



한국품질경영학회



The 18th
ANQ
CONGRESS 2020

▶ Online

New Quality & New Trust: Measuring and Sharing of QTI

22(Thu)~23(Fri), October, 2020

KCCI, Seoul, Korea



Ministry of Trade,
Industry and Energy



KOFST
THE KOREAN FEDERATION OF SCIENCE
AND TECHNOLOGY SOCIETIES

KSA

KOREAN
STANDARDS
ASSOCIATION

Invitation Message

The 18th ANQ Congress 2020 International Joint Conference Chairs

Let us express our sincere appreciation to your passion and dedication for enhancing quality skills and knowledge systems through The 18th ANQ Congress 2020 which is going to be held in Seoul, South Korea from Oct 21 to Oct 23, 2020. It is our honor and pleasure to invite you for the memorable event.

The theme of the conference is "New Quality & New Trust: Listed below are a few unique highlights of the 20th ANQ Seoul Conference: Measuring and Sharing of QTI (Quality Trust Index)". Through this opportunity, we hope for quality experts, practitioners, and academicians to share their creative ideas and approaches for preparing the upcoming decade of Industry 4.0.

Listed below are a few unique highlights of the 20th ANQ Seoul Conference:

- ✓ Location: Downtown Seoul, near the City Hall & Namdaemun
- ✓ Recognizing IKA Awards & AREQP Excellence practices
- ✓ Selected papers to be published in IJQSS (International Journal of Quality and Service Sciences), an international SCOPUS indexed Emerald published journal
- ✓ Announcing QTI (Quality Trust Index) Survey Results
- ✓ Recognizing 20 Best Books and Articles authored in Asia since 2000
- ✓ Recognizing 20 Best Quality Companies (NOW) and 20 Best Quality Companies (FUTURE) in ASIA.
- ✓ Sharing KS-SQI & KS-QEI as Best Quality Measurements in Korea
- ✓ Learning Great Quality Korea Practices including Samsung Electronics, Hyundai Motors, LG Electronics, and etc.
- ✓ Site visit program: Hyundai Motors Factory and Korean Folks Village

To meet rising needs of Industry 4.0, we must pioneer the decade with new methods and approaches. This is exactly what the Seoul ANQ Conference is aiming for. By combining quality and trust, by recognizing excellent practices over different cultures, and by integrating professional ideas from many countries, ANQ will provide most up-to-date and effective insights and skills for the industry, academic and social quality associates.



Prof. Wan-seon Shin
Chairman Elect, ANQ



Dr. Sang-jin Lee
Chairman & CEO of
Korean Standards Association

Co-Chairman Dr. Prof. Wan-seon Shin (Chairman-elect, ANQ & Former President of Korean Society for Quality Management (KSQM), SungKyunKwan Univ.)

Co-Chairman Dr. Sang-jin Lee (Chairman & CEO of Korean Standards Association)

Invitation Message

Dr. Noriaki Kano (Honorary Chairman, ANQ)

On 17th November 2002 in Tokyo, CAQ–China, CSQ–Chinese Taipei, JSQC and KSQM jointly held the annual meeting of Asian Quality Symposium (AQS) and invited the six Asian quality organizations such as Hong Kong, India, Indonesia, Iran, Thailand and Vietnam to discuss the joint proposal from the above four founding organizations such as CAQ, CSQ, JSQC and KSQM to expand AQS into the Asian Network for Quality (ANQ). Then, all the representatives of the above 10 organizations signed “ANQ Statement 2002”, entitled “Quality for Prosperity and Integration.” ANQ was formally established through this agreement.



Dr. Noriaki Kano
Honorary Chairman, ANQ

Among the highlights of this statement we can find the followings:

- Asia is called as “Plant of the World”.
- The image of Asia is changing from providing “simple and cheap labor” to providing “Knowledge work at a reasonable cost”.

At inception, some thought these expressions were pretty bold. But today 18 years later, the seven organizations from Bangladesh, Dubai, Kazakhstan, Nepal, Pakistan, Russia, and Singapore joined and many people accept the above highlighted statements without any special reservation. We favorably accept that many papers related to the above have been presented and discussed in recent ANQ congresses.

KSQM the organizers of the Congress have defined the following theme:

“New Quality and New Trust:

Measuring and Sharing QTI (Quality Trust Index)”.

“Trust” is a very important concept in Asia, underlying the “mutual respect and compassion” listed as a key phrase in the ANQ Way. We hope various papers will be presented and lively discussions will take place in many sessions under this theme in ANQ Congress 2020 Seoul.

Due to the worldwide spread of Covid-19, many international conferences on quality planned this year have been cancelled. However, in alignment with one of the core values of ANQ ‘Flexibility and Adaptability’ is being demonstrated in action by holding virtual ONLINE ANQ Congress on October 21 to 23 in Seoul as scheduled.

I compliment KSQM our hosts for making these arrangements and look forward to welcoming you to the ANQ Congress 2020 online.

ANQ Congress 2020 Schedule

* Korea- Local Time

ANQ-CEC Meeting (20 October, Tuesday)

- 14:00~18:00 - <https://zoom.us/j/3695768350?pwd=Y08yVFdvTWNSclJneFlJazBNSWRGdz09>
(ID : 369 576 8350)
- Password required (for the password, please refer to the meeting invitation email sent to you)

ANQ board Meeting (21 October, Wednesday)

- 14:00~18:00 - <https://zoom.us/j/3695768350?pwd=Y08yVFdvTWNSclJneFlJazBNSWRGdz09>
(ID : 369 576 8350)
- Password required (for the password, please refer to the meeting invitation email sent to you)

1st day (22 October, Thursday)

- 14:00~14:20 **Opening Ceremony**
- <https://zoom.us/j/3695768350?pwd=Y08yVFdvTWNSclJneFlJazBNSWRGdz09>
(ID : 369 576 8350 / PW: TsFk21)
- Panisuan Jamnarnwej Ph.D, Chairman of Asian Network for Quality
- Sunghoon Hong Prof, President of Korean Society for Quality Management
- Sangjin Lee Chairman & CEO of Korean Standards Association

- 14:20~15:50 **Plenary Session I (Worldwide Quality Strategies after COVID 19)**
- <https://zoom.us/j/3695768350?pwd=Y08yVFdvTWNSclJneFlJazBNSWRGdz09>
(ID : 369 576 8350 / PW: TsFk21)
- 4 keynote speeches recorded (or online streaming) (60 min)
- Discussion with 4 keynote Speakers in real time (30 min)

Quality Strategies - before, under and after Corona
Professor Jens Jörn Dahlgaard, Ph.D., Linköping University (Sweden)

Building Society Quality towards with-Corona Society
Professor Emeritus Noriaki Kano Ph.D., Tokyo University of Science (Japan)
With Kazuyuki Suzuki, Tomonori Hasegawa, and Yoshihisa Okamoto

COVID-19 and its impact on people and the way business and quality is managed
Janak Mehta, Chairman and Managing Director of TQMI (India)

Coping with Global Turbulence . . . Crafting a Quality Approach
Gregory H. Watson, PhD., EUR. Ing. (USA)

- 15:50~16:10 **Break**

- 16:10~17:00 **Awards Ceremony**
- <https://zoom.us/j/3695768350?pwd=Y08yVFdvTWNSclJneFlJazBNSWRGdz09>
(ID : 369 576 8350 / PW: TsFk21)
- IKA Award Ceremony / 4 acceptance speeches recorded

- 17:00~18:10 **11 Parallel Sessions (70 min)**
- 55 paper presentations
(5 papers for each session)
- Presentation
(10 min real-time or video presentation w/ 5 min Q&A)
- [Please refer to the table below for details.](#)

ASA Award Ceremony & ARE-QP Award Ceremony (170 min)

- ASA Award Ceremony
- ARE-QP Award Ceremony
<https://us05web.zoom.us/j/5844348459?pwd=RzILZlJkeHRvTG16N2lFbUI1TGRJdz09>
(ID: 584 434 8459 / PW: 9zQA2v)

* Korea- Local Time

ANQ Congress 2020 Schedule

2nd day (23, October, Friday)

14:00~15:20

11 Parallel Sessions

- 57 paper presentations (5 papers for each session)
- Presentation (10 min real-time or video presentation w/ 5 min Q&A)
- [Please refer to the table below for details.](#)

15:20~15:30

Break

15:30~16:50

Plenary Session II (New Quality & New Trust)

- <https://zoom.us/j/3695768350?pwd=Y08yVFdvTWNScUJneFlJazBNSWRGdz09>

(ID: 369 576 8350 / PW: TsFk21)

- 4 keynote speeches recorded (or online streaming) (60 min)
- QTI Survey Results Recognition (20 min)

Samsung's Activities for Excellence in Quality

Youngjin Suh, Ph.D, Vice President of SAMSUNG Electronics (Korea)

How to apply AI and Blockchain technology to New Quality Management

Sangjin Lee, Chairman & CEO of Korean Standards Association (Korea)

Opportunities and Challenges of Quality Management and Engineering in the Era of Industry 4.0

Professor Zen He, Ph.D., Tianjin University (China)

Digital Transformation based on Platform

Professor Heejun Park, Ph.D., Yonsei University (Korea)

16:50~18:10

Closing Ceremony

- <https://zoom.us/j/3695768350?pwd=Y08yVFdvTWNScUJneFlJazBNSWRGdz09>

(ID: 369 576 8350 / PW: TsFk21)

- Best Paper Award presentation (20 min)
- ASA Award & ARE-QP Award announce (5 min)
- Closing comment from each country w/performance recorded (3~4 min per country / 30 min)
- Special performance from Korea (20 min)
- 2021 ANQ Congress host country presentation (5 min)



New Quality & New Trust:
Measuring and Sharing of QTI

Parallel Session 1 . Quality Analysis and Methods**ZOOM URL :** <https://us02web.zoom.us/j/3588406711?pwd=cG8xOVZBZlVlRmZ3dQQmNZa2U0dz09>

(ID: 358 840 6711 / PW: ksqm)

Chair I Dr. Myung-Hwan Na, Chonnam National University, South Korea / nmh@chonnam.ac.kr

ANQ-094

Clusterwise Multivariate Kernel Ridge Regression Analysis and the Visualization of the Analytical Results
Yuta Kawakami, Manabu Kuroki (Japan)

ANQ-095

Study on Likelihood-Ratio-Based Multivariate EWMA Control Chart Using Lasso
Takumi SARUHASHI, Masato Masato OHKUBO, Yasushi NAGATA (Japan)

ANQ-014

Dielectric Study of Coal Samples for Phased Array RADAR Based Measurements at Blast Furnace
Chitresh Kundu, Prabal Patra (India)

ANQ-030

Effectiveness of Online Training Programs
Joohee Chaturvedi, Dr.Mahima Rai (India)

ANQ-088

Growth Status Diagnosis of Chinese Cabbage Using Several Statistical and Machine Learning Methods
Sooram Kang, Wanhyun Cho, Myunghwan Na, Hyeonseok Ko (Korea)**Parallel Session 2. Quality Evaluation in various industries****ZOOM URL :** <https://us02web.zoom.us/j/3884857585?pwd=eUIPeHJvY0FNbDJlQ2ZPS0xscGVlUT09>

(ID: 388 485 7585 / PW: ksqm)

Chair I Do-Hyeon Ryu, Pohang University of Science and Technology, South Korea / dhryu@postech.ac.kr

ANQ-096

Analysis of Teaching and Learning Process based on a Daily Management Diagnosis Approach for School Education
Nursuhana Alauddin, Shu Yamada (Japan)

ANQ-097

Evaluations of the CM effect considering covariates
Kento Takanashi, Shu Yamada (Japan)

ANQ-043

Breakthrough enhancement in coil shape of Down coiler-1,HSM TSJ
N N Venkatesh, Vinayak Vadagave, Suresh Chowdhury, V K Shah, A K Jha (India)

ANQ-044

Experimental Investigation and Statistical Approach to decrease the variation of UTS/YS ratio of Fe500 SD rebar
Pankaj Kumar, Ankit Kumar Agarwal, Abhishek Raj, Soma Ghosh, Sai Pavan S. N, Bipul Chakraborty, Khyati, Mahatab, Shreya (India)

ANQ-148

Collection and Analysis of Electricity Usage Data in University Campus: The Case of POSTECH
Do-Hyeon Ryu, Young Myoung Ko, Young Jin Kim, Minseok Song, Kwang-Jae Kim (Korea)

Parallel Session 3. Comparison and improvements of existing quality processes

ZOOM URL : <https://us02web.zoom.us/j/9581280280?pwd=QS8zTVBvV3cxVUt0T0E0cGVtOTdFdz09>

(ID: 958 128 0280 / PW: ksqm)

Chair I Seong Joon Kim, Chosun University, South Korea / seongjoon.kim@chosun.ac.kr

ANQ-098

A comparison of MT and RT methods for missing data analysis methods
Kakeru Nishizawa, Masahiro Maeda, Yasushi Nagata (Japan)

ANQ-099

Recognition Taguchi Method Using AdaBoost and Performance Comparison
Kentaro HONMA, Yasushi NAGATA (Japan)

ANQ-046

Modification of systems of Blast furnace auxiliaries to control stack emissions, fugitive emissions and improvise water management
Subhashis Kundu, Shambhu Nath, Radha Raman Abhyudaya, Aarushee Agrawal, Ravi Shankar, K Rama Krishna Rao (India)

ANQ-047

Improvement in % IF heats with Carbon levels \leq 20 ppm in RH degasser at LD#2
Tanmay Siddhartha Waghmare, Swarup Kumar Sinha, Gaurav Singh, Prasenjit Chanda, Samagra Kumar, Saroj Kumar Singh (India)

ANQ-149

Wavelet-Based Noise Removal Using Step-Down Bootstrap Aggregating
Munwon Lim, Suk Joo Bae (Korea)

Parallel Session 4. Users trust and Quality performance. Quality, materials, and manufacturing

ZOOM URL : <https://us02web.zoom.us/j/7855861325?pwd=VzAyaUg0djhU3ZiRVJ0WDI5MVZ5dz09>

(ID: 785 586 1325 / PW: ksqm)

Chair I Yasushi Nagata, Waseda University, Japan / ynagata@waseda.jp

ANQ-100

Multivariate Multiple Single Regression and Performance Comparison
Shota Nakayama, Yasushi Nagata (Japan)

ANQ-101

Statistical analysis and prediction in American football
Yu TAKEZAKI, Yasushi NAGATA (Japan)

ANQ-048

Improvement in Superheat strike rate at LD3 Ladle Furnace by advance data analytics
Anil Kumar Pujari, Hari Babu Upadhyay, Virendra Kumar Bari, Anil Kothari, Gaurav Kumar, Rohit Kumar Singh, Sparsh (India)

ANQ-050

Winning customer trust through end to end optimization modelling by leveraging Data science
Rajeev Kumar Malhotra, Avijit Bose, Umesh kr Singh, Naresh Dhal, Avijit Halder, Vipul Tiwary, Subrata Chatterjee, Abhishek Chaudhary (India)

ANQ-009

The Application of QTI in User's Deeply Participated Development Mode
Long Zhou, Yifan Jiang, Wenbo Yang, Huangjian Guo (China)

Parallel Session 5. Quality management and decision making**ZOOM URL :** <https://us02web.zoom.us/j/9708296926?pwd=S0N3NmRqNDhqMENtQWRpN2lnUDAyZz09>**(ID: 970 829 6926 / PW: ksqm)****Chair I** Shu Yamada, Keio University, Japan / shu.yamada@keio.jp

ANQ-102

Discussion on Supersaturated Design and its Data Analysis Method in Computer Experiments
Arata Ueda, Shu Yamada (Japan)

ANQ-103

A comparison of individual and simultaneous data of MEG and EEG concerned with component extraction of brain signal
Yuya Kawabata, Takahisa Asakawa, Motohisa Hirono, Shu Yamada (Japan)

ANQ-051

Predictive Quality Management(PQM) at PT 4" Mill of Tata Steel, Tubes SBU
Pankaj Kumar Sharma, Chandra Prakash, Dhananjay Kumar (India)

ANQ-004

The Influence of WFH Decision Factors on Service Quality Performance and Quality of Life
Inurina Binti Ibrahim, Syazwan Roslan, Jiseok Yoon, Gye Soo Kim (Korea)

ANQ-016

Research on the Method of Quality Problem Close Loop of Nuclear Facilities
Jinlong Liu, Guohua Wang (China)**Parallel Session 6. Quality, materials, and manufacturing****ZOOM URL :** <https://us02web.zoom.us/j/2404943251?pwd=akZrdERhUTJyeUZzbFBqSkxvVDIyZz09>**(ID: 240 494 3251 / PW: ksqm)****Chair I** Hyuck Moo Kwon, Pukyong national University, South Korea / iehmkwon@pknu.ac.kr

ANQ-104

A Collapsibility Condition in Ridge Regression Analysis
Ryo Hasegawa, Manabu Kuroki (Japan)

ANQ-105

Improvement of prediction error by signal-to-noise ratio in the Taguchi's T-method
Yu Jinguji, Shun Matsuura, Shu Yamada (Japan)

ANQ-054

Reduction of Hot Metal Silicon through blast furnace operating regime change at I Blast Furnace, Tata Steel, Jamshedpur
Ramdasu Bhaskar, Basant Kumar Singh, Pratyush Ranjan Samantaray, Sanjiv Kumar, Dhiren Patnaik, Raj Kumar, Jaya krishna, Vineet Ranjan Tripathi, Padmapal, Ashish Agrawal (India)

ANQ-003

Setting a Threshold of the Sensor Variable to Detect a Failure Cause under Performance Degradation
Hyuck Moo Kwon, Sung Hoon hong, Min Koo Lee (Korea)

ANQ-017

Exploration and Practice of "Customer Driven" by Enterprises under the Background of Intelligent Manufacturing
Wang Qingwen, Yang Qingya, Yao Mingyu (China)

ANQ-029

Sequential Design of Computer Experiments: Current Status and Future Directions
Phan Thi Hong Mai, Jai-Hyun Byun (Korea)

Parallel Session 7. Quality standards and certificates

ZOOM URL : <https://us02web.zoom.us/j/8519701720?pwd=L1NyY0l1TkIFSmFmWGd4VzNpMlk3Zz09>

(ID: 851 970 1720 / PW: ksqm)

Chair I Uk Jung, Dongguk University, South Korea / ukjung@dongguk.edu

ANQ-106

A survey of current status on activation of ISO 14001 certification in society
Naoki Kono, Masaaki Kaneko, Chikako Makino, Shu Yamada (Japan)

ANQ-107

A study on the difference between earthquakes and pandemics regarding the deployment of function to be performed in an area for continuing healthcare
Sae Iwata, Chisato Kajihara, Masahiko Munechika (Japan)

ANQ-056

Shop Yield Improvement at LD2 & SC by 1 %: A perfect Amalgamation of Smart Technology and Data Analytics
Indraveer Singh, Saroj Kumar Singh, Ranjay Kumar Singh, Amarnath Mukherjee, Ajay Kumar Singh (India)

ANQ-005

An Empirical Study on the Effect of Quality of Logistic Service on Customer Loyalty and Recommendation to Others: Focusing on KS-SQI
TaeWan Kim, JongWook Lim, Chae Hoon Lee (Korea)

ANQ-018

Exploration and Practice of Total Quality Management of Hefei Haier Refrigerator Co., Ltd.
Guan Yuxian, Cheng Feng, Zhang Cun (China)

Parallel Session 8. Quality and customer value

ZOOM URL : <https://us02web.zoom.us/j/8419476009?pwd=YkpyUDNncE9iWHF0emxtdUx2WWtJUT09>

(ID: 841 947 6009 / PW: ksqm)

Chair I Ramachandran Krishna, Tata Steel, India / rkrishna@tatasteel.com

ANQ-108

A research on application of Gaussian process regression for inverse estimation of nominal the best response
Mio Nagashima, Shu Yamada (Japan)

ANQ-109

Quality Improvement of Food Packaging that Reflects Consumer Needs
Hiromichi Takano, Ayako Noguchi, Takeshi Fukushima, Masahiko Munechika (Japan)

ANQ-059

AMRIT – Improve Value Realization from Co-Product Steel through Intelligent Sales & Operations Planning powered by Advanced Analytics
R. Krishna, Dipankar Dasgupta, Utkarsh Sachan, Saibal Nandi, Anubhuti Banerjee, Sourabh Kumar Singh, Debasish Dutta, Kumar Sawan, Santosh Kumar Singh (India)

ANQ-007

Smart Quality Management in Industry 4.0 – Open Quality System
Wan Seon Shin, Ho Jun Song (Korea)

ANQ-019

Practice of Quality Improvement based on the Improvement of Employees' Ability
Mingli Zhou, Gezheng Wu, Qiang Meng (China)

Parallel Session 9. Quality innovation and R&D**ZOOM URL :** <https://us02web.zoom.us/j/6434333847?pwd=TEVPbG9rc3NMMTVleI9lY3VXM01zQT09>**(ID: 643 433 3847 / PW: ksqm)****Chair I** Lotto Lai, Hong Kong Society for Quality / lotto.lai@gmail.com

ANQ-110

Understanding activation of management system certification in society
Yoshimasa Koyama, Masaaki Kaneko, Chikako Makino, Shu Yamada (Japan)

ANQ-111

Navigation Style Manual for Questionnaire Analysis
Sho KAWASAKI, Takenori TAKAHASHI (Japan)

ANQ-062

Data driven approach to investigate failure of Blast furnace stove domes
Abhilash Verma, Kaushal Kishore, Subodh Nath Patel, Mithilesh Kumar Jha, Anup Kumar (India)

ANQ-064

Achieving benchmark performance at LD#1, Tata Steel India
Ashutosh Kumar, Akhilesh Kumar Mishra, Navneet Sinha, Vikram Singh Shekhawat, Abhinav Singhvi, Chintala Abinash (India)

ANQ-023

Extension Business Innovation Model Approach in Covid-19 Outbreak Situation
Kim-Hung Lotto LAI (Hong Kong)**Parallel Session 10. Quality management****ZOOM URL :** <https://us02web.zoom.us/j/9419319070?pwd=KzNRT1Vrc2tUUmV2MHI6aFVNSEFCQT09>**(ID: 941 931 9070 / PW: ksqm)****Chair I** Tsang Wai Chun, Marianna, Hong Kong Society for Quality / marianna.tsang@gmail.com

ANQ-112

Impression created by packaging design: A case study of large capacity yogurts
Risako Takayama, Masahiko Munechika (Japan)

ANQ-113

Proposal to evaluate a disaster food stockpile and operation system for hospital inpatients
Masaaki KANEKO (Japan)

ANQ-114

Measurement precision with ordinal categorical data
Shunsuke Tanigaki, Jun-ichi Takeshita, Shizu Itaka, Tomomichi Suzuki (Japan)

ANQ-070

Prescription to achieve Zero Defect Products through collaboration of Industry 4.0 and Intelligent manufacturing system
Sarika Vivek Joshi, Vivek S Joshi (India)

ANQ-024

Enhancement of Corporate Governance in Small to Medium Size Non-Governmental Organizations (NGO) in Hong Kong from the Board's Perspective
Tsang Wai Chun, Marianna, Philip K.I. Chan (Hong Kong)

Parallel Session 11. Quality and human behavior

ZOOM URL : <https://us02web.zoom.us/j/4629082193?pwd=aEFjc3ZUekJXbkJGdTdk8wVVo1QT09>

(ID: 462 908 2193 / PW: ksqm)

Chair I Masahiko Munechika, Waseda University, Japan / munechika@waseda.jp

ANQ-115

A study on relaxation when using a bean bag chair

Kaito Kiyama, Masahiko Munechika (Japan)

ANQ-116

Precursor Pattern Extraction of Sudden Events from Time-series Databases

Taichi Sato, Takeshi Kaneko (Japan)

ANQ-117

A Study on Planning and Evaluation of Disaster Exercise Based on Disaster Records

Chisato KAJIHARA, Masahiko MUNECHIKA (Japan)

ANQ-071

Improvement in Gear Shifter Cable Assembly of a Van Using Six Sigma Methodology

Makarand Kanade, Pradeep Chandrasekaran, Madhukar Bagalkot (India)

ANQ-025

Exploratory Study on Synergy of Sustainability Model between Time Bank and Innovative Elderly Healthcare Platform

Chiu Chi Sing, Cook , Philip K.I. Chan (Hong Kong)

Parallel Session 12. Quality measurement**ZOOM URL :** <https://us02web.zoom.us/j/3588406711?pwd=cG8xOVBZbzlvRmgxZ3dQQmNZa2U0dz09>**(ID: 358 840 6711 / PW: ksqm)****Chair I** Catherine Y. P. Chan, Hong Kong Quality Function Deployment Association / catherine@qfdhk.org**ANQ-118****Study on the evaluation of situations in the integrated community care system**
Shogo KURATA, Masahiko MUNESHIKA, SHINDO (Japan)**ANQ-119****Proposal of accommodation facilities based on user preference extraction using reviews**
Yui Matsuki, Yurina Shirakawa, Takeshi Kaneko (Japan)**ANQ-120****Optimal replacement policy for a deteriorating system subjected to geometric Brownian motion**
Ryohei Yoshida, Lu Jin (Japan)**ANQ-072****Measure Right every time to build Quality & Win Customer's Trust**
Pradeep Kumar Aggarwal (India)**ANQ-026****The Two Kinds of Deployment in Quality Function Deployment (QFD) for Implementing Quality Assurance**
Catherine Y. P. Chan, Glenn H. Mazur (Hong Kong)**Parallel Session 13. Quality analysis in service and public sectors****ZOOM URL :** <https://us02web.zoom.us/j/3884857585?pwd=eUIPeHJvY0FNbDJlQ2ZPS0xscGVlUT09>**(ID: 388 485 7585 / PW: ksqm)****Chair I** M.Minsuk Shin, Konkuk University, South Korea / shinm@konkuk.ac.kr**ANQ-121****An Analytical Model of Customer Purchase Factors Based on Conditional Variational Autoencoder Learned of Browsing History Data**
Tatsuya Kawakami, Yuta Sakai, Haruka Yamashita, Masayuki Goto (Japan)**ANQ-122****Service Quality Evaluation Using Actual Data on After-sales Services**
Kakeru Takahama, Shizu Itaka, Tomomichi Suzuki (Japan)**ANQ-123****Imputation method for missing values considering temperature fluctuations with high locality**
Keitoku Yoshino, Shizu Itaka, Tomomichi Suzuki (Japan)**ANQ-060****Dealer Scheme Optimization: Wires Business Tata Steel**
Saibal Nandi, Pulak Kanti Paul (India)**ANQ-042****The UAE Government Excellence Model – GEM 2.0**
Marwan AlZaabi (Arab Emirates)

Parallel Session 14. Behavioral analysis and quality

ZOOM URL : <https://us02web.zoom.us/j/9581280280?pwd=QS8zTVBvV3cxVU0tOT0E0cGVtOTdFdz09>

(ID: 958 128 0280 / PW: ksqm)

Chair I Alamgir Kabir, Mitali Group, Bangladesh / kabirmasum@gmail.com

ANQ-124	<p>Considering fashion style proposal of item recommendation system Yuki Sano, Takeshi Kaneko (Japan)</p>
ANQ-125	<p>A Study on Analysis Model of Customers' Purchasing Behavior based on Knowledge Graph Attention Network Fumiyo Ito, Zhiying Zhang, Gendo Kumoi, Masayuki Goto (Japan)</p>
ANQ-126	<p>A Method for Software Test Design Considering Weakness and Adverse Condition Koichi Tanizaki, Yasuaki Hiruta, Takeshi Soma, Naohiro Yamao, Shogo Kato, Yoshinori Iizuka (Japan)</p>
ANQ-057	<p>Monitoring Steel Quality through Lead Indicators of process parameters in Steel Making and Casting Process Samagra Kumar, Dhiraj Prasad, Shainu Suresh, Akshay Khullar, Shreyas Puttige, BalakrishanV, Avinash Kumar, Biswajit Barik (India)</p>
ANQ-001	<p>A study on Challenges for Human Capital Development in Quality Management at RMG sector of Bangladesh Dr. K M Alamgir Kabir (Bangladesh)</p>

Parallel Session 15. Quality policy

ZOOM URL : <https://us02web.zoom.us/j/7855861325?pwd=VzAyaUg0djhU3ZiRVJ0WDI5MVZ5dz09>

(ID: 785 586 1325 / PW: ksqm)

Chair I Larisa Aleksandrovna Fedyk, ICS «All-Russian Register», Russia / info@9000-2001.ru

ANQ-127	<p>Threshold policy of condition-based maintenance for a multi-state system and deteriorating sensor Satoshi Genda, Lu Jin (Japan)</p>
ANQ-128	<p>Analysis of candidates' features during video recruitment interviews conducted by companies Satoshi Enomoto, Akira Kuzuhara, Masaaki Yasui, Tsubasa Takahashi, Minami Takahashi, Aya Ishigaki, Taku Harada, Shizu Itaka, Tomomichi Suzuki (Japan)</p>
ANQ-129	<p>Study on a Swiss-system tournament considering draw results Yusuke Isaka, Shizu Itaka, Tomomichi Suzuki (Japan)</p>
ANQ-053	<p>Reducing idle freight payout and carbon footprint through application of operations research at Tata Steel India Deblin Chakraborty, Praveen Dubey, Anil Kr. Singh Harshana, Manoj Kumar Chatterjee, Amit Kumar Chatterjee, YN Rao, Surjit Laha, Bijan Mishra (India)</p>
ANQ-002	<p>Improving the management efficiency of a medical organization through the application of CSR principles and criteria and the introduction of conscientious practices of conformity and expectations of consumers in the field of preservation and prevention of health in pandemic conditions COVID-19 Pundel Igor Sergeevich, Fedyk Larisa Alexandrovna (Russia)</p>

Parallel Session 16. Process optimization**ZOOM URL :** <https://us02web.zoom.us/j/9708296926?pwd=S0N3NmRqNDhqMENTQWRpN2lnUDAYZz09>**(ID: 970 829 6926 / PW: ksqm)****Chair I** Too Meng Ken, Too Meng Ken Consultancy, Singapore / ktmken@singnet.com.sg

ANQ-130

An Analytical Model of Response Interval Between Employees on Business Chat Systems Based on Latent Class Model
Fuyu Saito, Ayako Yamagiwa, Tianxiang Yang, Masayuki Goto (Japan)

ANQ-131

Enhancing Quality of Care by Improving Guidelines for Care Plan Creation
Sera Ito, Shizu Itaka, Tomomichi Suzuki (Japan)

ANQ-132

Verification of Individual Training System for Process Management in Blood Collection
Ryoko Shimono, Rie Akinaga (Japan)

ANQ-055

A Time Series Forecasting Engine to Propose Raw Material Buffer In a Division of TATA Steel
Deblin Chakraborty, Manoj Kumar Chatterjee, Amar Nath Roy, Soupoarno Mukherjee, Rahul Upadhayay (India)

ANQ-027

Optimizing The Process of Sausage Manufacturing In Food Industry Through Six Sigma Methodology
Too Meng Ken, Muhammad Firdaus (Singapore)**Parallel Session 17. Quality prediction****ZOOM URL :** <https://us02web.zoom.us/j/2404943251?pwd=akZrdERhUTJyeUZzbFBqSkxvVDIyZz09>**(ID: 240 494 3251 / PW: ksqm)****Chair I** Priyanka Varma, Varma Tractors, India / pvarma0001@gmail.com

ANQ-133

A Study on the Representation of Characteristics of Texts Used for Stock Price Prediction
Masafumi Takahashi, Takeshi Kaneko (Japan)

ANQ-134

An Analytical Model of Customer Purchasing Behavior Considering Event Characteristics on Flower Delivery Business
Aya Kitasato, Kenya Nonaka, Haruka Yamashita, Masayuki Goto (Japan)

ANQ-135

Sequential Bayesian Design for Accelerated Life Tests Based on Reinforcement Learning
Hiroki Iwama, Hideki Nagatsuka (Japan)

ANQ-081

Enablers of Successful Business Management: Organizational Values, Quality Trust Index (QTI) and Relationship Building
Arun Malik, Priyanka Varma (India)

ANQ-034

The Study of Service Quality for Vegetarian Industry in Taiwan – an Example of A Company
Ning-En Chang, Jhy-Ping Jhang (Taiwan)

ANQ-037

How to build a happy school: Practical solutions to improve education quality management
Nguyen Thanh Tung (Vietnam)

Parallel Session 18. Quality and SMART**ZOOM URL :** <https://us02web.zoom.us/j/8519701720?pwd=L1NyY0l1TkIFSmFmWGd4VzNpMlk3Zz09>**(ID: 851 970 1720 / PW: ksqm)****Chair I** Udayan Pathak, Tata Motors Limited, India / udayan.pathak@tatamotors.com

ANQ-136

Proposal of A Conditional Maximum Likelihood Estimator in the COM-Poisson Distribution and its Uniqueness and Existence
Youhei Tomio, Hideki Nagatsuka (Japan)

ANQ-137

Construction of evaluation model considering fashion trend of fashion coordination
Saori Shibasaki, Takeshi Kaneko (Japan)

ANQ-138

A Prediction Model of Earned Runs Based on Latent Class Markov Chain for Starters of Professional Baseball Pitchers
Ryosuke Uehara, Takuma Matsumoto, Kenta Mikawa, Masayuki Goto (Japan)

ANQ-078

Engineering World Class Quality: R&D's Way of Life
Amol Wagh, Kishor Patil, Farhad Gocal, Mohit Modi, Kaushik Biswas, Udayan Pathak (India)

ANQ-028

Modification of Foam Injection Molds to Reduce Cycle Times and Costs in the Production Process
Apiwat Hiranpradit, Sanga Boonkeaw, Wanvipa Majchacheep, Noppadol Potirook, Thanakom Soontornchainacksaeng (Thailand)

ANQ-038

Smart Space Design Measurement for Social Housing in Vietnam
Nguyen Thi Phuong Uyen, Do Nhu Luce (Vietnam)**Parallel Session 19. Quality Estimate models****ZOOM URL :** <https://us02web.zoom.us/j/8419476009?pwd=YkpYUDNncE9iWHF0emxtdUx2WWtJUT09>**(ID: 841 947 6009 / PW: ksqm)****Chair I** Ngo Van Nho, Institute for Quality Assessment, Vietnam / vqa.hcm@gmail.com

ANQ-139

A Successful Method of Parameter Estimation for Tweedie Exponential Dispersion Models
Tomoya Sera, Hideki Nagatsuka (Japan)

ANQ-140

A New Stochastic Degradation Model Based on the Family of Powered Inverse Gaussian Distributions
Takuya Fushihara, Hideki Nagatsuka (Japan)

ANQ-141

Analysis of advantage relationship in competition
Hongma Wu, Shizu Itaka, Tomomichi Suzuki (Japan)

ANQ-067

Leveraging Ecosystem for Performance Excellence – Tata Best Practices & Benchmarking Programme
Devraj Chattaraj, Naman Kumar Gupta, Simran Bhullar (India)

ANQ-039

Intellectual entrepreneurs the soul of 4.0 economy
Trinh Manh Dung, Nguyen Minh Vy, Ngo Van Nhon (Vietnam)

Parallel Session 20. Strategic Quality Management**ZOOM URL :** <https://us02web.zoom.us/j/6434333847?pwd=TEVPbG9rc3NMMTVlel9lY3VXM01zQT09>**(ID: 643 433 3847 / PW: ksqm)****Chair I** Li Saiqun, China Association for Quality, China / lisq@caq.org.cn

ANQ-142

Construction of Demand Forecast Model of Tokyo Taxi Based on Probe Data Analysis
Reo IIZUKA, Yuki ONO, Kenya NONAKA, Yuta SAKAI, Masayuki GOTO (Japan)

ANQ-143

Assessment criteria of palliative care development in hospitals to promote spreading of highly qualified palliative care
Arisa Kaneko, Tatsunori Hara, Satoko Tsuru, Kouichi Tanizaki, Naohisa Yahagi, Masashi Kato, Fumihiko Wakao, Toshiaki Shinomiya, Tetsuro Tamamoto (Japan)

ANQ-066

Mechanical Property Stabilization During Mill Start-up at New Bar Mill
Pankaj Kumar, Praveen V Thampi, Abhishek Raj, Soma Ghosh (India)

ANQ-008

Developing an Open Quality Concept as a Strategic Management System for Smart Factory
Wan Seon Shin, Andita Meilyana, Shujaat Ali, Da Eun Sung (Korea)

ANQ-020

Explore the TQM of Haier Air-conditioner in the Era of Industry 4.0
Liu Xiaolong, Cheng Junfeng (China)**Parallel Session 21. Continuous quality management system****ZOOM URL :** <https://us02web.zoom.us/j/9419319070?pwd=KzNRT1Vrc2tUUmV2MHI6aFVNSEFCQT09>**(ID: 941 931 9070 / PW: ksqm)****Chair I** Seiichi Yasui, The University of Tokyo, Japan / yasui@tqm.tu-tokyo.ac.jp

ANQ-145

Development of a method for analyzing physicians' prescribing strategies using medical data
Momoko NISHIOKA, Tatsunori HARA, Satoko TSURU, Akihiro NAKAO, Seiichi YASUI, Takashi MOTEGI, Yoshifumi YAMAMOTO, Shigeo MURO, Tetsuro TAMAMOTO (Japan)

ANQ-144

Developing a policy formulation support system of service design and resource allocation to reduce hospital ward risk
Yoshio Yamazoe, Tatsunori Hara, Satoko Tsuru, Seiichi Yasui, Akihiro Nakao, Fumio Fukumura, Masahiko Kawaguchi, Tetsuro Tamamoto (Japan)

ANQ-076

Effective Tools for Warranty Problem Solving
Mahesh Hegde, Prasad Shende (India)

ANQ-015

Development of monitoring system for onion yield measurement using convolution neural network features and image processing technology
Sangkyoon, Kim, Myung-Hwan, Na, Wanhyun, Cho, Hyeon Seok Ko (Korea)

ANQ-022

Practice and Exploration of Haier Ecosystem Model in Welding Improvement Project
Li Hongjun, Zhang Zhi (China)

Parallel Session 22. New quality dimensions**ZOOM URL :** <https://us02web.zoom.us/j/4629082193?pwd=aEFjc3ZUekJXbkJGaThTdk8wVVo1QT09>**(ID: 462 908 2193)****Chair I** Kyung Mi Bae, Inha University, South Korea / gracebae@inha.ac.kr**ANQ-146****Development of the clinical process model to manage multimorbidity in acute hospital: resource-capability based discussion for management**

Ayami OZAKI, Tatsunori HARA, Satoko TSURU, Akihiro NAKAO, Seiichi YASUI, Yutaka MACHIDA, Tetsuro TAMAMOTO (Japan)

ANQ-147**Confidence Intervals of Linear Time Scales**

Watalu Yamamoto (Japan)

ANQ-079**Quality Trust Index in Process Management.**

Dr.S.P.Mandaogane (India)

ANQ-087**The New Quality Dimensions of the New Offerings in the Digital Transformation Era - Focusing on New Korean Business cases**

Min Seo Park, Kyung Mi Bae, Youn Sung Kim (Korea)

ANQ-021**Quality Control Improvements on GEA Water Heater Tanks Fabrication**

Chongju Liu, Libin Gao, Jixiang (China)

ANQ-086	Understanding Mobile Payment Service Continuous Use Intention Using the Expectation Confirmation Model and Concept of Inertia Joon Woo Yoo, Jong Ho Lee, Junsung Park, Heejun Park (Korea)
ANQ-010	Achieving Excellence in Hot Metal Quality at H Blast Furnace, Tata Steel, Jamshedpur, India Padmapal, Mantu Patra, Ujjal Ghosh, Sameeran Pani, Santanu Mallick, Shuchi Karn, Sumeet Dube (India)
ANQ-068	TQM journey under Deming Prize Framework-Blue Star Ltd Sudhir Umeshrao Laturkar, Mahesh AshOK Nikam (India)
ANQ-069	Can DevOps fused with Agile give a better and faster product delivery? Swetha SNH, Manoj L (India)
ANQ-073	#TechGen 4 NextGen: Leveraging Technology for Student Learning Rathin Khandhadia, Dr. Nupur Naithani, Mihir Gosalia (India)
ANQ-074	Ideation at Indus Towers Uday Mahajan, Gaurav Gupta (India)
ANQ-075	Automation of Daily Management at Indus Uday Mahajan, Achint Pathak (India)
ANQ-077	Holistic approach to build world class suppliers for auto OEM through MSES A (India) Burlu Jagannath, Moreshwar Joshi (India)
ANQ-080	Application of SPS techniques for reduction of Wireless Communication Interruption Nitin Tilak, Prasad Kulkarni, Deepak Vispute (India)
ANQ-082	LEAN Principles in AGILE Ceremonies Janani T, Rajesh Shripat Gopale, Rajashree Upadhyaya, Manoj L (India)
ANQ-083	Creating Ecosystem for Building "Quality Trust" Raghavendra Deolankar (India)
ANQ-011	Excellence in Utilizing Waste Energy at H Blast Furnace, Tata Steel Jamshedpur, India Padmapal, Mantu Patra, Ujjal Ghosh, Sameeran Pani, Santanu Mallick, Shuchi Karn, Sumeet Dube (India)
ANQ-012	Human Resource Management during Pandemic: A Tata Steel Approach Padmapal, Mantu Patra, Ujjal Ghosh, Sameeran Pani, Santanu Mallick, Shuchi Karn, Sumeet Dube (India)
ANQ-045	Injection of BOF slag-coal mixture in blast furnace through tuyeres for better process control Subhashis Kundu, Vineet Ranjan Tripathy, Shambhu Nath, Aarushee Agrawal, K Rama Krishna Rao (India)
ANQ-049	Intelligent Network Management Solution Suite for Planning and Execution of Inbound Logistic of Tata Steel Limited India Deblin Chakraborty, Dinesh Kumar, Uttam Mitra, Sushil Kumar Verma, Shyamtanu Dutta, Surjit Laha (India)
ANQ-052	Online Rebar Weight Tolerance Measurement by using Prediction Model at Merchant Mill Sandip Kumar Pal, Nilanjan Biswas, Rizwan Haider, Mani Shankar Laru, Rajesh Kumar, Sourav Banerjee (India)
ANQ-058	The need for an effective Instrumentation Maintenance in Integrated Steel Plant Ravi Kumar, H Amarnath Vyas, Arun Kumar (India)
ANQ-061	L1 to L4 Maintenance of Big Size Motors in Tata Steel Jamshedpur Plant Ravi Kumar, H Amarnath Vyas, Arun Kumar (India)

ANQ-063	Cobble reduction in Rotary Entry System using Image Analytics Pankaj, Achinta K. Dalal, Abhishek Raj, Satish Agarwal, Subhayan Samanta (India)
ANQ-065	Successful Rolling of TATA TISCON 500 SD grade in 8 mm section using HYQST quenching route Pankaj Kumar, Nilanjan biswas, Pinder Singh Mandley, Soma Ghosh, Manisankar Laru (India)
ANQ-084	Quantitative planning in the era of new normal for Services projects Nandu Pawar (India)
ANQ-031	Longing to Trust My Data: The Mess Created by Big Data Gregory H. Watson (USA)
ANQ-032	#TechGen 4 NextGen: Leveraging Technology for Student Learning Rathin Khandhadia, Dr. Nupur Naithani, Mihir Gosalia (India)
ANQ-033	Exploration of the Service Quality with the Applied Procedure via Quality Technique - A Case Study of Consumer Electronics Industry Ling-Lang Tang, Cheng-Sheng Hsu, Ko-Wei Chang (Taiwan)
ANQ-035	Restaurant Bill Effect, or When can we Lean on "Lean"? Zigmund Bluvband (Israel)
ANQ-089	The Effectiveness of ISO 9001 for Service Companies Performance in Nepal Janardan Ghimire (Nepal)
ANQ-090	Agility in the Quality and Quality in the Agility Ravi Bhattarai (Nepal)
ANQ-091	Quality improvement verses Cost reduction Naveen Prakash Adhikari (Nepal)
ANQ-092	Understanding of Quality on educational Organizations in Nepal after Pandemic Situation Binod Nepal (Nepal)
ANQ-093	Quality Assurance and Accreditation in Higher Education of Nepal: Practices and Issues Pradhan, Bijay Lal, Malla Pradhan, Rajeshwori (Nepal)
ANQ-036	Integrated QMS ISO 9001 and EOMS ISO 21001 to help educational institutions on their continuous improvement path - Best practices Ngo Van Nhon (Vietnam)
ANQ-040	Enhancing Social Responsibilities of Small and Medium Enterprises (SMEs) in Vietnam in the Digital Era Vo Phuoc Tan, Pham Xuan Thu, Vo Minh Khoi, Vo Minh Triet (Vietnam)
ANQ-085	Coping with the new quality challenges in the era of Industry 4.0 under the context of cooperation and trust Ming Li (China)
ANQ-006	Quality Prospects of Higher Education: To Establish Proper Practice of Rubric Scheme in Bangladesh Universities Nayeema Rahman, Dr. Md. Fokhray Hossain (Bangladesh)
ANQ-041	Saudi Aramco Quality Excellence Model in Projects & Operating Facilities Yousef Rayes (Korea)

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