

Factors Influencing Trainees' Perceptions of the Project Saksham Training Programme in a Public Sector Railway Organisation in India

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Abstract:

Purpose – Project Saksham is a workforce training initiative introduced by Indian Railways to upgrade employees' skills and domain knowledge. This study examines whether five training-related factors—training content, training resources, training schedule, training environment and training facilitators—significantly predict trainees' perceptions of the programme in a public-sector railway organisation in India.

Methodology – A quantitative research design was adopted. Data were collected from 294 employees (209 males and 85 females) using an online questionnaire comprising 25 items. Principal component analysis was used to examine the underlying structure of the measures, followed by multiple regression analysis using SPSS 23.

Findings – The regression model was statistically significant and explained 60.2 per cent of the variance in trainees' perceptions ($R^2 = 0.602$; adjusted $R^2 = 0.595$). All five training-related factors were significant positive predictors. Training Facilitators had the largest standardised coefficient ($\beta = 0.320$), followed by Training Environment ($\beta = 0.183$), Training Schedule ($\beta = 0.173$), Training Resources ($\beta = 0.138$) and Training Content ($\beta = 0.103$).

Practical implications – The findings highlight the relevance of content, resources, scheduling, learning environment and facilitator effectiveness in training delivery.

Originality/value – The study provides empirical evidence on training-related factors associated with trainee perceptions in a large public-sector railway context.

Keywords: Project Saksham; Training Effectiveness; Trainees' Perceptions; Training Content; Training Facilitators; Indian Railways.

1. Introduction

Project Saksham is a comprehensive workforce training initiative introduced by Indian Railways to upgrade employees' skills and domain knowledge and improve job performance, productivity and efficiency (Ministry of Railways, 2017). The programme was conceived as a structured training initiative for employees across Indian Railways, with training delivered through on-the-job or classroom-based approaches depending on the nature of the training. The emphasis on work-related skills and knowledge reflects the broader importance of systematic employee development in organisations where effective performance depends on the continuous acquisition and application of relevant competencies.

Workplace training plays an important role in developing employee knowledge, skills and capabilities and in aligning individual competencies with organisational requirements. Training is not limited to the transfer of information; it also involves the design of learning experiences that enable employees to acquire knowledge, practise skills and connect learning with their work responsibilities. Kraiger and Ford (2021) emphasise the importance of workplace instruction that is appropriately designed around learning principles, instructional methods and the requirements of the work context. Similarly, Salas et al. (2012) highlight the importance of systematic training design, delivery and evaluation in supporting learning and performance in organisations. Thus,

the effectiveness of a workforce training programme depends not only on whether training is provided but also on how the programme is designed, delivered and experienced by participants.

The relevance of training becomes particularly important in large and complex organisations such as Indian Railways, where employees perform diverse operational, technical, commercial, administrative and managerial functions. Differences in job responsibilities require training programmes to address varied learning requirements and workplace contexts. Consequently, the quality of training content, availability of learning resources, scheduling of training activities, learning environment and effectiveness of facilitators may shape how employees experience and evaluate a training programme. These elements form important dimensions of the training process because they influence the extent to which employees can engage with learning activities and perceive them as relevant to their work.

Training evaluation provides a systematic means of examining whether training programmes are achieving their intended learning and performance-related objectives. Kirkpatrick and Kirkpatrick (2016) propose a four-level approach to training evaluation encompassing participants' reactions, learning, behaviour and results. The reaction level is particularly relevant to the present study because trainees' perceptions provide an immediate indication of how participants evaluate the training experience, including its relevance, delivery and learning conditions. Although positive trainee perceptions alone cannot establish whether training has produced subsequent behavioural or organisational outcomes, they provide an important dimension of training evaluation and can identify areas of the training experience that may require improvement.

Previous research has emphasised that training effectiveness is influenced by multiple factors rather than by training content alone. The design and delivery of training, the characteristics of trainers, the learning environment and opportunities for application can all affect the learning experience and subsequent transfer of knowledge and skills (Salas et al., 2012; Kraiger and Ford, 2021). Research on training transfer has likewise highlighted the importance of the conditions surrounding learning and the extent to which employees can apply what they have learned in their work settings (Saks and Burke-Smalley, 2014; Arabi and Garza, 2023). More recent research has also examined training evaluation and transfer from broader perspectives, reinforcing the need to consider multiple dimensions of the training experience rather than relying on a single measure of training effectiveness (Ardoni et al., 2026).

Within this context, examining trainees' perceptions of Project Saksham is relevant because employee responses to the training experience can provide useful information about the perceived quality and suitability of different training-related factors. Understanding whether aspects such as training content, training resources, training schedule, training environment and training facilitators are associated with trainees' perceptions can help identify the dimensions of the training experience that warrant attention. Such evidence can be particularly useful in large public-sector organisations where training programmes involve employees with diverse roles and where standardised training initiatives must operate across different work contexts.

Despite the scale and organisational importance of workforce training, limited empirical research has examined how specific training-related factors predict trainees' perceptions of Project Saksham within the Indian public-sector railway context. The present study therefore examines the relationship between five training-related factors—training content, training resources, training schedule, training environment and training facilitators—and trainees' perceptions of the Project Saksham training programme. The study seeks to identify which of these factors significantly predict trainees' perceptions and thereby contribute empirical evidence to the literature on training evaluation and workplace learning in a large public-sector organisation.

Accordingly, the objectives of the study are to examine trainees' perceptions of the Project Saksham training programme and to analyse the training-related variables that significantly predict those perceptions. The study also contributes to understanding how different elements of training design and delivery may be associated with participants' evaluations of a large-scale workforce training initiative.

2. Literature Review

3.1 Training Evaluation

Training evaluation involves the systematic collection and examination of evidence to determine whether a training programme has achieved its intended learning and performance-related objectives. Evaluation can consider participants' responses, learning, behavioural application and broader organisational outcomes, thereby providing information about different aspects of training effectiveness (Kirkpatrick and Kirkpatrick, 2016). In workplace settings, evaluation is also connected with the design of learning experiences and the conditions under which employees can apply acquired knowledge and skills (Kraiger and Ford, 2021).

Training can contribute to changes in employee behaviour within an organisation by supporting information retention, skill acquisition and the development of situational awareness. Mohamed and Alias (2012) applied the Kirkpatrick model to evaluate training in the Malaysian banking sector, including trainee reactions, learning and transfer.

Kirkpatrick's four-level model has been widely used in training evaluation for several decades (Saxena, 2020). Training assessment is an essential element of every training programme, since it enables organisations to assess the efficacy and worth of their training activities. By evaluating the results of training programmes, organisations may ascertain that the objectives of learning are achieved and that the programme enhances workers' skill development and aligns with organisational goals. Kirkpatrick and Kirkpatrick (2016) assert that successful training assessment necessitates the analysis of several levels, encompassing participants' responses, knowledge acquisition, behavioural modifications, and outcomes, to achieve a comprehensive picture of the programme's influence. In addition to verifying the training investment, this method pinpoints areas that need improvement to improve subsequent training initiatives. An important purpose of training evaluation is to assess the value and outcomes associated with training investments. Phillips and Phillips (2016) assert that organisations must measure the monetary and non-monetary benefits gained from training programmes to validate the costs incurred. Evaluation enables organisations to discern cost-efficient strategies, integrate training initiatives with organisational goals, and eradicate redundant or ineffective activities. Saks and Burke-Smalley (2014) contend that assessment offers insights on the transfer of training, namely whether employees use their learning in the workplace, which is essential for enhancing job performance and attaining organisational objectives. Training evaluation promotes ongoing enhancement and responsibility. Organisations may improve the quality of training programmes over time by gathering participant feedback and evaluating the efficiency of content, delivery techniques, and facilitators. Recent research emphasises the value of using evaluation evidence to improve training design and learning processes, while systematic reviews also highlight the importance of appropriate tools for assessing training transfer (Arabi and Garza, 2023; Ardoni et al., 2026).

3.2 Factors influencing trainees' perceptions of Project Saksham

Training Content (TC) is crucial in shaping learners' evaluations of a training programme. Thorough, relevant and well-organised training content can support engagement, knowledge retention and the subsequent application of acquired knowledge and skills. When training content is aligned with learners' needs and work requirements, it can help trainees establish meaningful connections between the learning experience and their workplace responsibilities. Workplace instruction research emphasises the importance of aligning instructional design, learning principles and training delivery with learners and work requirements (Kraiger and Ford, 2021). Thus, the relevance and organisation of training content are important considerations in determining how trainees perceive the usefulness and applicability of a training programme.

The practical relevance of training content is particularly important in workplace learning because employees participate in training with the expectation that the knowledge and skills acquired can contribute to their work responsibilities. Content that reflects actual workplace requirements can help trainees understand the relationship between training and job performance. Salas et al. (2012) emphasise the importance of systematic training design and delivery in supporting learning and performance, suggesting that training content should be appropriately connected with the intended learning outcomes. Consequently, training programmes that provide relevant

knowledge, skills and work-related examples may create greater opportunities for trainees to understand and apply what they have learned.

Training content is also closely related to the transfer of learning from the training environment to the workplace. Training that connects learning activities with practical work requirements may strengthen the perceived usefulness of the programme and provide trainees with a clearer understanding of how acquired knowledge and skills can be applied. Saks and Burke-Smalley (2014) highlight the importance of training transfer in determining whether employees use what they have learned in the workplace, while Arabi and Garza (2023) emphasise the relationship between training design, evaluation and transfer. Therefore, the design and relevance of training content may have implications not only for the immediate learning experience but also for the potential application of learning after training.

The currency and appropriateness of training content are also important considerations in contemporary workplace learning. Employees operate in work environments where procedures, technologies, responsibilities and organisational requirements may change over time. Training content that reflects current work requirements can help maintain the relevance of learning and provide employees with knowledge and skills appropriate to their roles. For a large and complex public-sector organisation such as Indian Railways, where employees perform diverse operational, technical, commercial and administrative functions, training content needs to be sufficiently relevant to different work contexts. The alignment of training content with organisational objectives and job requirements can therefore contribute to trainees' perceptions of the usefulness and relevance of the training programme.

The way training content is organised and delivered is also relevant to trainees' learning experience. Appropriate instructional methods, learning activities and supporting materials can facilitate understanding and provide opportunities for trainees to engage with the subject matter. Kraiger and Ford (2021) emphasise the importance of workplace instruction that integrates learning principles, instructional approaches and work requirements. Similarly, systematic reviews of workplace training highlight the importance of appropriate training design and evaluation in understanding learning and transfer (Ardondi et al., 2026). Thus, relevant content supported by appropriate instructional approaches may strengthen engagement with the training process and facilitate the potential application of acquired knowledge and skills.

Overall, Training Content represents an important dimension of the training experience because it determines the relevance, organisation and practical applicability of what trainees are expected to learn. In the context of Project Saksham, content that is relevant to employees' work requirements, appropriately organised and connected with practical application may contribute to more favourable perceptions of the training programme. Based on this reasoning, the following hypothesis is proposed:

H1: Training Content (TC) significantly predicts trainees' perceptions of the Project Saksham Training Programme

Training Environment (TE) is an important component of the training experience because the conditions in which learning takes place can influence trainees' involvement, satisfaction and perceptions of the programme. A supportive training environment can provide conditions that encourage participation, interaction and engagement with learning activities. The training environment may include physical and instructional conditions, accessibility of learning resources, opportunities for interaction and the broader organisational conditions surrounding the training programme. Appropriate physical and instructional conditions can support learners' engagement and contribute to effective workplace instruction (Kraiger and Ford, 2021).

The psychological dimension of the training environment is also important. A psychologically secure environment can encourage trainees to ask questions, express viewpoints, participate in discussions and engage in learning activities without excessive concern about criticism or negative interpersonal consequences. Edmondson (2019) describes psychological safety as an important condition for learning and interpersonal engagement in organisations. In a training context, an environment in which participants feel comfortable contributing and

seeking clarification may facilitate active participation and encourage more positive evaluations of the learning experience.

The physical and instructional characteristics of the training environment can similarly influence the quality of trainees' learning experiences. Factors such as the suitability of the training venue, availability of appropriate facilities, accessibility of learning materials and the organisation of learning activities can affect how easily trainees participate in the programme. When these conditions are appropriately managed, trainees may be better able to concentrate on the learning activities and engage with the content being delivered. Thus, the training environment should be considered not merely as the physical location in which training occurs but as a combination of physical, instructional and interpersonal conditions that support the learning process.

The broader organisational environment surrounding training is also relevant to the application of learning. Training does not occur independently of the workplace, and employees may require organisational support and suitable working conditions to apply newly acquired knowledge and skills. Shukla et al. (2024) identify organisational and contextual factors as relevant to the transfer of online training, highlighting the importance of conditions that facilitate the application of learning beyond the immediate training setting. A supportive environment may therefore strengthen the perceived relevance of training and create more favourable conditions for subsequent application.

The nature of learning activities within the training environment may further influence trainees' perceptions. Interactive exercises, opportunities for discussion, realistic work-related situations and practical activities can provide participants with opportunities to engage actively with the learning process. Such approaches may be particularly relevant in workplace training because employees can relate learning activities to their existing experience and job responsibilities. When the environment provides opportunities for interaction and practical engagement, trainees may perceive the programme as more relevant and useful to their work.

For a large public-sector organisation such as Indian Railways, maintaining an appropriate training environment can be particularly important because employees participate in training across different work roles and operational contexts. Differences in job responsibilities may create varied learning requirements, making the provision of suitable physical, instructional and organisational conditions important for supporting participation. A training environment that is supportive, accessible and conducive to interaction may therefore contribute to more favourable trainee perceptions of the Project Saksham Training Programme. Based on this reasoning, the following hypothesis is proposed:

H2: Training Environment (TE) significantly predicts trainees' perceptions of the Project Saksham Training Programme.

Training Resources (TR) represent an important component of the training experience because the availability, accessibility and suitability of learning materials and instructional support can influence trainees' ability to engage with training activities. Training resources may include instruction manuals, learning materials, electronic resources, technological tools, equipment and other forms of instructional support required for understanding and applying the content of a training programme. Adequate resources can help trainees access information, participate in learning activities and connect the knowledge presented during training with practical work requirements. Kraiger and Ford (2021) emphasise the importance of appropriate instructional approaches and learning conditions in supporting effective workplace instruction.

The quality and relevance of training resources are also important considerations. Resources that are current, accurate and closely related to employees' work requirements can help trainees understand the practical relevance of the training programme. When learning materials are consistent with the content being delivered and provide sufficient information for trainees to review and practise what they have learned, they may support knowledge retention and continued engagement with the learning process. Conversely, inadequate, outdated or difficult-to-access resources may limit trainees' ability to engage fully with learning activities and may reduce the perceived usefulness of the programme.

Accessibility is another important dimension of training resources. Trainees may require access to learning materials during formal training sessions as well as opportunities to review or refer to those materials afterwards. The availability of appropriate learning support can therefore contribute to continuity between the formal training experience and subsequent workplace application. Shukla et al. (2024) highlight the relevance of organisational and contextual conditions to the transfer of training, suggesting that appropriate support and workplace conditions can facilitate the application of acquired learning. Thus, resources should be considered not only in terms of their presence during training but also in terms of their accessibility and usefulness for continued learning and application.

The increasing use of digital technologies in workplace learning has further expanded the range of resources available to trainees. Electronic learning materials, digital platforms and technology-supported instructional resources can provide additional opportunities for accessing information and reinforcing learning. However, the availability of technology alone does not necessarily ensure an effective learning experience. Resources need to be appropriate to the training objectives, accessible to trainees and integrated with the instructional approach used during the programme. The usefulness of training resources therefore depends on the extent to which they support the intended learning activities and help trainees understand and apply the content of the programme.

Training resources may also contribute to the inclusiveness and accessibility of learning by providing different forms of instructional material. Written materials, visual resources, demonstrations, digital content and practical tools may support different learning activities and allow trainees to engage with information in ways appropriate to the nature of the training. For a large and diverse organisation such as Indian Railways, the availability of suitable resources may be particularly relevant because employees participate in training across different occupational and operational contexts. Resources that are appropriate to the subject matter and employees' work requirements can therefore support a more consistent training experience.

From a training-evaluation perspective, trainees' perceptions of resource adequacy can provide useful information about the quality of the learning experience. While the present study does not directly measure the effect of resources on learning outcomes or organisational performance, perceptions regarding the availability and suitability of resources may indicate whether trainees consider the conditions supporting the training programme to be adequate. Accordingly, Training Resources are examined in the present study as a factor that may predict trainees' perceptions of the Project Saksham Training Programme. Based on this reasoning, the following hypothesis is proposed:

H3: Training Resources (TR) significantly predicts trainees' perceptions of the Project Saksham Training Programme.

Training Schedule (TS) is an important component of training design because the timing, duration and organisation of learning activities can influence trainees' ability to participate effectively in a training programme. A well-organised schedule can provide trainees with sufficient time to engage with learning activities while taking account of their existing work responsibilities and operational requirements. The scheduling of training is therefore relevant not only to attendance but also to trainees' perceptions of the overall organisation and suitability of the programme.

The relationship between training schedules and workplace learning is particularly important in organisations where employees have different work responsibilities and operational commitments. Employees may need to balance participation in training with routine duties, shift arrangements and other workplace requirements. A training schedule that is appropriately planned and communicated can help reduce potential conflicts between training and work responsibilities. Conversely, scheduling training without adequate consideration of employees' work demands may create practical difficulties that affect their ability to participate fully in learning activities.

Training design and planning are also relevant to the transfer of learning. Shukla et al. (2024) identify training design, planning and contextual conditions as factors relevant to the transfer of learning to the workplace. The organisation of learning activities and the conditions under which training is undertaken can therefore influence the opportunities available for employees to engage with and subsequently apply what they have learned. A

schedule that provides appropriate time for learning activities, discussion and practical application may support a more effective training experience.

The duration and sequencing of training activities are further considerations in training design. Training that is too compressed may provide limited opportunities for participants to process and practise new information, whereas excessively prolonged sessions may create difficulties in maintaining attention and managing workplace responsibilities. Appropriate sequencing can allow learning activities to progress in a structured manner and provide opportunities for participants to understand, practise and reinforce the knowledge and skills addressed during training. Kraiger and Ford (2021) emphasise the importance of appropriately structuring workplace instruction and aligning learning activities with the requirements of the work context.

Flexibility in scheduling may also be relevant where employees have varied work patterns or responsibilities. Providing training at suitable times and organising sessions in a manner that accommodates operational requirements may facilitate participation and reduce avoidable barriers to engagement. In a large organisation such as Indian Railways, where employees perform diverse operational, technical, commercial and administrative roles, scheduling requirements may vary across work contexts. Consequently, the perceived suitability of the training schedule may form an important part of employees' overall evaluation of the programme.

From the perspective of training evaluation, trainees' perceptions of scheduling can provide useful information about whether the programme was organised in a manner that enabled effective participation. Although the present study does not directly measure the effect of training duration or timing on learning outcomes, employees' perceptions of the schedule provide an indication of how they experienced the organisation and accessibility of the training programme. Therefore, Training Schedule is examined as a potential predictor of trainees' perceptions of the Project Saksham Training Programme. Based on this reasoning, the following hypothesis is proposed:

H4: Training Schedule (TS) significantly predicts trainees' perceptions of the Project Saksham Training Programme.

Training Facilitators (TF) play an important role in shaping trainees' experiences of a training programme because facilitators are responsible for communicating content, guiding learning activities and supporting interaction during training. Effective facilitators do not simply transmit information; they can create an interactive learning environment in which trainees are encouraged to participate, ask questions and relate the subject matter to their work responsibilities. The quality of instructional methods and delivery processes is an important consideration in workplace learning, with trainers playing a significant role in facilitating learning (Kraiger and Ford, 2021).

The ability of facilitators to connect training content with practical workplace applications is particularly relevant to trainees' perceptions of training. When facilitators use appropriate examples, explanations and activities, trainees may find it easier to understand how the knowledge and skills presented during training relate to their actual responsibilities. Lacerenza et al. (2017), in their meta-analysis of leadership training design, delivery and implementation, highlight the importance of training delivery and implementation characteristics in shaping training outcomes. Although the present study focuses on trainees' perceptions rather than objective learning or performance outcomes, effective facilitation may contribute to a more engaging and relevant training experience.

Facilitator interaction and accessibility can also influence the learning experience. Trainees may require clarification, feedback and guidance when encountering unfamiliar concepts or practical problems during training. Facilitators who respond appropriately to questions and provide constructive feedback can support interaction and help participants engage more actively with the learning process. Trainer characteristics and interaction have been identified as relevant considerations in training effectiveness and participants' experiences (Aziz et al., 2022). Thus, facilitator effectiveness encompasses not only subject knowledge but also the ability to communicate clearly, respond to learners and create opportunities for participation.

The interpersonal environment created by facilitators is another relevant consideration. Facilitators who encourage respectful discussion and allow participants to express questions and viewpoints may contribute to a learning environment in which trainees feel more comfortable participating. This aspect is consistent with the importance of psychological safety discussed in relation to the training environment. Effective facilitation can therefore

complement the physical, instructional and organisational conditions of training by supporting interaction between the trainer and participants.

Facilitator effectiveness may also depend on the alignment between the facilitator's approach and the objectives of the training programme. Different forms of workplace training may require different instructional approaches, ranging from explanation and demonstration to discussion, problem-solving and practical activities. Appropriate selection and use of instructional approaches can help facilitators address the learning requirements of participants and maintain the relevance of training activities to workplace needs. Kraiger and Ford (2021) emphasise the importance of aligning workplace instruction with learning principles and work requirements, reinforcing the role of effective instructional delivery in workplace learning.

For a large public-sector organisation such as Indian Railways, facilitators may also need to address the diverse experience levels, occupational backgrounds and job responsibilities of trainees. The ability to explain concepts clearly, respond to different learning needs and connect training material with practical work situations may therefore be particularly relevant to participants' evaluations of the programme. Trainees' perceptions of facilitator competence, communication and accessibility can provide useful information about the quality of the delivery component of a training programme.

From a training-evaluation perspective, the facilitator represents an important element of the immediate training experience. While the present study does not directly assess facilitators' objective teaching competence or subsequent employee performance, trainees' evaluations provide an indication of how participants perceive the delivery of the programme. Accordingly, Training Facilitators are examined as a potential predictor of trainees' perceptions of the Project Saksham Training Programme. Based on this reasoning, the following hypothesis is proposed:

H5: Training Facilitators (TF) significantly predict trainees' perceptions of the Project Saksham Training Programme.

Research Objectives and Framework

A conceptual framework was developed based on the literature reviewed above to clarify the independent and dependent variables and their proposed relationships. In the proposed framework, trainees' perceptions of the Project Saksham Training Programme are treated as the dependent variable, while training content, training environment, training resources, training schedule and training facilitators are considered independent variables. The framework proposes that these five training-related factors may significantly predict trainees' perceptions of the Project Saksham Training Programme.

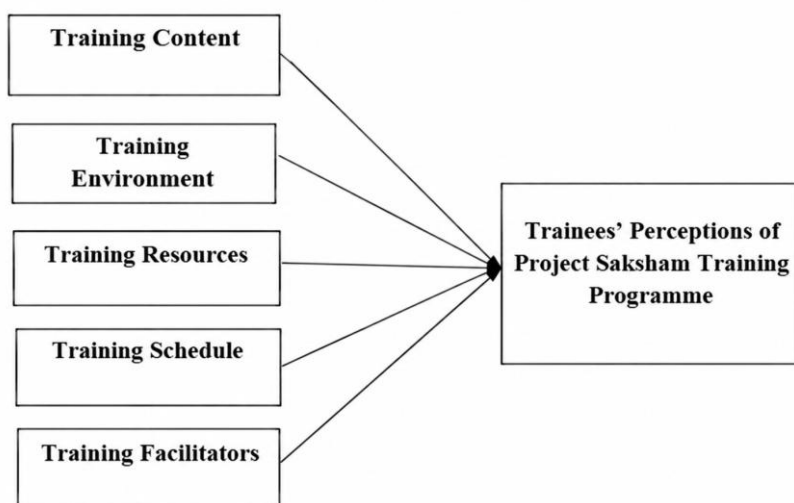


Figure 1: Framework for the study

The study's main goals are to:

1. Assess trainees' perceptions of the Project Saksham Training Programme.
2. Analyse the training-related variables that significantly predict trainees' perceptions of the Project Saksham Training Programme.
3. Examine the demographic characteristics of participants.

3. Research Methodology

A structured online questionnaire was used to collect primary data. The present research used convenience sampling to collect responses from employees working across Southern Railway. The online survey was disseminated to employees across different locations and work settings within Southern Railway. A total of 294 usable responses were received and included in the final analysis.

4. Ethical considerations

Prior permission to conduct the study was obtained from the participating organisation. Participation in the survey was completely voluntary, and respondents provided informed consent before taking part. Respondents were assured that their responses would remain confidential and would be reported only in aggregated and anonymised form. The data were used solely for academic research, with the organisation's approval to report anonymised findings in scholarly publications.

5. Measures

A five-point Likert scale was used to measure respondents' perceptions of the Project Saksham training programme. Demographic characteristics, including age, gender, and qualification were examined separately. The study operationalised five independent variables—training content, training resources, training schedule, training environment, and training facilitators—using 18 statements, while seven statements measured trainees' overall perceptions of the training programme as the dependent variable. Thus, the measurement instrument comprised a total of 25 statements. The measurement items were developed with reference to the Kirkpatrick Four-Level Evaluation Model and informed by previous studies, including Huang et al. (2010) and Mehta et al. (2019). The items were adapted to suit the organisational context of Project Saksham. The response categories ranged from Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), to Strongly Disagree (1), with higher scores indicating more favourable perceptions of the training programme. The suitability of the data for factor analysis was assessed using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's test of sphericity. The KMO value was 0.937, while Bartlett's test of sphericity was statistically significant ($\chi^2 = 4011.237$, $df = 300$, $p < 0.001$), indicating that the correlation matrix was suitable for factor analysis. Reliability was assessed using Cronbach's alpha for each construct. The alpha coefficients were 0.675 for Training Content, 0.469 for Training Resources, 0.733 for Training Schedule, 0.756 for Training Environment, 0.835 for Training Facilitators and 0.911 for Trainees' Perceptions. The relatively low reliability of the two-item Training Resources construct warrants caution in interpreting the corresponding finding.

6. Analysis and Results

The data were analysed using SPSS 23. Frequencies and percentages were used to summarise the socio-demographic characteristics of the respondents. Multiple regression analysis was employed to examine whether the five training-related factors significantly predicted trainees' perceptions of Project Saksham.

The socio-demographic profile of the 294 respondents is presented in Table I. In terms of gender, 71.1% were male and 28.9% were female. Regarding age, 54.1% belonged to the 31–45 years' group, followed by 24.8% in the 46–55 years' group, 14.3% above 55 years, and 6.8% aged 30 years and below. With respect to educational qualification, 46.3% were undergraduates, 36.4% had qualifications up to XII, and 17.3% were postgraduates. In terms of experience, 51.0% had more than 15 years of experience, 23.8% had 6–10 years, 19.4% had 11–15 years, and 5.8% had less than 5 years of experience.

Table I: Respondents' Sociodemographic Characteristics (n = 294)

Variable	Category	Frequency	Percentage (%)
Gender	Male	209	71.1
	Female	85	28.9
Age	30 years and below	20	6.8
	31-45 years	159	54.1
	46-55 years	73	24.8
	Above 55 years	42	14.3
Qualification	Up to XII	107	36.4
	Undergraduate	136	46.3
	Postgraduate	51	17.3
Experience	Less than 5 years	17	5.8
	6-10 years	70	23.8
	11-15 years	57	19.4
	Above 15 years	150	51.0

Source: Primary data.

8.1. Principal Component Analysis

Principal component analysis (PCA) was conducted to examine the underlying structure of the 25 questionnaire items. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was 0.937, and Bartlett’s test of sphericity was statistically significant ($\chi^2 = 4011.237$, $df = 300$, $p < 0.001$), indicating that the correlation matrix was suitable for component analysis.

Table II: KMO and Bartlett's Test

Sampling Adequacy (KMO)		0.937
Bartlett Test	Chi-Square (Approx.)	4011.237
	df	300
	Sig.	P<0.001

Source: Primary data.

A five-component solution was examined in accordance with the study’s pre-specified five-domain framework. The five components accounted for 62.05% of the total variance. Table III presents the rotated component matrix obtained using Varimax rotation. Loadings below 0.40 are suppressed for clarity. The rotated solution shows a strong concentration of the seven trainee-perception items on the first component, while several training-related items exhibit loadings across more than one component. Therefore, the component structure provides exploratory evidence of shared variance among the measures but does not correspond perfectly to the five theoretically specified training domains.

Table III: Rotated Component Matrix

Item	F1	F2	F3	F4	F5
Training Content					
TC1	-	-	0.693	-	-
TC2	-	0.446	-	-	-
TC3	-	-	0.547	-	-
TC4	-	-	0.606	-	-
Training Environment					
TE1	-	-	-	0.761	-
TE2	-	-	-	0.437	-
TE3	-	0.514	-	0.492	-
TE4	-	-	-	-	0.428
Training Resources					
TR1	-	0.486	-	-	-
TR2	-	-	-	-	0.593
Training Schedule					
TS1	-	0.656	-	-	-
TS2	-	-	-	-	0.585
TS3	-	-	-	-	0.704
TS4	-	-	-	0.575	-
Training Facilitators					
TF1	-	0.660	-	-	-
TF2	-	0.613	-	-	-
TF3	0.425	0.652	-	-	-
TF4	-	0.678	-	-	-
Trainees' Perceptions					
DV1	0.629	-	-	-	-
DV2	0.659	-	-	-	-
DV3	0.760	-	-	-	-
DV4	0.666	-	-	-	-
DV5	0.737	-	-	-	-
DV6	0.774	-	-	-	-
DV7	0.766	-	-	-	-

Note: Loadings below 0.40 are suppressed. Extraction method: Principal Component Analysis; rotation method: Varimax with Kaiser normalization.

Source: Primary data.

8.2 Multiple Regression Analysis

Multiple regression analysis was employed to examine whether the five training-related factors—training content, training resources, training schedule, training environment, and training facilitators—significantly predicted trainees' perceptions of the Project Saksham Training Programme. The dependent variable was the mean score of the seven items measuring trainees' perceptions, while the five independent variables were represented by the corresponding mean scores for training content, training resources, training schedule, training environment and training facilitators.

Table IV: Summary of Regression Model

Model	R	R ²	Adjusted R ²	Std. error
1	0.776	0.602	0.595	0.324

Source: Primary data.

The regression model produced an R value of 0.776 and an R² value of 0.602, indicating that the five training-related factors collectively explained 60.2% of the variance in trainees' perceptions of the Project Saksham Training Programme. The adjusted R² was 0.595, indicating that the model retained substantial explanatory value after adjustment for the number of predictors.

Table V: ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	45.972	5	9.194	87.199	p < 0.001
Residual	30.367	288	0.105		
Total	76.339	293			

Source: Primary data.

The ANOVA results indicate that the overall regression model was statistically significant, $F(5, 288) = 87.199$, $p < 0.001$. This indicates that the set of five training-related predictors, considered collectively, significantly predicted trainees' perceptions of the Project Saksham Training Programme.

Table VI: Coefficient of Regression Model

Model 1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Variable	B	Std. error	Beta		
(constant)	0.312	0.195	-	1.605	0.110
Training Content	0.119	0.058	0.103	2.044	0.042
Training Resources	0.131	0.047	0.138	2.757	0.006
Training Schedule	0.186	0.064	0.173	2.899	0.004

Training Environment	0.191	0.063	0.183	3.053	0.002
Training Facilitators	0.313	0.056	0.320	5.581	< 0.001

Source: Primary data.

The regression coefficients indicate that all five training-related factors were significant positive predictors of trainees' perceptions of the Project Saksham Training Programme. Training Content had a positive and statistically significant relationship with trainees' perceptions ($B = 0.119$, $\beta = 0.103$, $t = 2.044$, $p = 0.042$). Training Resources also showed a significant positive relationship ($B = 0.131$, $\beta = 0.138$, $t = 2.757$, $p = 0.006$). Training Schedule was a significant positive predictor ($B = 0.186$, $\beta = 0.173$, $t = 2.899$, $p = 0.004$), while Training Environment was also positively and significantly associated with trainees' perceptions ($B = 0.191$, $\beta = 0.183$, $t = 3.053$, $p = 0.002$). Training Facilitators demonstrated the largest standardised regression coefficient among the five predictors ($B = 0.313$, $\beta = 0.320$, $t = 5.581$, $p < 0.001$), indicating the strongest statistical association with trainees' perceptions within the regression model. The positive coefficients indicate that higher scores on each training-related factor were associated with higher perception scores, while controlling for the other predictors in the model.

7. Testing of Hypotheses

The hypotheses were tested using the results of the multiple regression analysis. A hypothesis was considered supported when the corresponding regression coefficient was positive and statistically significant at the 5% significance level ($p < 0.05$). The results indicate that all five training-related factors were significant positive predictors of trainees' perceptions of the Project Saksham Training Programme.

H1: Training Content

H1 proposed that Training Content (TC) significantly predicts trainees' perceptions of the Project Saksham Training Programme. The regression results show that Training Content was a significant positive predictor ($B = 0.119$, $\beta = 0.103$, $t = 2.044$, $p = 0.042$). Since the p-value is below 0.05, H1 is supported. This indicates that, after controlling for the other training-related factors included in the model, higher Training Content scores were associated with higher trainee perception scores.

H2: Training Environment

H2 proposed that Training Environment (TE) significantly predicts trainees' perceptions of the Project Saksham Training Programme. Training Environment showed a positive and statistically significant coefficient ($B = 0.191$, $\beta = 0.183$, $t = 3.053$, $p = 0.002$). As the p-value is below 0.05, H2 is supported. The result indicates that Training Environment was positively associated with trainees' perceptions when the other predictors were statistically controlled.

H3: Training Resources

H3 proposed that Training Resources (TR) significantly predicts trainees' perceptions of the Project Saksham Training Programme. The results indicate a positive and statistically significant relationship ($B = 0.131$, $\beta = 0.138$, $t = 2.757$, $p = 0.006$). Since the p-value is below 0.05, H3 is supported. Thus, higher scores for Training Resources were associated with higher trainee perception scores, controlling for the other predictors in the regression model.

H4: Training Schedule

H4 proposed that Training Schedule (TS) significantly predicts trainees' perceptions of the Project Saksham Training Programme. Training Schedule was found to be a significant positive predictor ($B = 0.186$, $\beta = 0.173$, $t = 2.899$, $p = 0.004$). As the p-value is below 0.05, H4 is supported. The finding indicates that Training Schedule was positively associated with trainees' perceptions after controlling for the other training-related factors.

H5: Training Facilitators

H5 proposed that Training Facilitators (TF) significantly predict trainees' perceptions of the Project Saksham Training Programme. Training Facilitators demonstrated a positive and statistically significant coefficient ($B = 0.313$, $\beta = 0.320$, $t = 5.581$, $p < 0.001$). Therefore, H5 is supported. Among the five predictors, Training Facilitators had the largest standardised coefficient ($\beta = 0.320$), indicating the strongest statistical association with trainees' perceptions within the regression model.

Table VII: Summary of Hypothesis Testing

Hypothesis	Relationship	β	p-value	Decision
H1	Training Content $\rightarrow$ Trainees' Perceptions	0.103	0.042	Supported
H2	Training Environment $\rightarrow$ Trainees' Perceptions	0.183	0.002	Supported
H3	Training Resources $\rightarrow$ Trainees' Perceptions	0.138	0.006	Supported
H4	Training Schedule $\rightarrow$ Trainees' Perceptions	0.173	0.004	Supported
H5	Training Facilitators $\rightarrow$ Trainees' Perceptions	0.320	<0.001	Supported

Source: Primary data.

8. Discussion

This study examined whether five training-related factors—Training Content, Training Resources, Training Schedule, Training Environment and Training Facilitators—significantly predicted trainees' perceptions of the Project Saksham Training Programme. The multiple regression model was statistically significant and explained 60.2% of the variance in trainees' perceptions ($R^2 = 0.602$; adjusted $R^2 = 0.595$). All five predictors were statistically significant and positively associated with trainees' perceptions. The findings therefore indicate that trainees' evaluations of Project Saksham were associated with a combination of content-related, resource-related, scheduling, environmental and facilitator-related characteristics rather than with a single dimension of the training experience.

Training Content was a significant positive predictor of trainees' perceptions ($\beta = 0.103$, $p = 0.042$). Although its standardised coefficient was comparatively modest, the finding indicates that the relevance and organisation of training content were associated with how trainees evaluated the programme after controlling for the other predictors. This finding is consistent with the broader literature emphasising the importance of aligning workplace instruction with learning requirements and the work context. Kraiger and Ford (2021) emphasise the importance of integrating instructional principles, learners and work requirements in workplace instruction. Salas et al. (2012) similarly emphasise systematic approaches to training design and delivery. The present finding suggests that, within the Project Saksham context, trainees' perceptions were positively associated with the extent to which the content of the training experience was relevant and appropriate to their learning and work requirements.

The finding concerning Training Content can also be considered in relation to training transfer. Training content that is relevant to employees' work responsibilities may provide a clearer connection between the learning experience and potential workplace application. Saks and Burke-Smalley (2014) emphasise the importance of transfer of training in understanding the broader value of employee development, while Arabi and Garza (2023) highlight the relationship between training design, evaluation and training transfer. The present study does not measure actual transfer of learning; however, the significant relationship between Training Content and trainee perceptions indicates that content-related characteristics form an important part of participants' evaluation of the programme.

Training Facilitators demonstrated the largest standardised coefficient among the five predictors ($\beta = 0.320$, $p < 0.001$). This indicates that facilitator-related characteristics made the largest statistical contribution to explaining variation in trainees' perceptions within the present regression model. The finding is consistent with research

emphasising the importance of training delivery and instructional processes in workplace learning. Kraiger and Ford (2021) identify instructional approaches and delivery as important elements of workplace instruction, while Aziz et al. (2022) demonstrate the relevance of trainer characteristics and interaction to training effectiveness. Lacerenza et al. (2017) also emphasise the importance of training design, delivery and implementation characteristics. In the present context, the finding suggests that how training is delivered, communicated and facilitated may be particularly relevant to participants' evaluations of Project Saksham.

The relatively strong coefficient for Training Facilitators may also reflect the direct interaction between trainees and facilitators during the training experience. Facilitators can explain concepts, respond to questions, guide activities and connect training material with practical situations. These aspects can form an important part of participants' immediate evaluation of training. However, the present study measures trainees' perceptions rather than objective facilitator competence or subsequent learning outcomes. Therefore, the finding should be interpreted as evidence of a significant statistical association between facilitator-related perceptions and overall trainee perceptions rather than as evidence that facilitator characteristics causally produce training effectiveness.

Training Resources was also a significant positive predictor of trainees' perceptions ($\beta = 0.138$, $p = 0.006$). The finding indicates that the perceived availability and suitability of learning resources were associated with more favourable evaluations of the Project Saksham training programme. Appropriate learning materials and instructional resources can support engagement with training content and provide trainees with opportunities to review and reinforce information presented during training. Kraiger and Ford (2021) emphasise the importance of appropriate instructional approaches and learning conditions in workplace instruction. Shukla et al. (2024) similarly highlight the relevance of contextual conditions surrounding training and the application of learning.

At the same time, the Training Resources construct consisted of only two items and demonstrated relatively low internal consistency ($\alpha = 0.469$). This measurement characteristic warrants caution when interpreting the regression coefficient. The statistical significance of the predictor indicates an association within the present sample, but the relatively low reliability suggests that future studies should employ a larger and more comprehensive set of items to measure training resources. Additional items could capture different aspects of resource adequacy, accessibility, currency and suitability more comprehensively.

Training Schedule was a significant positive predictor of trainees' perceptions ($\beta = 0.173$, $p = 0.004$). This finding indicates that the timing and organisation of training were associated with how participants evaluated the programme. Training schedules are relevant in workplace settings because employees must participate in learning activities while also managing their existing work responsibilities. Appropriate organisation of training sessions may therefore form part of participants' overall assessment of the training experience.

The finding is also consistent with the broader emphasis on training design and contextual conditions in the literature. Shukla et al. (2024) identify training design and contextual factors as relevant to training transfer, while Kraiger and Ford (2021) emphasise the importance of structuring workplace instruction in accordance with learning principles and work requirements. Although the present study does not examine whether particular schedules improve learning outcomes or subsequent job performance, the significant coefficient indicates that trainees' perceptions of scheduling were associated with their overall perceptions of Project Saksham.

Training Environment was another significant positive predictor ($\beta = 0.183$, $p = 0.002$). The result suggests that the conditions in which training was experienced were associated with participants' evaluations of the programme. A training environment encompasses more than the physical training venue; it can include instructional conditions, opportunities for interaction and the interpersonal conditions surrounding participation. Edmondson (2019) highlights the importance of psychological safety for learning and interpersonal engagement, while Shukla et al. (2024) identify contextual and organisational conditions as relevant to the transfer of training.

The present finding therefore reinforces the importance of considering the broader conditions surrounding workplace learning. A training programme may contain relevant material and be delivered by capable facilitators, but trainees' perceptions can also depend on the conditions under which they participate. Nevertheless, the present study measures perceptions of the training environment rather than objective characteristics of training facilities

or learning outcomes. The result should consequently be interpreted as an association between perceived training environment and overall trainee perceptions.

Taken together, the findings provide support for an integrated understanding of the training experience. Training Content, Training Resources, Training Schedule, Training Environment and Training Facilitators were all significant positive predictors in the same regression model. The results therefore suggest that trainees' perceptions of Project Saksham are associated with multiple dimensions of training design and delivery. This finding is consistent with the broader training literature, which emphasises that training effectiveness involves interconnected elements of instructional design, delivery, learning conditions and opportunities for application rather than a single isolated feature of a programme (Salas et al., 2012; Kraiger and Ford, 2021).

The findings should nevertheless be interpreted within the scope of the dependent variable used in the study. The present research examines trainees' perceptions of the Project Saksham training programme and does not directly measure learning outcomes, behavioural transfer or organisational results. Consequently, the finding that the five predictors explain 60.2% of the variance in perceptions should not be interpreted as evidence that these factors explain 60.2% of training effectiveness in a broader organisational sense. Rather, the result indicates that the five training-related variables collectively explained a substantial proportion of variation in the perception measure used in this study.

Overall, the findings indicate that Project Saksham trainees' perceptions were significantly associated with the content, resources, scheduling, environment and facilitation of training. The results provide empirical support for examining training as a multidimensional experience and contribute evidence from a public-sector railway context. They also suggest that evaluation of large-scale workforce training programmes can benefit from examining several dimensions of the training experience simultaneously rather than relying on a single measure.

9. Implications for Practice

The findings have several implications for the practical design and delivery of Project Saksham and similar workplace training programmes. Since all five training-related factors were significant positive predictors of trainees' perceptions, training implementation should be approached as a multidimensional process rather than focusing on a single element of programme delivery.

First, training content should be designed to remain relevant, clearly structured and appropriately connected with employees' work requirements. Training planners may periodically review learning content to ensure that it reflects the knowledge and skills required for the relevant work context. Practical examples, work-related situations and appropriately structured learning activities may also help trainees relate the training material to their responsibilities.

Second, the finding relating to Training Facilitators is particularly relevant for practice because this variable had the largest standardised coefficient in the regression model ($\beta = 0.320$). Training administrators may therefore give attention to facilitator preparation, subject knowledge, communication skills, interaction with trainees and the ability to connect training material with practical workplace situations. Facilitator development and appropriate allocation of facilitators to training programmes may help strengthen the delivery component of the training experience.

Third, adequate and accessible training resources should be considered when planning training programmes. Learning materials, instructional resources and other supporting materials should be appropriate to the content and available to trainees during the training process. At the same time, the relatively low internal consistency of the two-item Training Resources measure ($\alpha = 0.469$) indicates that this finding should be interpreted cautiously and that future programme evaluations should assess resource adequacy using more comprehensive measures.

Fourth, training schedules should be planned with consideration for employees' work responsibilities and the requirements of the training programme. Appropriate timing, duration and sequencing of training activities may facilitate participation and contribute to a more favourable training experience. This may be particularly relevant

in large organisations where employees have diverse operational, technical, commercial and administrative responsibilities.

Fifth, attention should be given to maintaining a supportive training environment. Suitable learning facilities, appropriate instructional conditions, opportunities for interaction and an environment that allows trainees to participate and seek clarification can contribute to a positive training experience. Training administrators may therefore consider both the physical and interpersonal dimensions of the learning environment when organising training programmes.

Finally, the findings suggest that training evaluation should incorporate feedback from trainees across multiple dimensions of the training experience. Rather than evaluating training only in terms of whether a programme was completed, organisations may examine trainees' perceptions of content, resources, scheduling, environment and facilitation to identify areas requiring attention. Such feedback can provide practical information for refining subsequent training programmes. However, because the present study examined trainees' perceptions rather than objective learning, behavioural transfer or organisational performance, these practical implications should be understood primarily in relation to improving the training experience and its perceived quality.

10. Implications for Policy

The findings have implications for the planning and administration of large-scale workforce training programmes in public-sector organisations. Since Training Content, Training Resources, Training Schedule, Training Environment and Training Facilitators were all significant positive predictors of trainees' perceptions, organisational training policies may benefit from addressing these dimensions in an integrated manner rather than treating training delivery as a single activity.

First, training policies may provide appropriate guidance for the periodic review and updating of training content so that programmes remain relevant to employees' work requirements. Clear mechanisms for identifying training needs, reviewing learning materials and aligning programme content with job-related requirements can support consistency in training provision across different units and work contexts.

Second, organisational policies may provide systematic provisions for the selection, preparation and development of training facilitators. The relatively larger standardised coefficient observed for Training Facilitators ($\beta = 0.320$) indicates that facilitator-related factors had the strongest statistical association with trainees' perceptions in the present model. Policies concerning facilitator preparation, subject expertise, communication and instructional capability may therefore be relevant to the delivery of large-scale workforce training programmes.

Third, policy frameworks may establish minimum requirements for training resources and learning facilities. Appropriate instructional materials and supporting resources can help create a consistent learning experience across training locations. However, such provisions should be periodically reviewed in relation to the specific requirements of different occupational groups rather than assuming that identical resources are equally appropriate for all employees.

Fourth, training policies may provide sufficient flexibility in scheduling to accommodate differences in work responsibilities and operational requirements. Clear guidelines concerning the planning, duration and sequencing of training activities may help training administrators organise programmes while taking account of employees' workplace responsibilities.

Fifth, organisational policies may recognise the importance of the training environment, including physical facilities, instructional conditions and opportunities for interaction. Establishing appropriate standards for training venues and learning conditions can help support consistency in the delivery of training programmes across different locations.

Finally, the findings support the continued use of systematic trainee feedback as one component of training evaluation. Feedback mechanisms can be used to identify areas requiring improvement in content, resources, scheduling, environment and facilitation. Such evaluation should, however, be complemented by measures of learning, behavioural application and organisational outcomes when organisations seek to assess the broader

effectiveness of training programmes. The present study provides evidence specifically concerning trainees' perceptions and should not be interpreted as direct evidence of effects on productivity, safety or other organisational performance outcomes.

11. Limitations and scope for Further Research

The findings of the present study should be interpreted in light of several limitations. First, the study adopted a cross-sectional research design and collected data at a single point in time. Consequently, the results identify statistical associations between the training-related factors and trainees' perceptions but do not establish causal relationships. Longitudinal studies could provide further insight into how perceptions of training change over time and whether these perceptions are associated with subsequent learning or workplace application.

Second, the study examined trainees' perceptions as the dependent variable. Although trainee perceptions represent an important dimension of training evaluation, they do not by themselves establish whether participants acquired new knowledge or skills, applied those learning outcomes in the workplace, or contributed to broader organisational outcomes. Future research could therefore extend the evaluation by incorporating measures corresponding to learning, behavioural transfer and organisational results, consistent with the broader training-evaluation perspective of Kirkpatrick and Kirkpatrick (2016).

Third, the study relied on self-reported questionnaire responses. Self-report measures may be affected by respondents' perceptions, response tendencies and the circumstances in which the questionnaire was completed. The use of multiple sources of evidence, such as assessment results, supervisor evaluations, behavioural indicators or other objective measures, could provide a more comprehensive evaluation of training outcomes in future studies.

Fourth, the study was conducted within the context of Project Saksham in a public-sector railway organisation. The organisational setting and characteristics of the training programme may differ from those of private-sector organisations or other public-sector institutions. Therefore, caution is required when extending the findings to other organisational contexts. Replication across different railway divisions, occupational groups and public-sector organisations could help examine the consistency and broader applicability of the relationships identified in the present study.

Fifth, the Training Resources construct consisted of only two measurement items and demonstrated relatively low internal consistency ($\alpha = 0.469$). This measurement limitation warrants caution in interpreting the corresponding regression result. Future research should develop and validate a more comprehensive set of items covering different dimensions of training-resource adequacy, accessibility, relevance and suitability before drawing stronger conclusions about this construct.

Sixth, the principal component analysis indicated that the seven trainee-perception items showed a strong concentration on one component, while several training-related items exhibited loadings across more than one component. The observed component structure therefore did not correspond perfectly to the five theoretically specified training domains. Future studies could employ confirmatory factor analysis with a larger sample to examine the measurement structure more rigorously and assess whether the proposed constructs demonstrate adequate discriminant validity.

Finally, the use of questionnaire-based data collected from the same respondents for both predictor and outcome measures creates the possibility of common-method bias. Although the statistical relationships provide useful evidence within the present sample, future research could reduce this concern through procedural remedies and the use of data from multiple sources or measurement occasions.

The regression analysis is based on the assumptions of multiple linear regression. Although the results provide evidence of significant associations between the training-related factors and trainees' perceptions, future studies may employ additional robustness procedures and alternative estimation approaches to further examine the stability of these relationships.

Future research could therefore extend the present study by employing longitudinal designs, larger and more diverse samples, validated multi-item measures and multiple sources of outcome data. Such studies could examine not only trainees' perceptions but also learning, behavioural transfer and relevant organisational outcomes, thereby providing a more comprehensive assessment of the effectiveness of large-scale workforce training programmes.

12. Conclusion

This study examined the factors that significantly predict trainees' perceptions of the Project Saksham Training Programme in a public-sector railway organisation in India. Drawing on the importance of systematic training evaluation and workplace learning, the study examined five training-related dimensions: Training Content, Training Resources, Training Schedule, Training Environment and Training Facilitators.

The empirical findings demonstrate that the overall regression model was statistically significant and explained 60.2% of the variance in trainees' perceptions of Project Saksham ($R^2 = 0.602$; adjusted $R^2 = 0.595$). All five training-related factors were significant positive predictors of trainees' perceptions. Training Content, Training Resources, Training Schedule, Training Environment and Training Facilitators therefore each made a statistically significant contribution to explaining variation in the perception measure when the other predictors were controlled.

Among the predictors, Training Facilitators had the largest standardised coefficient ($\beta = 0.320$), followed by Training Environment ($\beta = 0.183$), Training Schedule ($\beta = 0.173$), Training Resources ($\beta = 0.138$) and Training Content ($\beta = 0.103$). These results indicate that trainees' evaluations of the Project Saksham training experience were associated with multiple dimensions of training design and delivery rather than with a single characteristic of the programme.

The findings contribute empirical evidence from a large public-sector railway context and provide support for examining workforce training as a multidimensional experience. The study also demonstrates the usefulness of examining several training-related factors simultaneously when evaluating trainees' perceptions of a large-scale training initiative.

However, the findings should be interpreted within the scope of the study. The research examined trainees' perceptions and identified statistical associations; it did not directly measure learning outcomes, behavioural transfer or organisational performance. The results therefore provide evidence concerning the perceived training experience rather than a comprehensive assessment of Project Saksham's overall organisational effectiveness.

Overall, the study highlights the relevance of training content, resources, scheduling, environment and facilitation in understanding trainees' perceptions of Project Saksham. The findings can inform future evaluation and development of large-scale workforce training programmes, while further research using longitudinal designs, broader samples, stronger measurement instruments and multiple sources of outcome data can extend understanding of training effectiveness beyond trainee perceptions.

13. Conflict of Interest

The author declares that there is no conflict of interest associated with this study.

References

- [1] Arabi, E. and Garza, T. (2023), "Training design enhancement through training evaluation: Effects on training transfer", *International Journal of Training and Development*, Vol. 27 No. 2, pp. 191–219. <https://doi.org/10.1111/ijtd.12295>
- [2] Ardondi, M., Fortunato, E., Ruozi, C., Di Fronzo, P., Saffioti, A., Ferrari, I., Bassi, M.C., Ghirotto, L. and Pedroni, C. (2026), "Workplace training transfer: A systematic scoping review of evaluation tools for adult learning", *Journal of Workplace Learning*, Vol. 38 No. 1, pp. 1–21. <https://doi.org/10.1108/JWL-03-2025-0068>
- [3] Aziz, S.F.A., Hussein, N., Husin, N.A. and Ibrahim, M.A. (2022), "Trainers' characteristics affecting

- online training effectiveness: A pre-experiment among students in a Malaysian secondary school”, *Sustainability*, Vol. 14 No. 17, 11047. <https://doi.org/10.3390/su141711047>
- [4] Edmondson, A.C. (2019), *The Fearless Organization: Creating Psychological Safety in the Workplace for Learning, Innovation, and Growth*, Wiley, New York, NY.
- [5] Huang, Y.C., Backman, S.J. and Backman, K.F. (2010), “Student attitude toward virtual learning in Second Life: a flow theory approach”, *Journal of Teaching in Travel & Tourism*, Vol. 10 No. 4, pp. 312–334. <https://doi.org/10.1080/15313220.2010.525425>
- [6] Kirkpatrick, J.D. and Kirkpatrick, W.K. (2016), *Kirkpatrick's Four Levels of Training Evaluation*, ATD Press, Alexandria, VA.
- [7] Kraiger, K. and Ford, J.K. (2021), “The science of workplace instruction: Learning and development applied to work”, *Annual Review of Organizational Psychology and Organizational Behavior*, Vol. 8, pp. 45–72. <https://doi.org/10.1146/annurev-orgpsych-012420-060109>
- [8] Lacerenza, C.N., Reyes, D.L., Marlow, S.L., Joseph, D.L. and Salas, E. (2017), “Leadership training design, delivery, and implementation: a meta-analysis”, *Journal of Applied Psychology*, Vol. 102 No. 12, pp. 1686–1718. <https://doi.org/10.1037/apl0000241>
- [9] Mehta, A., Morris, N.P., Swinnerton, B. and Homer, M. (2019), “The influence of values on e-learning adoption”, *Computers & Education*, Vol. 141, 103617. <https://doi.org/10.1016/j.compedu.2019.103617>
- [10] Ministry of Railways (2017), “Railway Minister gives directions for ‘comprehensive training programme’ for all employees of Indian Railways to boost productivity & efficiency”, Press Information Bureau, Government of India, 14 November, available at: <https://www.pib.gov.in/newsite/PrintRelease.aspx?lang=2®=48&relid=173486>
- [11] Mohamed, R. and Alias, A.A.S. (2012), “Evaluating the effectiveness of a training programme using the four-level Kirkpatrick model in the banking sector in Malaysia”, *Proceedings of the 3rd International Conference on Business and Economic Research*, Bandung, Indonesia.
- [12] Phillips, J.J. and Phillips, P.P. (2016), *Handbook of Training Evaluation and Measurement Methods*, Routledge, New York, NY.
- [13] Saks, A.M. and Burke-Smalley, L.A. (2014), “Is transfer of training related to firm performance?”, *International Journal of Training and Development*, Vol. 18 No. 2, pp. 104–115. <https://doi.org/10.1111/ijtd.12029>
- [14] Salas, E., Tannenbaum, S.I., Kraiger, K. and Smith-Jentsch, K.A. (2012), “The science of training and development in organizations: what matters in practice”, *Psychological Science in the Public Interest*, Vol. 13 No. 2, pp. 74–101. <https://doi.org/10.1177/1529100612436661>
- [15] Saxena, P. (2020), “A new model for training evaluation in the banking industry”, *NMIMS Management Review*, Vol. XXXVIII No. 1, pp. 102–122.
- [16] Shukla, A., Dash, S. and Kumar, A. (2024), “Factors affecting transfer of online training: A systematic literature review and proposed taxonomy”, *Human Resource Development Quarterly*, Vol. 35 No. 3, pp. 363–390. <https://doi.org/10.1002/hrdq.21518>