overwhelming / Focus is reduced	72	23.9%
Fear of injury	206	68.4%

› **13 DO YOU THINK BMX IS GOOD FOR MENTAL HEALTH? (OPTIONAL)**

RESPONSE	N
Yes	288
No	3
Don't know	10

› **14 DO YOU THINK BMX HELPS SOCIAL INCLUSION? (OPTIONAL)**

RESPONSE	N
Yes	258
No	2
Don't know	37

› **15 WHAT PHYSICAL & HEALTH CONDITIONS MOSTLY LIMIT YOUR PRACTICE TIME?**

CONDITION	N	%	BASE
Physical fatigue (short term, reversible) – 'I feel tired or sore, but I recover after rest.'	139	46.2%	301
Injury or injury recovery	118	39.2%	301
Physical overload (persisting imbalance, insufficient recovery, excessive fatigue and pain)	44	14.6%	301

› **16 DO YOU THINK BMX HAS IMPROVED YOUR PHYSICAL HEALTH? (OPTIONAL)**

RESPONSE	N
Yes	253
No	6

RESPONSE	N
Maybe	42

› **17 WHAT LIFE BALANCE OBSTACLES ARE MOST IMPACTING YOUR PRACTICE TIME? (MULTIPLE CHOICE)**

OBSTACLE	N
School and/or work obligations	220
Family responsibilities	68
Poor time management / Lack of planning	66
Financial constraints	82

› **18 DO YOU CONSIDER BMX FREESTYLE AN EASILY ACCESSIBLE SPORT? (MULTIPLE CHOICE)**

RESPONSE	N
Yes – equipment and facilities are generally affordable and available	79
Yes – I can easily access places to ride in my area	99
No – equipment and maintenance costs are a barrier	41
No – limited access to BMX parks or suitable spaces	92
No – lack of local coaching or community	42
It depends on location or personal circumstances	133

› **19 HOW MUCH MONEY DO YOU THINK YOU NEED TO START BMX?**

AMOUNT	N
Less than €500	148
€500 to €1,000	141
More than €1,000	12

› **20 WHICH EXTERNAL OR ENVIRONMENT-BASED LIMITATION IMPACTS YOUR PRACTICE THE MOST? (MULTIPLE CHOICE)**

LIMITATION	N
Access to infrastructure	60
Lack of facilities	115
Quality or availability of BMX parks	134
Seasonal availability (weather / no indoor park)	177
None	34

› **21 IS THERE ANYTHING ELSE THAT CURRENTLY LIMITS YOUR PROGRESSION OR PARTICIPATION IN BMX FREESTYLE? (OPTIONAL OPEN QUESTION)**

Responses are consolidated into seven distinct themes, ordered by frequency/prominence in the answers. Some responses touch more than one theme, but each is coded according to its primary stated limitation.

- Inadequate facilities and training infrastructure (14 mentions): lack of suitable parks, parks being too small or poorly designed, lack of indoor facilities, loss/demolition of skateparks, distance to suitable facilities, lack of lighting, and limited access to advanced training infrastructure such as foam pits and resi ramps.
- Financial limitations and lack of sponsorship (5 mentions): high costs of BMX equipment, inability to earn a living as a professional rider, limited sponsorship, expensive international travel and lack of federation/government travel support.
- Weak community, institutional support and rider base (5 mentions): lack of ambitious riders or established crews, declining local BMX scenes, insufficient support from sport associations or authorities, and lack of regular national-level activities and competitions.
- Injury, fear and risk of progression (3 mentions): injuries, previous crashes and fear of falling that discourage riders from attempting new or more difficult tricks.
- Lack of coaching and structured entry pathways (2 mentions): lack of formal coaches/instructors, particularly for children, which also reduces parents' perception of BMX as an organised sport that children can formally join.
- Limited visibility and promotion of BMX/action sports (2 mentions): insufficient marketing and public exposure of BMX and other action sports, resulting in lower awareness and potentially fewer newcomers.

COACHING AND PROGRESSION NEEDS

› 22 HAVE YOU EVER RECEIVED FORMAL COACHING IN BMX FREESTYLE AND DO YOU FEEL YOU NEED MORE?

RESPONSE	N
No formal coaching	179
Coaching received – sufficient	71
Coaching received – need more	51

› 23 DO YOU THINK MORE COACHING TIME WOULD IMPROVE YOUR BMX EXPERIENCE? (OPTIONAL)

RESPONSE	N
Yes	223
No	62

› 24 WHAT DO YOU CONSIDER THE BIGGEST LIMITATION AFFECTING BMX FREESTYLE TRAINING AND COACHING? (MULTIPLE CHOICE)

LIMITATION	N
Limited coaching knowledge, education, or support	84
Availability of qualified coaches / guidance and expertise level	109
Athlete availability or participation frequency	62
Feedback quality, motivation or discipline	66
Safety or injury management challenges	84
Limited access to facilities or infrastructure	135
Financial constraints (equipment, travel, funding)	117

› 25 HOW DO YOU PRIMARILY LEARN NEW TRICKS?

METHOD	%	N
Self-taught	46.2%	139
Friends / Peers	28.2%	85

METHOD	%	N
Online videos	9.3%	28
Coach / Club	16.3%	49

› **26 DO YOU THINK PERIODICALLY REVISITING THE BASIC TECHNICAL SKILLS OF YOUR BMX DISCIPLINE IS IMPORTANT FOR LONG-TERM PROGRESSION?**

RESPONSE	N
Yes	264
No	9
Not sure	28

› **27 AT WHICH STAGE DO YOU THINK REVISITING THE BASICS IS MOST IMPORTANT? (MULTIPLE CHOICE)**

STAGE	N
Beginner	113
Intermediate	82
Advanced	29
Elite	11
All stages	164

SAFETY PERCEPTION IN BMX FREESTYLE

› **28 HOW SAFE DO YOU GENERALLY FEEL WHEN PRACTICING BMX FREESTYLE?**

RESPONSE	N
Very unsafe	3
Unsafe	12
Neither safe nor unsafe	117
Safe	142
Very safe	27

› **29 HOW LIKELY DO YOU FEEL YOU ARE TO GET INJURED WHILE RIDING?**

RESPONSE	N
Very unlikely	21
Unlikely	73
Neither likely nor unlikely	129
Likely	71
Very likely	7

› **30 HOW SAFE DO YOU FEEL IN THE FOLLOWING BMX ENVIRONMENTS? (OPTIONAL)**

ENVIRONMENT	UNSAFE	NEUTRAL	SAFE
Skatepark / Bowl	27	112	157
Street / Urban obstacles	61	131	102
Dirt / Jump lines	83	142	68
Indoor facility	15	102	177

› **31 IN YOUR OPINION, WHICH FACTORS MOST AFFECT ATHLETES' PERCEPTION OF SAFETY IN BMX FREESTYLE? (MULTIPLE CHOICE)**

FACTOR	N
Facility condition	142
Supervision / coaching quality	86
Trick difficulty / progression management	188
Protective equipment use and familiarity with bike performance	148
Athlete fitness / preparedness	161
Other	17

TRAINING SUPPORT NEEDS IN BMX FREESTYLE

› 32 TO WHAT EXTENT DO YOU FEEL BMX FREESTYLE IS SUPPORTED AS A SPORT IN YOUR COUNTRY?

RESPONSE	N
Not at all	61
Slightly	165
Moderately	58
Well supported	17

› 33 WOULD SUPPORT THROUGH ALTERNATIVE OR COMPLEMENTARY TRAINING METHODS (E.G., OFF-BIKE TRAINING, DIGITAL TOOLS, VR) HELP YOU ADDRESS CHALLENGES IN COACHING/TRAINING?

RESPONSE	N
Yes	151
No	32
Maybe	118

› 34 WHICH OF THE FOLLOWING FACTORS WOULD MOST HELP YOU IMPROVE YOUR BMX FREESTYLE TRAINING OR DEVELOPMENT? (SELECT ALL THAT APPLY)

FACTOR	N
Innovative aspects to training (e.g., new methods, VR, technology)	133
More educational online materials (tutorials, videos, guides)	87
Financial support (equipment, travel, coaching)	139
Access to different skate park setups or facility types	218
Community of riders (training partners, peer support)	179
Competences and quality of coaches	101
Interaction with professional riders	149
Other	17

› **35 WHICH OF THE FOLLOWING METHODS WOULD YOU PREFER TO HELP YOU TRAIN MORE EFFECTIVELY? (SELECT ALL THAT APPLY)**

METHOD	N
In-person coaching sessions	172
Online tutorials or educational content	72
VR or simulation-based training	95
Group sessions / peer training	185
Workshops with professional riders	161
Structured progression programs designed by coaches	119

› **36 WHICH TRICKS OR STUNTS DO YOU THINK COULD BE EFFECTIVELY PRACTICED USING VR OR DIGITAL TOOLS? (SELECT ALL THAT APPLY)**

TRICK / STUNT	N
Straight Air / Basic Air	113
Tabletop	83
X-Up / Barspin	123
Tailwhip / 360 Tailwhip	155
Flair / Vert tricks	155
Manuals / Wheelies	81
Grinds / Slides	79
Spins (180°, 360°, 540°, 720°)	171
Other	79

› **37 WHEN LEARNING A NEW TRICK, WHICH PHASE DO YOU FIND MOST CHALLENGING?**

PHASE	N
Take-off	57
Air control	116
Timing / coordination	177
Landing	112

PHASE	N
Linking into lines	69

› 38 ARE THERE ANY TRICKS OR STUNTS THAT YOU FIND PARTICULARLY DIFFICULT TO LEARN OR TEACH? (OPTIONAL)

Many respondents mentioned more than one trick or skill family. The largest category involved whip-type and bike-body separation skills, mentioned in 36 responses (36.7%). Responses included: tailwhips; 360 tailwhips; downwhips; opposite whips; barspins; double barspins; combinations involving these tricks; tricks in which the rider separates from the bicycle while airborne.

The second most common theme was rotational progression, appearing in 32 responses (32.7%). Respondents referred to: 180°; 360°; 540°; 720°; 1080°; full cabs; cork 720s; higher-degree spins; rotational combinations.

Flips, inversion and flair-type tricks appeared in 18.4% of responses. Specific examples included: flair; backflip; frontflip; flip tricks; flip/spin combinations. Several responses specifically referred to the fear or difficulty of going upside down.

Advanced combinations and high-risk progression were identified in 16.3% of responses and balance-related skills were mentioned in 11.2% of responses. Grinds and similar obstacle-based skills appeared in 10 responses. Air-position/style tricks appeared in 6 responses. Five substantive responses (5.1%) specifically referred to opposite or 'oppo' skills, including opposite whips.

› 39 WHICH TRICKS OR SKILLS WOULD YOU LIKE MORE STRUCTURED GUIDANCE OR TRAINING SUPPORT FOR? (SELECT ALL THAT APPLY)

LEVEL	N
Beginner tricks (e.g., Straight Air, Basic Air, Manuals)	118
Intermediate tricks (Tabletop, X-Up, Wheelies)	105
Advanced tricks (Tailwhip, 360 Tailwhip, Spins)	173
Expert / Competition-level tricks (Flair, Vert, Complex combos)	153

RIDERS-ONLY PROFILE: CROSS-TABULATED ANALYSIS

The following tables cross-tabulate the rider-only subset of respondents (n = 209) against age, riding level, competition category, training frequency, physical limitations and formal coaching received.

➤ AGE DISTRIBUTION (RIDERS ONLY)

AGE GROUP	N	%
Under 12	18	8.6
12–16	29	13.9
17–21	56	26.8
22–29	67	32.1
30+	39	18.7

➤ AGE × RIDING LEVEL

AGE GROUP	BEGINNER	NOVICE	INTERMEDIATE	ADVANCED	ELITE	NONE
Under 12	9	4	3	2	0	0
12–16	2	8	15	3	1	0
17–21	5	7	19	17	5	3
22–29	0	1	20	28	18	0
30+	1	4	15	10	8	1

➤ AGE × COMPETITION LEVEL

AGE GROUP	NON-COMPETITIVE	LOCAL	REGIONAL	NATIONAL	INTERNATIONAL
Under 12	14	3	1	0	0
12–16	4	9	7	5	4
17–21	8	19	11	10	8
22–29	14	12	9	7	25
30+	16	4	3	5	11

➤ AGE × RIDING EXPERIENCE

AGE GROUP	<1 YEAR	1–3 YEARS	3–6 YEARS	6+ YEARS	N/A
Under 12	7	9	2	0	0
12–16	5	10	12	2	0

AGE GROUP	<1 YEAR	1-3 YEARS	3-6 YEARS	6+ YEARS	N/A
17-21	2	9	23	22	0
22-29	0	3	6	58	0
30+	1	5	2	30	1

› AGE × TRAINING FREQUENCY

AGE GROUP	NOT AT ALL	1-2/WEEK	3-4/WEEK	5+/WEEK
Under 12	0	14	3	1
12-16	1	14	9	5
17-21	2	28	21	5
22-29	1	33	25	8
30+	4	17	14	4

› RIDER LEVEL × PHYSICAL LIMITATIONS

RIDER LEVEL	PHYSICAL FATIGUE	INJURY / RECOVERY	PHYSICAL OVERLOAD
Beginner	82.4%	17.6%	0.0%
Novice	54.2%	45.8%	0.0%
Intermediate	48.6%	26.4%	25.0%
Advanced	48.3%	38.3%	13.3%
Elite	56.2%	25.0%	18.8%

› RIDER LEVEL × FORMAL COACHING

RIDER LEVEL	NO FORMAL COACHING	RECEIVED – SUFFICIENT	RECEIVED – NEED MORE
Beginner	41.2%	23.5%	35.3%
Novice	54.2%	33.3%	12.5%
Intermediate	52.8%	26.4%	20.8%
Advanced	70.0%	18.3%	11.7%
Elite	62.5%	28.1%	9.4%

APPENDIX B – REFERENCES

Primary research sources for desk research are the VR Freestyle Best Practice Exchange templates completed by the project partners. These provide organisation-specific information, descriptions of activities, organisational staffing, training practices and partners' assessments of national conditions. Because the partner organisations occupy substantially different positions in their national BMX ecosystems, their responses are treated as primary stakeholder evidence rather than as directly comparable national statistical datasets.

Factual statements concerning federation structures, regulations, coaching qualifications, competitions, public infrastructure and institutional support were cross-checked against the following publicly available sources.

INTERNATIONAL / UCI

UCI – Cycling Regulations, including Part VI bis: BMX Freestyle

<https://www.uci.org/regulations/3MyLDDrwJCJJ0BGGOFzOat>

UCI – The Rapid Rise of BMX Freestyle Under the UCI

<https://www.uci.org/article/the-rapid-rise-of-bmx-freestyle-under-the-uci/BtkuyV40rtaV7gbN09VJi>

UCI – About BMX Freestyle

<https://www.uci.org/article/about-bmx-freestyle/5l4vyNgDJ0AP9Rf23lypTT>

UCI – What is BMX Freestyle Park?

<https://www.uci.org/article/what-is-bmx-freestyle-park/5gZ0XxZWJIskYYG5hNlyMy>

UCI – BMX Freestyle International Calendar Registration Procedure

<https://docs.uci.org/documents/calendar/ProcedureENG.pdf>

UCI – BMX Freestyle training for judges, athletes and coaches at the World Cycling Centre

<https://www.uci.org/article/bmx-freestyle-judges-athletes-and-coaches-join-training-camp-at-uci-world/396kB GCKvDnAZIRifNHJ19>

UCI – World Cycling Centre BMX Freestyle Park

<https://www.uci.org/article/uci-world-cycling-centre-inauguration-of-new-bmx-freestyle-park/5DMQdMx2S27ebkn rUsyCo8>

FRANCE

Fédération Française de Cyclisme – BMX Freestyle

<https://structures.ffc.fr/epreuves-ffc-disciplines/urban-cycling/bmx-freestyle/>

FFC – French BMX Freestyle Championships

<https://structures.ffc.fr/epreuves-ffc-disciplines/urban-cycling/championnats-france-bmx-freestyle/>

FFC – BMX Freestyle competition results

https://velo.ffc.fr/resultats-des-courses/?_discipline=freestyle

FFC – Federal resources

<https://ffc.fr/ressources/>

FFC Institut National de Formation – Éducateur fédéral

<https://inf.ffc.fr/choisir-sa-formation/diplomes-federaux/educateur-federal/>

FFC – Federal training resources

<https://inf.ffc.fr/ouvrages-dtn/>

FFC – Entraîneur de club

<https://structures.ffc.fr/outils-clubs-professionnalisation-structures/metiers-cyclisme/entraîneur-club/>

FFC – Projet de Performance Fédéral

<https://ffc.fr/ressources/projet-performance-federal-ffc/>

FFC – Pôle France Olympique BMX Freestyle Montpellier

https://ffc.fr/app/uploads/sites/2/2025/03/Livret-de-Fonctionnement_PFO-BMX-Freestyle_Saison-2025-2026-MAJ.pdf

FFC – BMX Freestyle presentation

<https://velo.ffc.fr/disciplines-cyclistes/urban-cycling/bmx-freestyle/presentation/>

CROATIA

Croatian Cycling Federation – HBS

<https://www.hbs.hr/>

HBS – Official documents

<https://www.hbs.hr/dokumenti/>

Pannonian Challenge

<https://pannonian.hr/>

Croatian Ministry of Tourism and Sport

<https://mint.gov.hr/>

SLOVENIA

Slovenian Cycling Federation – Kolesarska zveza Slovenije

<https://kolesarska-zveza.si/>

City of Ljubljana – Center urbanih športov Stožice

<https://www.ljubljana.si/sl/vizija-ljubljane/projekti-mol/vsi-projekti/center-urbanih-sportov-stozice>

City of Ljubljana – Sport

<https://www.ljubljana.si/sl/ljubljana/sportna>

Municipality of Tržič – municipal publication containing BMX Park information

<https://www.trzic.si/doc/obcina-trzican/trzican-oktober-2022.pdf>

MTB.si – BMX Park Tržič / Sandi Remec

<https://www.mtb.si/intervjuji/sandi-remec-kmalu-bo-zrasel-nov-pokrit-bmx-park-2/>

MTB.si – BMX Park Tržič

<https://www.mtb.si/novice/zadnji-sesh-v-bmx-parku-trzic/>

Siol – Jaka Remec interview

<https://siol.net/sportal/kolesarstvo/jaka-remec-sobotni-intervju-566887>

MTB.si – Jaka Remec development

<https://www.mtb.si/intervjuji/vrecek-udari-iz-zakulisja-jaka-remec-je-dobil-krila/>

MALTA

SportMalta

<https://sportmalta.mt/>

ESTONIA

Estonian Cycling Federation – Eesti Jalgratturite Liit

<https://ejl.ee/>

Estonian Sports Register – Eesti Jalgratturite Liit

https://www.spordiregister.ee/en/organisatsioon/4021/eesti_jalgratturite_liit/detail

Estonian Sports Register – EIJL organisation/coaching information

https://www.spordiregister.ee/et/organisatsioon/4021/eesti_jalgratturite_liit

Estonian Olympic Committee – Coach Qualifications

<https://www.eok.ee/treenerid/treenerikutsed>

City of Tartu – Tartu Bike Park

<https://tartu.ee/et/uudised/tartus-avatakse-sel-neljapaeval-eesti-unikaalseim-rattapark>

City of Tartu – Concrete Skatepark

<https://www.tartu.ee/en/news/largest-concrete-skatepark-baltics-opening-tartu-estonia>

Simple Session

<https://simple.session.ee/>

GREAT BRITAIN – BRITISH CYCLING MODEL

British Cycling – BMX Freestyle

<https://www.britishcycling.org.uk/bmx>

NETHERLANDS – AREA51

Area51 Eindhoven

<https://www.area51eindhoven.nl/>

CHINA – CENTRALIZED / HIGH-PERFORMANCE MODEL

General Administration of Sport of China – 2018 National BMX Freestyle Selection

<https://www.sport.gov.cn/n20001280/n20067662/n20067613/c22789147/content.html>

Xinhua – Chinese BMX Team Development Model / Interview following Paris 2024

<https://english.news.cn/20240804/03d7c570b2554d95be945e6205a5ba09/c.html>

UCI – Deng Yawen wins Women’s BMX Freestyle Park at Paris 2024

<https://www.uci.org/article/olympic-games-paris-2024-chinas-yawen-deng-wins-womens-bmx-freestyle/9HUSX10w0bK48tBPesBA>

AUSTRALIA – AUSCYCLING

AusCycling

<https://auscycling.org.au/>

USA

Woodward Pennsylvania – BMX Camp

<https://www.woodwardpa.com/summer-camps/bmx/>

Daniel Dhers Action Sports Complex

<https://www.ddasc.com/>

USA Cycling – BMX Freestyle

<https://usacycling.org/team-usa/bmx-freestyle>

ITALY – H-FARM

H-FARM

<https://www.h-farm.com/>