Index

Ability model, 108-109 Ability-motivation-opportunity theory, 86 Accuracy in compensation, 59 AFROSAI-E, 135 American Society for Training and Development (ASTD), 96 Artificial intelligence (AI), 43, 45, 51–52 (see also Emotional intelligence (EI)) Assessment tools, 137 Automation, 54-55 Bar-on emotional intelligence competencies model, 108-109 Behavioural perspective, 87 Big data analytics, 42, 52–53, 202 Blockchain technology, 53–54 Blue-collar workers, 14 Building information modelling (BIM), 119, 146 Classical approach, 87 Cloud computing, 42, 49–50, 202 Coercive pressure, 117 Cognitive intelligence, 106 Compensation and benefits, 132-135, 169-177, 195 improved accuracy in, 59 packages, 133 process, 203 Conceptual/conceptualised construction workforce management model, 127, 160, 166, 206 constituents of Delphi, 160 - 161Delphi outcomes, 165–197

using Delphi to explore applicability, 160 design and execution of Delphi, 161-165 theorising, 148-151 Conceptualised digitalization, 44 Conceptualised model, 201, 204 Configuration theory, 85 Construction, 12, 104, 114, 131, 146 Fourth Industrial revolution and, 42 - 44industry application of motivation theories in, 82-83 projects, 26 sector, 14 workers, 6, 15-16, 26, 75, 82, 113 workforce management in, 3–5 Construction industry, 1–3, 11–13, 50, 104, 134, 140, 143, 197, 202 challenges facing effective workforce management in construction industry, 25 - 28constraints of, 13-16 improving effectiveness of workforce management in construction industry, 28 - 29research focus in construction workforce management, 21 - 25workforce management in, 20 Construction organizations, 5-6, 92, 137, 151, 203, 205 in deploying digital technologies for effective workforce management, envisaged challenges for, 60-63

Construction Sector Council (CSC), 27 Construction workforce management compensation and benefits, 132-135 digital technologies for effective, 49-56 EI, 104-105 emotional intelligence in, 113–114, 144-145 employee involvement and empowerment, 142-144 expected outcomes of effective construction workforce management, 147–148 external environment, 115-116, 119, 146-147 gaps in, 104 institutional theory, 116-119 main constructs of, 166–167 measurement variables of, 167-191 model. 75 performance appraisal and management, 135-138 recruitment and selection, 128-132 technological advancement in, 44-46 theories of emotional intelligence, 108 - 113theorising conceptualised workforce management model, 148-151 training and development, 138-142 understanding concept of emotional intelligence, 105 - 108variable selection for construction workforce management, 128 Content theories, 76 ERG theory, 77 Herzberg's two-factor theory, 78-79 Maslow's hierarchy of Needs, 76-77 McClelland's needs motivation theory, 77-78

Contingency theory, 84-85 Contribution to knowledge, 204 practical contribution, 205 theoretical contribution, 204 Conventional methods, 56 Coronavirus (COVID-19), 2 Cronbach alpha test, 167 Cultural context, 117 Cyclic process, 89 Data management, 57 Data-driven technologies, 42 Decision-making process, 142 Delphi constituents, 160-161 Delphi design and execution, 161 computing data and determining consensus from Delphi, 164-165 conducting Delphi iterations, 163-164 criteria for expert panel selection, 161 - 163Delphi outcomes, 165 main constructs of construction workforce management model, 166-167 measurement variables of construction workforce management model, 167-191 overall view of workforce management practices, 191-194 Delphi process, 159–160 Delphi study, 162-164 Delphi to explore applicability of conceptualised workforce management model, 160 Descriptive theories, 87 Digital human resource management, 45 Digital platforms, 144 Digital technologies, 17, 44, 55, 58, 146-147, 202 AI, 51–52

big data analytics, 52-53 blockchain technology, 53-54 cloud computing, 49-50 cost savings, 58 for effective construction workforce management, 49 efficiency in performance management, 59 enhanced trust, 59-60 improved accuracy in compensation, 59 improved communication, 58 improved data management, 57 improved occupational health and safety, 60 improved productivity, 57 improved training, 56-57 increased employee engagement and participation, 58 IoT, 51 key opportunities in digital technologies deployment for construction workforce management, 56 mobile applications, 55-56 robotics and automation. 58 - 59smart recruitment, 56 strategic decision-making and problem-solving, 58-59 Digital tools, 56 in workforce management, 58 Digital transformation, 44, 46 capability perspective of, 47 Digital workforce management, 61 Digitalisation, 41-45 Direct compensation, 133 E-communication, 58 E-recruitment, 56, 130 Electronic human resource management, 45

Electronic platforms, 203 Emerging digital tools, 58 Emerging technologies, 60

Emotional intelligence (EI), 4, 104-105, 127, 144-145, 183-190, 203 ability model, 109 bar-on emotional intelligence competencies model, 109 in construction workforce management, 113-114 Goleman's mixed model of emotional intelligence, 109-113 theories of. 108 understanding concept of, 105-108 Empathy, 112 Employee, 78 engagement and participation, 58 involvement and empowerment, 142-144, 183 productivity, 57 Employment practices, 17 Equity Theory, 80-81 Evaluation process, 196 Evolutionary approach, 87 Existence, Relatedness, and Growth (ERG), 76-77 Expectancy, 80 theory, 79-80 Expert panel selection, criteria for, 161 - 163Exponential technology, 45 External environment, 115–116, 146-147, 191, 197 construct, 146 influence on construction workforce management, 119

Fourth Industrial Revolution, 41, 43, 130, 202, 205 bibliometric perspective of workforce management and Fourth Industrial Revolution, 46–49 and construction, 42–44

envisaged challenges for construction organisations in deploying digital technologies for effective workforce management, 60-63 era, 4, 17, 137, 143 key opportunities in digital technologies deployment for construction workforce management, 56-60 overview of technological advancement in construction workforce management, 44-46 types of digital technologies for effective construction workforce management, 49-56 Frustration-regression, 77 Goal-setting theory, 81–82 Goleman's Mixed Model of Emotional Intelligence, 109, 197 empathy, 112 motivation, 111-112 self-awareness, 110-111 self-regulation/management, 111 social skills, 112-113 Government legislation, 119 Green workforce management, 19 Gross domestic product (GDP), 13 Guest Model, 90-91, 115 Hard and Soft Model, 91–92 Harvard framework, 88 Harvard Model, 88-89, 115 Herzberg's theory, 82 Herzberg's two-factor theory, 78-79 High-powered computing technology, 45 Human psychology, 203 Human resources, 2

analytic systems, 137

management, 2, 16, 89, 162

Innovation, 43, 58 Inputs, 80 Institutional theory, 116-119 Instrumentality, 80 Intellectual capital, 139 Intelligence quotient (IQ), 105 International Labour Organisation (ILO), 2 Internet, 130 Internet of Things (IoT), 43, 51, 119 Interquartile deviation (IQD), 164 Intranet, 130 Job analysis, 129 Kick in the Ass approach (KITA approach), 82 Knowledge, contribution to, 204-205 Labour-intensive industry, 2 LinkedIn. 195 Machine learning (ML), 45 Macro-environmental factors, 115 Management strategy, 93

Humanistic psychology, 107

Industry 4.0 (see Fourth Industrial

Infrastructure as a Service (IaaS), 50

Revolution)

Hygiene factors, 78

Inequity, 80

Mann–Whitney U-test (M–W test), 167–168, 190 Manufacturing process, 43 Maslow's hierarchy of needs, 76–77 Maslow's theory, 82 Matching Model, 89–90 McClelland's Needs Motivation Theory, 77–78 McGregor's X theory, 91 McGregor's Y theory, 91 Measurement variables of construction workforce management model, 167

compensation and benefits, 169-177 emotional intelligence, 183-190 employee involvement and empowerment, 183 external environment, 191 performance management and appraisal, 177-179 recruitment and selection, 167-169 training and development, 179-183 Michigan model (see Matching model) Mimetic pressure, 118 Mobile applications, 55-56 Motivation, 111-112, 129 application of motivation theories in construction industry, 82 - 83of employees, 21 in workforce management, 76-83 Motivational factors, 79 Motivational techniques, 82

Network visualization, 25 Normative pressure, 118 Normative theories, 87

Occupational health and safety, 60 Office of National Statistics (ONS), 15 Online meeting platforms, 57 Online social media platforms, 195 Organisations, 59, 118, 129–130 digital tools, 58 workforce, 2 Others-inside, 81 Others-outside, 81 Outputs, 80 Over-reward, 80

Performance appraisal and management, 135–138 Performance management, 135 and appraisal, 177–179, 196

efficiency in, 59 Physical technologies, 55 Platform as a Service (PaaS), 50 Practical contribution, 205 Pressure, 116-117 Price Waterhouse Coopers, The (PwC), 60 Problem-solving, 58–59 Process theories, 79 equity theory, 80-81 expectancy theory, 79-80 goal-setting theory, 81-82 Processual approach, 87 Project-oriented organizations, 4 Qualitative research approach, 160 Radio frequency identification (RFID), 51 Recruitment, 128-132, 167-169 process, 195 Resource-based theory, 85-86 Resource-based view (RBV), 85 Reviewed models, 93 Robotics, 54-55 Safety Information Modelling, 55 Satisfaction-progression, 77 Selection, 128-132, 167-169, 195 Self-awareness, 110-111 Self-inside, 81 Self-outside, 81 Self-regulation/management, 111 Semi-Automated Mason, 55 Smart recruitment, 56 Social awareness, 112 Social exchange theory, 87 Social skills, 112-113 Software as a Service (SaaS), 50 Standard deviation (SD), 165 Statistical Package for Social Sciences (SPSS), 164 Strategic decision-making, 58–59 Strategic fit, 87 Strategic theory, 86-87

Structural Equation Modelling, 21 Systemic approach, 87

Talent management tools, 137 Technology, 57 implementation, 62 Theoretical contribution, 204 Three-dimensional printing, 55 Training and development, 138–142, 179–183 Trust, 59–60

Under-reward, 80 United States of America (USA), 15 Universalistic theory, 83–84 Unmanned Aerial Vehicles (UAVs), 43, 55

Valence, 80 Visualisation of Similarities Viewer (VOSviewer), 22–23, 47

Warwick Model, 90, 115 Web of Science, 21 Workers, 104 Workforce management, 2–3, 50 ability-motivation-opportunity theory, 86 application of motivation theories in construction industry, 82-83 bibliometric perspective of workforce management and Fourth Industrial Revolution, 46-49 challenges facing effective workforce management in construction industry, 25 - 28configuration theory, 85 in construction, 3-5 in construction industry, 20-25

content theories, 76-79 contingency theory, 84-85 and determining existing practices, 92-96 envisaged challenges for construction organisations in deploying digital technologies for effective, 60 - 63Guest Model, 90-91 Hard and Soft Model, 91 - 92Harvard Model, 88-89 improving effectiveness of workforce management in construction industry, 28 - 29matching model, 89-90 models, 91, 128 models, and practices, 201 motivation in, 76 overall view of, 191-194 overview of workforce management practices, 17 - 19practices, 4, 19, 93, 117, 143, 147-148, 195 process, 104 process theories, 79-82 related theories, 87-88 resource-based theory, 85-86 strategic theory, 86-87 system, 61 theories and models, 83 understanding, 16 universalistic theory, 83-84 Warwick Model, 90 Workforce performance management suite systems, 137 Working memory, 111 World Economic Forum, The, 13