Smart Silver Innovation

APEC Telecommunications and Information Working Group

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Asia-Pacific
Economic Cooperation

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Executive Summary

The Smart Silver Innovation project under TELWG held a two-day workshop titled "Smart Silver Innovation" in Icheon, Republic of Korea, on 28-29 July 2025, organized by Waseda University. The workshop constituted the third stage of a continuous multi-year project launched in 2019, focusing primarily on AI-driven and digital innovation in aging societies and on capacity building for a growing digital silver society.

This report consists of six chapters and five appendices. Chapter 1, "Introduction," describes the objectives and relevance of the project. Chapter 2, "Background," discusses the project's contribution to APEC and its historical context. Chapter 3, "Pre-workshop Research and Survey," summarizes the research and survey findings. Chapter 4 explains the workshop in terms of its objectives, targets, and summary. Chapter 5 presents case studies from 7 economies- China; Indonesia; Japan; Republic of Korea; Singapore and United States. Chapter 6 provides the conclusion and recommendations.

The final part contains five relevant Appendices. The project focused on the following five elements:

(1) Future-oriented

(2) Data-driven

(3) Use of emerging technologies such as AI, IoT, and 5G

(4) Results-oriented, based on the outcomes of the workshop and

(5) A comprehensive and interdisciplinary approach incorporating AI use.

A team was established in October 2024 to formulate the concept note in accordance with the submission requirements of the BMC of APEC. Since then, the Board members have met five times (twice in person and three times online). The Board members were as follows:

- Chair: Prof. Dr. Naoko Iwasaki, Director, Institute of Digital Government, Waseda University, Japan.
- Prof. Dr. Toshio Obi Nakamura, APEC Consultant.
- Prof. Dr. Theng Yin Leng, Executive Director, Aging Research Institute for Society and Education (ARISE), Nanyang Technological University, Singapore.
- Prof. Dr. Atun Rifat, Director of Global Health Systems, Harvard University, United States.
- Prof. Dr. Ir. Suhono Supangkat, Director, Bandung Institute of Technology, Indonesia.

- Prof. Dr. Francisco Magno, Director, SDG City Lab, De La Salle University, the Philippines.
- Prof. Dr. Jirapon S., Vice Rector, Thammasat University, Thailand.
- Prof. Dr. Kim, Director, Institute of Aging, Korea University, Republic of Korea.
- Prof. Dr. Yang, Dean, Institute of Digital Government, Peking University, China.

The Board members concluded the following outcomes:

- The consultant conducted surveys and provided analytical input on smart silver innovation through questionnaires, interviews, and a literature review.
- The consultant played important roles in identifying targeted experiences and best practices through high-quality presentations on best practices.
- The research reports were edited by the consultant in consultation with the Project Overseer (PO) and academic partners among the participants.
- The workshop was conducted through expert presentations, case studies, findings, and recommendations delivered via speeches, panel discussions, and interactive sessions.
- Regarding gender issues, the consultant actively promoted gender inclusion, with one-third of participants and speakers were women.

The post-workshop survey indicated excellent evaluations in terms of increased knowledge, networks, and skills among participants.

The measures and indicators confirmed that the PO measured outputs including the numbers of (1) participants; (2) speakers; (3) economies engaged in the workshop; (4) feedback and recommendations received in response to surveys and questionnaires; and (5) data gathered through the workshop consultation process. The final figures will be listed in the Project Completion Report to be submitted within two months after project completion.

Participants benefited from evidence-based and data-driven insights derived from the post-workshop questionnaire survey, especially the quantitative analysis of well-being and quality of life, and gained a better understanding of implementation models, technological requirements, and cost-benefit considerations.

Participants could apply the knowledge acquired through the workshop to their own economies, including by providing consultations and conducting research.

Chapter 1:Introduction

This project aims to identify appropriate digital solutions to respond to the needs and requirements of aging societies by fostering Smart Silver Innovation in the Asia-Pacific region.

The objectives of the project were summarized as follows:

1. To develop a smart silver society model through digital innovation and to implement test beds for questionnaires and field surveys in relevant fields.
2. To discuss policy agendas for DX solutions in aging societies through a workshop.
3. To identify effective solutions to policy agendas with multiple objectives.

The project team planned a strong connection between the objectives and the outcomes in alignment with relevant APEC priorities. The project seeks to develop a smart silver society model through digital innovation. Working with APEC economies, it implemented test beds for questionnaires and field surveys in relevant areas such as healthcare, smart cities, digital government, mobility, agriculture, and technology transfer to other economies.

The workshop identified effective solutions to policy agendas with multiple objectives. It discussed both support for establishing a comprehensive smart silver industry for economic growth and capacity building to guide silver innovation.

The project contributes to a new economic framework by (1) reducing inequalities among aging people through digital inclusion; (2) promoting strong governance, transparency, and efficiency in increasing senior employment and (3) enhancing environmental sustainability and silver education.

In the public sector, the rapid increase in population aging and the associated budgets for older persons in healthcare, pensions, digital public infrastructure, employment, and mobility might become crucial factors contributing to financial constraints. The workshop discussed policy agendas for addressing these issues.

The project draws upon cooperation among government, academia, and the private sector and addresses the challenge of supporting a healthy aging society empowered by digital technology. It focuses on the effective use of emerging technologies in digital and aging societies. These technologies offer substantial potential benefits for aging societies across APEC economies. The workshop provided an excellent opportunity for human resource development (HRD) and capacity building among these sectors. These technologies, applications, and forms of international collaboration can have a

significant impact on aging societies in the APEC region, and valuable lessons are expected to emerge from this project.

The proportion of the total population in the APEC region aged 60 years or older is projected to reach 10% by 2030[1].

Regarding the importance of silver innovation and the silver economy, Aging Asia projected that the silver economy market value in Asia and the Pacific would reach USD 4.56 trillion by 2025, representing an increase of 43% from 2015[2]

Therefore, the rapid increase in government expenditure on health, pensions, and well-being for senior citizens is a growing global societal issue. This project seeks to address these challenges through capacity building organized by leading universities in the region and through pragmatic research activities. The target achievements were examined in terms of (1) upgraded knowledge, (2) changes in action by the target audience, and (3) progress in improvement.

[1] UN Population Fund forecast

[2] NPO Aging Asia forecast for 2025

Chapter 2: Background

Since 2019, the APECTEL project "Smart Silver Innovation (Phase 1)" had produced fruitful results and significant findings. "Smart Silver Innovation (Phase 2)," launched in 2023, built on the earlier project by moving from theory to practice under the Digital Transformation framework. Based on the recommendations from Phases 1 and 2, this Phase 3 project was expanded to consider the inclusiveness of all generations in support of healthy societies. We believe that Phase 3 significantly benefits TEL members, especially developing economies, and contributes to advancement through the sharing of knowledge and experiences related to the safe and secure use of emerging technologies and applications such as AI, 5G, big data, and blockchain.

The project team planned a strong connection between the objectives and the outcomes in alignment with relevant APEC priorities and the Putrajaya Vision 2040 economic driver of "Innovation and Digitalization," particularly with respect to the scope and targets of the workshop.

The project contributed to the AIDER Roadmap Key Focus Area on "Enhancing the Inclusiveness of the Internet and Digital Economy." The project became necessary because of the growing attention paid by academic institutions to rapid population aging, rapidly developing disruptive technologies, and the convergence of digital and aging societies. The growth in the number of older people in the APEC region has strong potential to generate economic benefits and opportunities for social integration; digital strategies can lower healthcare costs and improve quality of life for aging populations. The project also contributed to the APEC Putrajaya Vision 2040 economic drivers of "Innovation and Digitalization" and "Strong, Balanced, Secure, Sustainable and Inclusive Growth" through capacity-building programs among participating universities. Both the TEL Strategic Action Plan and this project encourage public-private partnerships and the participation of multiple and diverse stakeholders.

ICT markets in the respective economies have grown rapidly, and specific sectors such as digital industries, robotics, health, and social care have benefited. The project promotes realistic methods of collaboration. Therefore, it supports sustainable economic growth and prosperity in the region, corresponding to the primary goal of APEC.

APEC was the best platform for this project for three reasons:

- Aging populations and their social impacts are common concerns across the APEC region, including rapidly aging economies such as China; Japan; Republic of Korea; Singapore and Chinese Taipei.

- Seven sponsoring and co-sponsoring economies participated, providing a balance between developed and developing economies in project implementation.
- There is tremendous demand among member economies for capacity building and workforce training in aging technology and digital transformation.

Chapter 3:Research and Survey

1. Pre-workshop Research and Survey

1. Outlines

This project was needed based on expansion of academic institutions which pay attention to skyrocketing population aging, rapidly developing destructive technologies and convergence of both digital and aging societies. The growth in the number of older people in the APEC region had great potential to generate economic benefits and opportunities for social integration; digital strategies can lower healthcare costs and improve the quality of life for the aging. The project encouraged Public Private Partnership and multiple and diversified stakeholders' participation. The silver innovation marketed in the respective economies grow more rapidly and specific sectors such as digital industries, robotics, health and social care enjoyed benefits. Therefore, it covered support of sustainable economic growth and prosperity in the region, corresponding to the primary goal of APEC.

Project PO has organized both 4 online meetings and 1 hybrid meeting with in-person / online to make exchange of opinions and discussions as well as proposals on important issues including Metrics in the Phase 3. Target participants of the project are: APEC economies' organizations involved in designing and conducting smart silver innovation programs and policies.

This survey is conducted and analyzed based upon [Impact Management Project] (IMP) model used by OECD and UNDP. In relation with IMP SROI (Social Return on Investment) model are used for output as well as outcome.

Our Methods of conducting survey were 1) questionnaires; 2) interviews; 3) workshop presentations; 4) workshop discussion and 5) references of books and reports.

The Survey findings at the pre-Workshop were as follows:

-Take notes to be used for the E-book, including summaries of the presentations and discussions, outcomes, best practices, recommendations and key findings.

-Run a 30-minute session at the Workshop, to present the Survey findings and facilitate discussion on next steps and recommendations.

-Prepare and Disseminate data for the Post-Event Survey

2. Evaluation

Participants were required to complete and return Survey Questionnaires in advance by the start of workshop and after the event Evaluation Form were distributed and returned by 20 August after the end of the workshop. In this form, each participant was encouraged to share their views and advice on the Workshop's impact and efficiency as well as possible suggestions and policy implications for future APEC related cooperation programs and activities. The evaluation by core participants were analyzed and put the outcome in E-Book (final research book) in March 2026.

The [Impact Management Project (IMP)] is an international initiative on social impact management in which the United Nations (UNDP) and OECD participate. The IMP defines "impact management" as "the continuous practice of measuring, assessing, and improving the impact on sustainability issues" and requires evaluation across all processes, which consist of four stages: planning, implementation, understanding of effectiveness, and reporting and utilization. It organized the intentions of the impact at three levels, A, B, and C, and evaluated the impact from the five basic elements Specifically, the three levels are:

"A: Avoid harm"

"B: Benefit people and planet"

"C: Contribute to solutions".

The four elements were:

"What" (positive or negative),

"How much" (scale, depth, duration),

"Who" Contribution

In evaluation, "the why and what are important, not the how," and the first step was to clarify the impact management strategy

<advantages, challenges, and points that needed to be improved>

Advantages: It was positioned as an internationally recognized framework that brought together knowledge based on the practice of impact management

3. Methodology

As for the metrics, the 1st step was Research and Analysis by 10 July and as the 2nd step was Design Survey Distribution by 15 July, at the 3rd step, analysis and survey responses by 20 July. At the 4th step, the draft on the subject was prepared. Final step was to present it for 30 minutes at the workshop 1st session on survey findings as called

Orientation 1 in July 28. Also, it was important to consider outcome of the project Phase 1 and Phase 2 of APEC Smart Silver Innovation. These 14 sector Metrics in the list were very relevant variety of subjects for digital technology on silver innovation.

On this regard, as background of Prof. Obi-Nakamura, a consultant for this project had selected 14 sector Metrics based on the UN and OECD for their methodologies on Metrics both of which Prof. Nakamura had worked as chairs of the workshops on Silver Economy in both UN and OECD already in the past.

Consultant Prof. Obi-Nakamura has outstanding careers in this field. For example, He had been Co-chair of OECD project on silver innovation, PO of APEC project on ICT applications for the people with special needs in Aging and disability, Co-chair of Japan-China-Republic of Korea joint conference on Smart Silver Innovation organized by 3 governments, Co-chair of EU-Japan aging technology, and Chair of Silver industries in global context by Japanese Government. Based on his leadership network and experiences, the program with agenda, selections of both speakers and participants were well prepared.

4. Sample of Questionnaires sent to participants

The purpose of this survey with mandatory requirement for APEC-Funded project was to make usage of metrics with various questions to maximize the successful capacity building activity for Smart Silver Innovation Phase 3.

All topics below (1~14) were presented by the expert at various sessions of our workshop in July 28-29. Since we prepared the outcome as well as output report after the workshop, we asked core participants kindly to answer the following questions.

The instruction was that [Please fill "Y" in ( ) Parentheses at each metric if you think it is interesting and important subject as your priority. If not, no need to mark it. It seems simple work, but it is very helpful for data analysis by IMP methodology for capacity building on upgrade of knowledge, understanding and capability by the workshop.]

1. ( ) Emerging Digital Technology
2. ( ) Gender Equality
3. ( ) Sustainable Smart City friendly for all citizens
4. ( ) Disaster risk for the aging
5. ( ) Achieving and promoting SDG' various targets
6. ( ) Good Healthy long life and well-being
7. ( ) Innovation for Industry and Infrastructure

8. ( ) Digital government and Municipality
9. ( ) Robot technology such as medical health care for the aging
10. ( ) Mobility for easy transportation for the aging
11. ( ) Digital literacy and education for the aging
12. ( ) AI Innovation as excellent solution for silver society
13. ( ) Serious Super-Aging Society
14. ( ) Innovation to solve labor shortage

Next questions were the three Outcomes of the Workshop which you would find in the below:

[Please put any numbers (1~14) whichever you expect these are suitable for following A, B . C ( ) in Parentheses]

A. Upgrading knowledge and understanding ( )
B. Change of Action, ( )
C. Progress of Capability Level ( )

5. The result and findings on the pre-workshop Survey

Based on the selection by participants attending the workshop by mail questionnaire prepared as the table 1. Their responding answered are shown at the table 2 of sector priority and interesting sessions (which topics are important?).

4 grouping for 14 metrics were made. And one was the highest 4 sector priorities such as [Emerging Digital Technology], [Good Healthy Long life and Well-being], [Digital Literacy education for the aging], [AI Innovation as excellent solution for Silver Society].

2nd highest group with 3 subjects was [Sustainable Smart city friendly for all citizens], [Achieving SDG' various targets], [Disaster risk for the aging].

3rd group was [Digital Government and Municipality], [Innovation to solve labor shortage].

4th group was [Robot technology for the Aging], [Serious Super-aging Society], [Innovation for Industry and Infrastructure].

Last group with 2 subjects was [Gender equality], [E-Mobility for easy transportation].

Then, asked [Expected outcome of the Workshop in the focus of 3 levels] The one was 1." Up grading knowledge and understanding", and 2nd was "Change of Action" and 3rd was "Progress of Capacity level".

The result of answers was described at Table 3. And for 1st was that 16 votes for 4 subjects-[Innovation for Industry and Infrastructure],[Good Healthy Long life and Well-being],[Disaster risk for the Aging],[Emerging Digital Technology] .

As for the answers for 2nd, the most popular subject was focused to [Digital Literacy and Education for the Aging. The Answers for the 3rd [Progress of Capacity level] is also concentrated on the 2 issues [Innovation to solve labor shortage] as well as [AI Innovation as excellent solution for silver society].

6. Findings on pre-workshop survey

Based on the above questionnaires the findings were summarized as follows: Namely, participants were expecting the outcomes of workshop as follows:

1. Both Digital Literacy and Education for the Aging and Innovation for Industry and Infrastructure were the highest priorities among 14 subjects.
2. Sector priority, importance and interests were 4 subjects mentioned. The most attractive new trend were usages of [AI Innovation as solution for the Aging].
3. participants have common low expected outcomes which was [Serious Supe- Aging society] with 12 points for the Workshop. It is assumed that people in majority of APEC economies are not concerned with the stage at this moment.
4. Comprehensive approach is needed in this horizontal issues.
5. By these data, their interests are focused on the analysis of various covering issues rather than concentrated trend.
6. AI was key solution means for the aging issues in the near future
7. Case studies by 6 economies at the workshop were very attractive to understand the situations in APEC
8. Especially, East Asia region such as China; Japan; Republic of Korea and Chinese Taipei, facing the common serious issues for aging population.
9. AI and other emerging technologies have developed rapidly in private sectors rather than public sector.

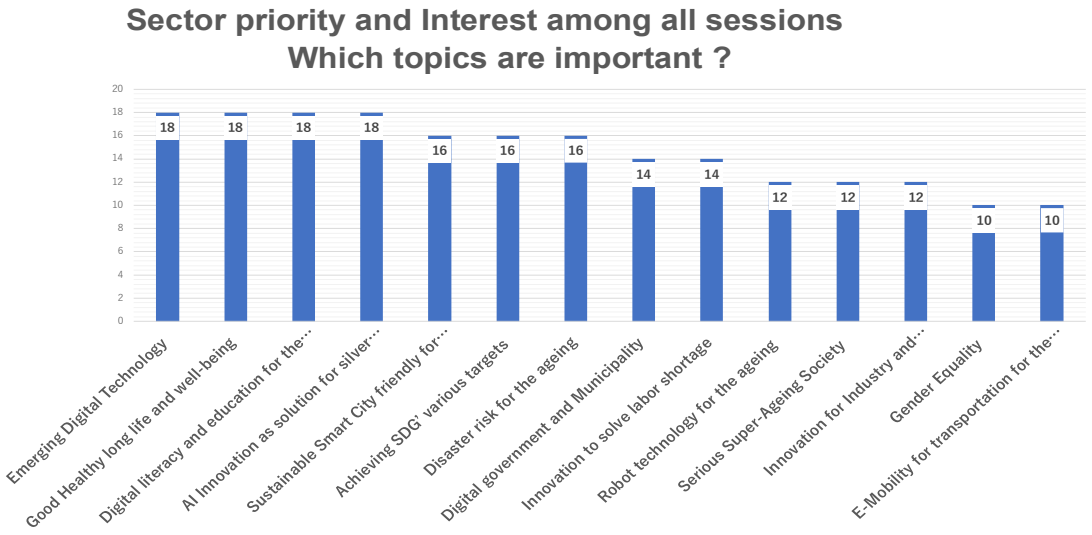


Table 1 Sector Priority and Interest all sessions

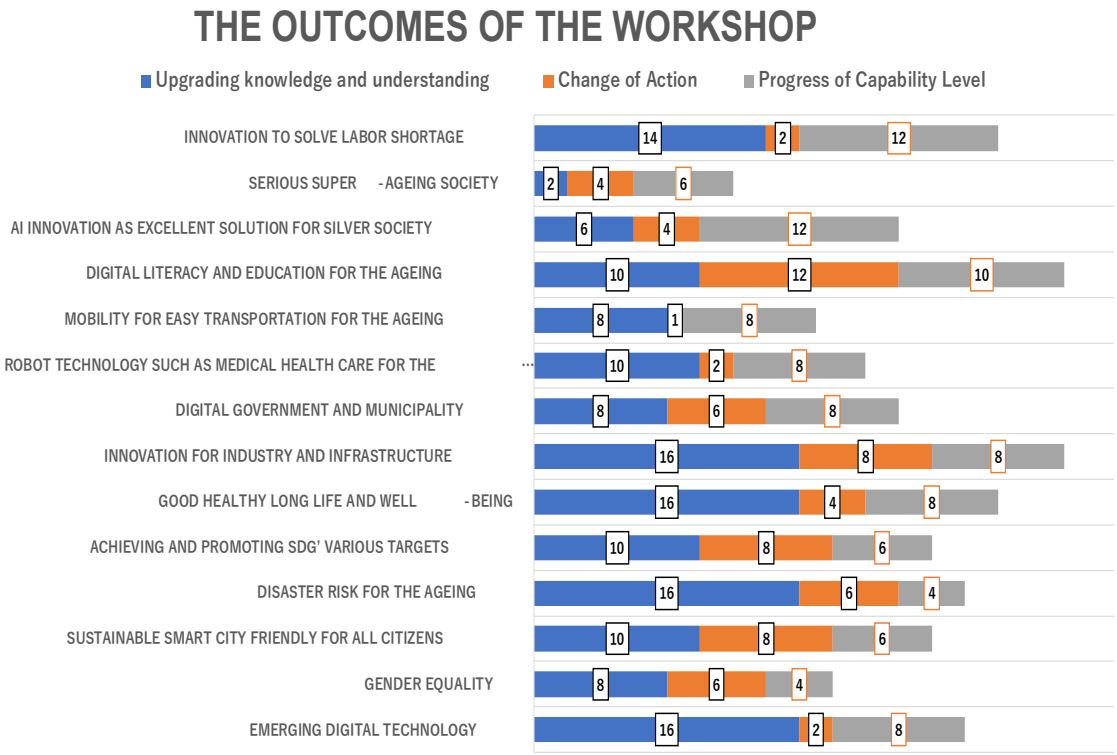


Table 2 The outcomes of the workshop

7. Post-Workshop Research and Survey

The workshop was a resounding success in terms of content delivery and expert quality

（1）Training Quality & Satisfaction

Indicator	Strongly Agree	Agree	Total Positive
Objectives clearly defined	85%	15%	100%
Objectives achieved	90%	10%	100%
Topics relevant	90%	10%	100%
Content well organized	95%	5%	100%
Gender addressed	80%	20%	100%
Experts knowledgeable	100%	0%	100%
Materials useful	80%	20%	100%
Time sufficient	75%	25%	100%

Table 3 Training Quality & Satisfaction

The training quality is exceptionally high, with only minor concerns regarding time management.

Key Insights

- Zero negative responses across all indicators
- Highest strength: Experts (100%)
- Second strength: Content organization (95%)
- Lowest score: Time allocation (75%)

（2）Relevance of the Project

Level	Count	%
Very	5	25%
Mostly	8	40%
Somewhat	4	20%
A little	1	5%
Not much	2	10%

Table 4 Relevance of the new project

The training is broadly relevant, but participant needs are not fully homogeneous.

Insight

- High relevance (Very + Mostly): 65%
- Low relevance: 15%

（3）Learning Impact (Before vs After)

Before Training

Level	%
High (Very + Mostly)	45%
Medium (Somewhat)	35%
Low (A little)	10%

Table 5 Before learning contents

After Training

Level	%
High (Very + Mostly)	70%
Medium (Somewhat)	30%
Low	0%

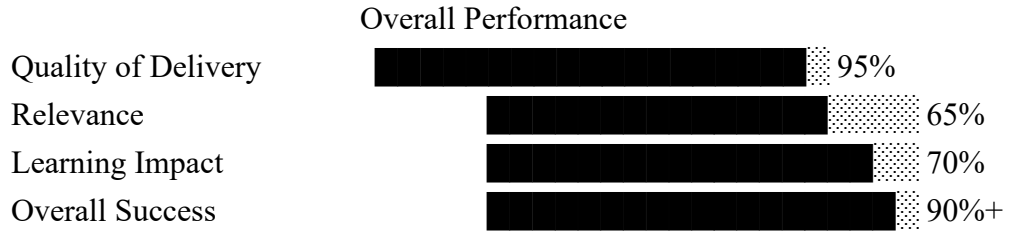
Table 6 After training

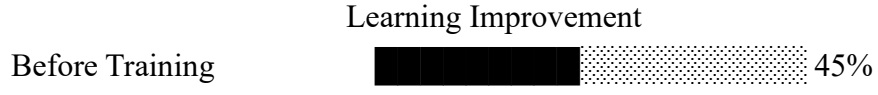
The training produced a clear and measurable improvement in participant capacity.

Key Changes

- High-level knowledge increased by +25%
- Low-level knowledge reduced to 0%

Other Graph





After Training		70%
Improvement	+25% ▲	

Table 7 The related performance

Key Messages

- Training was highly successful
- Strong capacity-building impact
- Experts were the key success factor
- Time management is the main improvement area

The details of survey analysis are written in APPENDIX 4

8. Summary

This summarizes the outcomes of the capacity-building workshop conducted under the APEC framework. The workshop demonstrated a high level of effectiveness in enhancing participants' knowledge and competencies, supported by exceptional training quality and expert facilitation. Survey results indicated uniformly positive satisfaction across all indicators, with no negative responses recorded. The workshop also produced a measurable improvement in learning outcomes, reflected in a 25% increase in high-level knowledge after the training. Despite the overall success, two areas require further attention: (1) the heterogeneity of participant backgrounds, which resulted in varying levels of perceived relevance, and (2) time allocation, which received comparatively lower satisfaction scores. Addressing these issues will further strengthen the inclusiveness and impact of future APEC capacity-building initiatives. As for the quality and satisfaction of this workshop was that the workshop achieved exceptionally high satisfaction, with 100% positive responses across all indicators. Key strengths included expert knowledge (100%), content organization (95%), and clarity of objectives (90–100%). Gender considerations were integrated effectively (80%). Time sufficiency received the lowest score (75%), suggesting that the depth of content exceeded the available duration.

Chapter 4: Workshop

1. Workshop Objectives

The workshop was a two-day event led by the PO and an expert consultant, delivering a tailored program to strengthen capacity building in "Smart Silver Innovation". The workshop included several sessions with varied formats, such as expert presentations, case study discussions, and interactive sessions, to maximize learning and retention.

The major topics were divided into the following sectors: (1) capacity building, (2) AI and DX (Digital Transformation), (3) healthcare, (4) senior employment, (5) smart cities, (6) digital government, (7) e-mobility, (8) disaster risk, (9) entertainment/leisure, and (10) 5G. The workshop also included a discussion session on increasing female participation in decision-making and promoting a well-being-oriented environment, together with best practices in this field.

The following five points constituted reasonable objectives for the Phase 3 Smart Silver Innovation workshop:

- The rapid increase in government expenditure on health, pensions, and well-being for senior citizens is a growing global societal concern. This project sought to address these issues through a capacity-building scheme organized by partner universities in the region and through pragmatic research activities.
- Based on recommendations from Phases 1 and 2, the project aimed to expand inclusiveness across all generations in support of healthy aging societies. We believe that Phase 3 significantly benefited TEL members, especially in developing economies, by sharing knowledge and experiences on the safe and secure use of emerging technologies and applications such as AI, 5G, big data, and blockchain.
- The workshop contributed to a new economic framework by (1) reducing inequalities among aging people through digital inclusion, (2) promoting strong governance, transparency, and efficiency in senior employment, and (3) enhancing environmental sustainability and education for aging populations.
- The workshop program provided excellent opportunities for human resource development and capacity building among the sectors involved.
- These technologies and applications, together with international collaboration, had a substantial impact on aging societies in APEC economies, and valuable lessons were generated through the project.

2. Workshop Targets

The workshop activities were comprehensive and covered a variety of sectoral topics as part of the TELWG Smart Silver Innovation Phase 3 project led by Project Overseer Prof. Dr. Naoko Iwasaki of Waseda University and Consultant Dr. Obi Nakamura.

The selection criteria for participants and beneficiary profiles, including participants, end users, policymakers, researchers, analysts, and gender representation, were carefully considered in the engagement process. Beneficiaries included end users, civil society, aging populations, business, government, and academia involved in Digital Silver Innovation. The project benefited economies across the region. It welcomed diverse participants, and the selection criteria were determined by the executive board of nine partner universities. Participants learned a wide variety of subjects presented by world-class experts.

In terms of gender, both the PO and the Deputy PO were women. The project welcomed participant diversity, and the selection criteria were established by the executive board, which had already met three times that year. The ratio of women participants was one-third, and the ratio of female speakers was 40%. The workshop was expected to deliver an effective capacity-building outcome.

The project aligned with the goals of the TELWG Strategic Action Plan. In addition, it was consistent with the priority area of "ICT policies and regulations to enable innovation, economic integration, and inclusiveness." The pre-workshop research surveys contributed directly to the workshop objectives and helped shape strategic and policy agendas, since the pre-workshop survey formed part of the research process and the post-workshop survey formed part of the workshop outputs. The surveys focused on the following topics: (1) healthcare, (2) smart cities, (3) well-being, and (4) quality of life for older adults. During the surveys, the team identified targeted experiences and best practices in the APEC region in preparation for future issues. The research was conducted through online surveys and interviews with experts in this field.

3. Workshop Summary

The Smart Silver Innovation project under TELWG held a two-day workshop on Smart Silver Innovation in Icheon, Republic of Korea, on 28-29 July 2025. The workshop focused on AI and digital innovation for aging societies and on capacity building.

On the first day (28 July), following the orientation in which Prof. Dr. Obi Nakamura, APEC Consultant, explained the two-day agenda and program, opening

remarks were delivered by Mr. Irie, Head of Delegation of Japan, the Deputy Director-General of the Ministry of Internal Affairs and Communications (MIC) of the Japanese Government, and Prof. Dr. Iwasaki, the Project Overseer from the sponsoring institution, Waseda University.

The workshop began with two keynote speeches. The first was delivered by Prof. Dr. Atun, Director of the Health System Innovation Lab, School of Public Health, Harvard University (United States), who spoke on the digital and AI-enabled transformation of health systems, particularly in the United States. The second keynote speech was delivered by Prof. Dr. Theng, Executive Director of the Aging Research Institute for Society and Education (ARISE) at Nanyang Technological University, Singapore. She emphasized the importance of gerontechnology in action and the shaping of the future of aging through science and innovation.

After the two keynote speeches, the first interactive session was held. The session was chaired by Vice Rector Prof. Jirapon of Thammasat University, Thailand. Four case studies were introduced by Prof. Ching of De La Salle University in the Philippines, Assistant Director Ms. Falina of ARISE at Nanyang Technological University in Singapore, and Prof. Suhono of the Bandung Institute of Technology in Indonesia, after which participants discussed four recent academic case studies emphasizing silver innovation.

In the afternoon, two speeches were delivered. Prof. Dr. Iwasaki of Waseda University, Japan, spoke on Smart Silver Innovation in Japan, and Prof. Dr. Y.R. Park of Kangham University, Republic of Korea, delivered a presentation titled "Republic of Korea's Age-Tech Revolution: Pioneering Sustainable Solutions for an Aging Society."

The second interactive session was chaired by Prof. Dr. T. Kim, former Director of the Institute of Aging, Korea University. He introduced three experts presenting case studies. The first presenter was Ms. Spring, Assistant Director, Government Department of ITRDCSA, Australia, who also served as Co-Chair of TELWG and spoke about Australian government initiatives on aging issues. The second presenter was Mr. Kato, Deputy Director of CLARE Japan, who introduced the relationship between aging and disasters in Japan. Prof. Hsin Chung of TEG, Chinese Taipei, then explained recent silver innovation programs in government policy.

On the second day (29 July), Prof. Dr. Obi Nakamura, APEC Consultant (Japan), opened the orientation by summarizing the discussions of the first day. In addition, he delivered a presentation on his research topic concerning change in the New Silver World. The third interactive session featured three experts presenting case studies. The moderator was Prof. Theng, Executive Director of ARISE, Nanyang Technological University,

Singapore. For the case study on China, Prof. Du Peng, Dean of Renmin University of China, delivered a presentation. For Viet Nam, Prof. Hung of PTIT, Hanoi, spoke about new government policies for a future aging society. For Indonesia, Prof. Allya of the Bandung Institute of Technology emphasized the need for global standards in this field. This session explored the idea that population aging is not a burden but an asset supporting economic development, especially in developed economies. After the third session, Prof. MD, K.W. Park of Korea University Medical School and Director of the Institute of Aging delivered an important presentation titled "Republic of Korea's Next Chapter in Dementia Care: Integrating Digital Health and Big Data," which participants highly appreciated.

The final interactive session discussed three sectors Aging, AI, and the SDGs. The moderator was Prof. Dr. Atun of Harvard University, United States. Prof. Magno of De La Salle University in the Philippines briefed participants on aging issues in the context of the SDGs. Prof. Poomporn, Director of the AI Center at Thammasat University, Thailand, discussed AI applications for supporting aging healthcare and well-being. Prof. Lu Jiehua, Director of the Institute for NSS on Aging at Peking University, China, addressed the silver economy in China. Prof. Alexander, Chair of RANEPA, Russia, discussed healthcare treatment for older persons. Participants raised a number of questions, including those related to AI technology for population aging in the context of capacity building. In response to the shortage of nurses in the region, a proposal was made for intensive training of nurses in the use of digital devices, and the need for regional cooperation among universities in APEC was also emphasized during the Q&A and discussion session.

The final event was the roundtable discussion on policy recommendations. The session was conducted by Co-Chairs Prof. Obi Nakamura (Japan), Vice Rector Jirapon (Thailand), and Prof. Suhono (Indonesia). The recommendations are listed in the final chapter of this report.

In the closing remarks, PO Iwasaki concluded that the workshop had been highly fruitful and productive, generating many valuable outcomes and lessons learned through the contributions of speakers and participants.

Chapter 5:Case Studies

The following 6 case studies were prepared on, China; Indonesia; Japan, Republic of Korea; Singapore; and the United States based upon the results of the workshop with presentations and discussion as well as literature reviews.

1. Japan

According to the estimates on 2050 by the Dai-ichi Life Research Institute, Japan could see 4 million "long-term care asylum seekers"—individuals unable to access necessary care. The number of people requiring care or support ("needs care" or "needs assistance") is projected to rise by 40% compared to 2020, reaching 9.41 million in 2050. While 3.02 million caregivers were needed, the current employment structure is expected to secure only 1.8 million, leaving a shortage of 1.22 million caregivers in Japan.

In August 2024, the Japanese government revised its Priority Areas for the Use of Robotic Technology in Caregiving and renamed it Priority Areas for the Use of Caregiving Technology. The updated priority areas are set to be implemented starting in April 2025. Under the revised framework, three new areas have been added, bringing the total to nine areas with 16 specific categories. The six existing areas include: Transfer Support, Mobility Support, Bathing Support, Toileting Support, Monitoring, Caregiving Work Support. The three newly added areas are Functional Training Support, Meal and Nutrition Management Support, Dementia Lifestyle Support and Dementia Care Support. Additionally, the definitions of existing areas and categories have been reviewed to ensure their relevance and alignment with current needs.

The current adoption rate of caregiving technology remains generally low (table 6). In particular, the utilization rate of toileting support technology is less than 1%. These technologies face challenges not only in home caregiving settings, where their use can be difficult, but also in caregiving facilities, where their implementation has been limited. The Ministry of Health, Labor and Welfare has requested both industry and operators to promote these technologies to catch up the expanding need of caregiving with AI Technology, applications and systems.

Transfer Support (Wearable/Non-Wearable)	9.7
Mobility Support (Outdoor, Indoor, Wearable)	1.2
Bathing Support	11.2

Toileting Support (Waste Management, Movement Assistance, Prediction/Detection)	0.5
Monitoring (Facilities, Home) and Communication	30.0
Caregiving Work Support	10.2

Table 8 Adoption Rates of Care Technology (%)

You find how Japan is facing with serious issues on elderly population ratio among APEC economies. Japan is NO.1 economy as 30% ratio, followed by HKC 24% and Canada 20%. The following is the data on speed of aging ratio from 7% to14% which shows transformation from Aging Society to Aged Society among APEC economies. Japan started in 1970 and became the Aged Society for 24 years in 1994 as the first economy to be achieved. And now the ratio is 30% (over 21% to be called the Super-Aged Society). [4] APEC economies learnt the lessons from Japan as new trends in Silver Society in Japan

In this regard, this workshop was the best practice to understand it. Specific issues were:(1) Income polarization - super rich vs. pensioners—the former owns half of the financial assets of 10% under the population. (2) widening regional disparities between cities and rural areas:—concentration in Tokyo vs. rural depopulation (3) disparity among the elderly in disaster:-Prone areas such as major earthquakes and areas with a low risk of disasters (4) elderly people were less likely to engage in mass consumption behaviors that follow trends among young people, and individual preferences are reflected (5) expansion of consumer markets for seniors, progressive Silver Tech and Age Tech.(6) Population aging has raised concerns about the sustainability of public pension system,(7) Japan has become super-aged society ahead of other economies and they are experiencing " aged society" to catch up Japan.

2. China

China with more than 300 million citizens aged 60 and above, was witnessing one of the fastest-growing silver economies in the world. A defining feature of this shift is the rise of the "new elderly"—a cohort that is wealthier, more urbanized, and increasingly connected to digital technologies. Yet, the magnitude of the demographic challenge exerts heavy pressure on healthcare and social welfare systems, while a deep digital divide remains, particularly in rural regions, were access to technology and digital literacy lag behind. In response, the government has advanced the development of smart communities and digital healthcare services. A core component of this approach involves

adapting mainstream digital platforms to meet the needs of older users.

E-commerce and ride-hailing companies, for instance, are rolling out elder-friendly interfaces with larger fonts, simplified layouts, and voice-command functions to lower barriers to entry. These initiatives are designed not only to bridge the generational digital gap, but also to actively integrate seniors into the digital economy[3]

China's strategy further extends to the healthcare domain, where wearable technologies and AI-driven telemedicine services are being deployed to improve elder care. These tools play a critical role in monitoring chronic illnesses and supporting remote consultations, thus enhancing both accessibility and quality of medical services. Together, these measures reflect a concerted their effort to transform the challenges of population aging into opportunities for innovation, while simultaneously addressing systemic gaps in healthcare and digital inclusion.

To address the economic and social burdens of a rapidly aging population, China was also reforming its pension and retirement systems. The government has begun a gradual and progressive increase in the statutory retirement age, a key move to bolster the workforce and ensure the long-term sustainability of its social security funds. To support this, policies were being implemented to provide older workers with reskilling and vocational training opportunities, enabling them to remain competitive in a modern labor market[4]. Additionally, China was promoting a more robust "silver economy" by providing tax incentives and financial support for companies that cater to the needs of the elderly, from specialized financial products to wellness and leisure services, recognizing that seniors are a powerful and growing consumer base.

3. Republic of Korea

Republic of Korea was facing a demographic transition that's happening faster than anywhere else. By late 2024, the economy officially entered the category of a "super-aged" society, reaching this milestone in just seven years, this accelerated aging, combined with the world's lowest fertility rate, poses profound risks to economic stability and puts intense strain on healthcare and pension systems. A key challenge lies in ensuring older adults, who often have limited digital literacy, can access and benefit from new digital health services.

To confront these challenges, the government was leveraging its unique

[3] Li, Y., Wang, Y., Zhang, T., et al., 2025

[4] The State Council of the People's Republic of China, 2025

strength: high technological penetration. Republic of Korea was a leader in developing AI-powered care robots to address severe labor shortages in the eldercare sector. For example, robots like Hyodol are being distributed to seniors living alone. These AI dolls act as companions, providing conversation and emotional support. They also had practical functions, such as reminding users to take medication and alerting caregivers in an emergency with built-in sensors. Major tech companies were also entering the market, with products designed to be central AI hubs in the home, managing smart devices and offering home care services. Furthermore, companies like Robo Care have developed humanoid robots that provide cognitive training and emotional support for individuals with dementia, helping to improve memory and concentration[5]

Republic of Korea was actively leveraging digitalization as a means of building an efficient and accessible silver economy. A flagship program was the AI-IoT-based healthcare project for senior citizens, an economy-wide initiative that uses AI-enabled speakers and smartphone applications to deliver personalized health advice, monitor vital signs, and issue medication reminders. This system, which gained traction during the pandemic, has since been institutionalized as a long-term model for providing "contactless healthcare" to seniors with limited mobility or those living alone[6]

The government's strategy was reinforced by the economy's high smartphone adoption rate, which exceeds 80 percent among people in their 60s. This creates fertile ground for wearable technologies that integrate seamlessly with healthcare services. Such devices track key health indicators and transmit data to medical providers, enabling proactive interventions and reducing the need for in-person visits[7]

Beyond easing the burden on traditional healthcare institutions, this approach empowers older adults to manage their health more independently. Supported by Republic of Korea's advanced MedTech sector, which is designing elder-friendly devices tailored to these needs, the economy illustrated how digital transformation could be mobilized to mitigate the risks of demographic decline and reshape the future of elder care.

4. Indonesia

Indonesia, though still characterized by a relatively young population, was beginning to anticipate the demographic transitions. At present, the notion of a "silver

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[5] Robo Care, 2025

[6] Kwon, S., Kim, Y., & Lee, S., 2024

[7] Qualtechs, 2025

economy" remains nascent, and in many contexts the term continues to be associated more with precious metal markets than with aging-related services. However, policymakers recognize that as the population gradually matures, the absence of adequate economic and social infrastructure could create significant strain on the healthcare system and social protection mechanisms in the decades to come

Indonesia was also implementing comprehensive reforms to strengthen its social security and economic policies. The government was progressively providing initiatives to promote the employability of older citizens through skill development programs and support for entrepreneurship. Furthermore, to provide essential social services, Indonesia was developing community-based healthcare and care infrastructure that align with the cultural norm of family-centric care, aiming to provide a safety net for its future elderly population while avoiding the high costs of institutionalized care. The government's response has been notably forward-looking, aiming to build resilience before the pressures of demographic aging fully emerge. Central to this strategy was the use of digitalization as a preparatory tool.

A particularly promising area lies in telehealth and digital health services, where Indonesia's large and digitally adept younger population plays a pivotal role. This demographic segment not only demonstrates strong adoption of digital technologies but also drives innovation in health-related platforms, laying the groundwork for systems that can later serve older adults on a scale. Although Indonesia has not yet entered the advanced stages of population aging seen in East Asian or European economies, its emphasis on digital readiness signals a proactive approach. By fostering early investment in telemedicine, digital platforms, and health-related infrastructure, the economy positions itself to mitigate future demographic challenges while simultaneously creating opportunities for sustainable growth in health technology. This dual focus—on preparing for aging and leveraging youthful digital capacity—illustrates Indonesia's long-term vision in shaping an inclusive and adaptive silver economy.

5. Singapore

Singapore was among the fastest-aging economy in the world, and its response to this demographic shift has been highly proactive and government-driven. Central to its approach is the Smart Nation initiative, a comprehensive framework that leverages digital technologies to enhance social inclusion, healthcare access, and long-term sustainability. Within this framework, specialized programs such as Age Well SG focus on harnessing innovation to improve the quality of life for seniors, emphasizing both community

participation and technology-enabled care[8]

A core element of this strategy is the integration of robotics and digital platforms into eldercare services. Robotics are increasingly deployed in care facilities to reduce the burden on staff and to provide consistent support for daily activities, while mobile applications connect seniors directly with caregivers and community services, fostering both independence and social engagement.

Through these initiatives, Singapore demonstrates how an aging society could turn potential vulnerabilities into opportunities for innovation, positioning itself as a leader in the development of a digitally empowered silver economy[9].

Singapore was leveraging AI and data analytics in highly specific ways. The government-led Smart Health platform integrates AI to analyze health trends, predict disease outbreaks, and identify at-risk populations, enabling proactive public health interventions. A platform called e-care@home uses sensors and machine learning to monitor the daily activities of seniors living alone, alerting caregivers to unusual patterns that might indicate a fall or health issue. Furthermore, AI was being used in clinical settings to assist with medical image analysis and drug discovery, a concerted effort to accelerate the development of age-related treatments and create a resilient healthcare sector for the future.

6. United States

The United States presents a distinct model in addressing the challenges of an aging population, one largely shaped by consumer demand and private-sector innovation rather than centralized government planning. The rapid expansion of telehealth during the pandemic marked a turning point, making virtual consultations and remote monitoring far more accessible to older adults. These services have become embedded in the healthcare landscape, offering greater convenience and reducing barriers to care for seniors. The U.S. government was increasingly using AI and digitalization to address the challenges of an aging population, a strategy that complements private-sector innovation. This approach was not about top-down planning but rather about leveraging technology to improve services and catalyze innovation. The government was focusing on targeted funding and collaborative initiatives, enhancing government services with digital tools, and investing in foundational AI and digital infrastructure.

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[8] Ministry of Health,2024

[9] Forward SG, 2025

The government was stimulating innovation through specific, large-scale projects and funding. For instance, the National Institute on Aging (NIA) has established the Artificial Intelligence and Technology Collaborators (AITC) program, a multi-million-dollar initiative that funds pilot projects focused on improving care and health outcomes for older Americans, including those with Alzheimer's disease. These projects explore technologies like ambient AI sensors, wearables, and telemedicine[10]

Similarly, the Centers for Medicare & Medicaid Services (CMS) launched the AI Health Outcomes Challenge to incentivize innovators to use AI in predicting patient health outcomes for Medicare beneficiaries, with the goal of preventing unplanned hospital admissions[11]. This challenge encourages the development of AI models that could analyze large datasets to identify high-risk patients and recommend proactive interventions. The NIA also offers Small Business Awards that support the development of innovative AI-powered products for senior care, such as digital pet avatars to assist with self-care and machine learning-based platforms for online therapy.

Federal agencies were also modernizing their own services through digitalization to better serve an aging demographic. They were exploring the use of AI-driven virtual assistants on websites and mobile apps to streamline interactions with older adults. These assistants could handle routine inquiries about benefits, send reminders about important deadlines, and provide personalized guidance on services like transportation or tax exemptions. This reduced the burden on staff and makes government services more accessible. Additionally, federal and state governments are working to streamline access to healthcare by promoting online appointment registration and medical record access. They were creating digital systems that connect online and in-person resources, allowing seniors to use various credentials for seamless registration and report retrieval, which simplifies a complex process. Prof. Atun of Harvard University who is one of keynote speakers mentioned Digital AI- DX of health systems with Figure1 below:

[10] National Institute on Aging, 2025

[11] Centers for Medicare & Medicaid Services, 2025

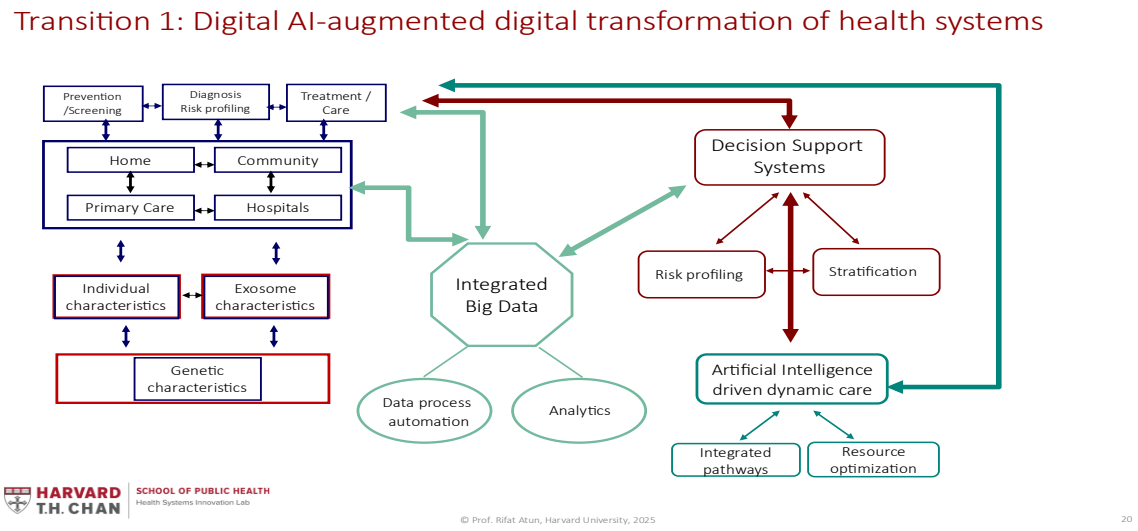

Figure 1 Digital AI augmented digital transformation of health systems

To ensure the long-term viability of these efforts, the government is investing in the underlying AI and digital infrastructure. The White House's AI Action Plan, while not exclusively focused on aging, lays the groundwork by promoting the development of a robust AI ecosystem. Key pillars of this plan included accelerating innovation by establishing regulatory "sandboxes" for testing new AI tools, building the necessary data centers and energy grids to support AI's computational demands, and investing in a skilled AI workforce 0. Furthermore, the General Services Administration's (GSA) AI Center of Excellence supports and coordinates the use of AI across all federal agencies[12].

This initiative helped agencies share best practices and deploy scalable solutions, ensuring that the government can effectively and responsibly adopt new technologies to improve services for all citizens, including the elderly, and prepare for the broader demographic shift.

7. APEC Overall

According to Aging Asia estimate, the proportion of the total population in the APEC region who are aged 60 years or over increased to 10% by 2030.As for importance of silver innovation and economy, it also projected silver economy market value in Asia and Pacific by 2025 which were USD 4.56 trillion, an increase of 43% from 2015(2). This section was concerned with overall issues on Silver Innovation after 6 case studies. The

[12] General Services Administration, 2025

first table (Table 8) was [Global Age Watch Index] with 4 domains and 13 indicators.

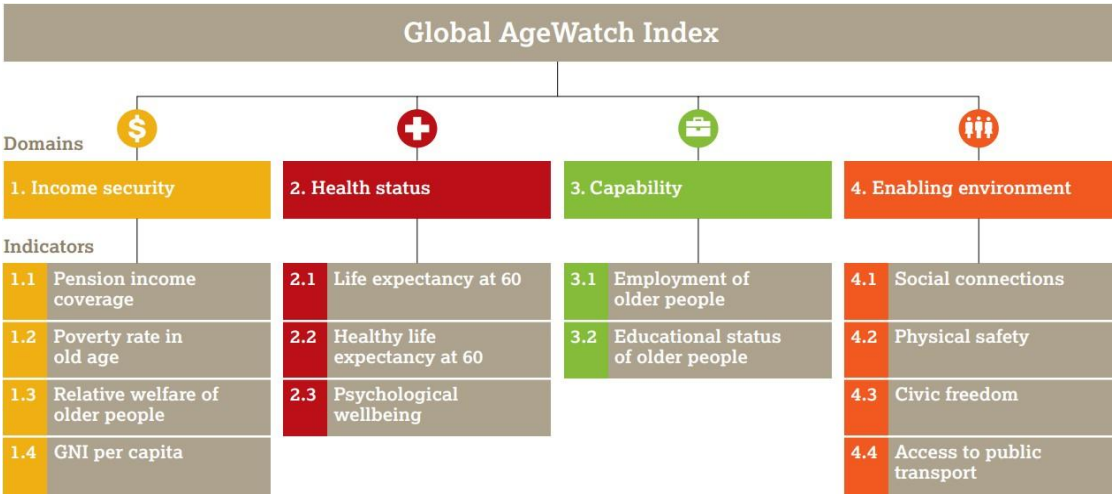

Figure 2 Global Age Watch Index

8. Findings of this workshop

This sector focuses on the Value of developing a Standard Model for Aging Societies and AI Utilization in APEC. Across the six case studies, it became clear that APEC economies were experiencing demographic change at different speeds and with diverse institutional capacities. Nevertheless, all economies—whether already super-aged or still demographically young—faced a common long-term trajectory in which population aging became a structural policy challenge. For this reason, it was both appropriate and analytically justified to conclude the following:

1. APEC economies would benefit from developing a standard, future-oriented model for aging societies and AI utilization.

The cases demonstrate that while policy instruments differ, the underlying pressures—rising care needs, workforce shortages, digital transformation, and the expansion of the silver economy—were shared across the region. A standard model did not imply uniformity of policies; rather, it provided a common conceptual framework, shared principles, and adaptable tools that economies could tailor to their own demographic stage and institutional context.

2. Economies not yet concerned about aging could still gain significant value from these cases.

Even economies with relatively young populations, such as Indonesia or others in APEC, eventually faces similar demographic transitions. Early preparation—

particularly in digital infrastructure, community-based care, and workforce planning—can substantially reduce future fiscal and social burdens. The case studies offered advance lessons, allowing younger economies to avoid the pitfalls experienced by early-aging economies such as Japan and Republic of Korea.

3. The diversity of the six cases strengthens, rather than weakens, the case for a shared APEC model.

Because the cases span a wide range of governance systems, economic structures, and demographic stages, they collectively illustrate the full spectrum of possible challenges and solutions. This diversity enabled APEC to identify:

1. common denominators (e.g., digital inclusion, community-based care, AI-enabled health services),
2. structural risks (e.g., workforce shortages, regional disparities), and scalable innovations (e.g., smart communities, telehealth, AI-IoT monitoring).
3. A standard model can therefore serve as a regional reference architecture, not a prescriptive template.

4. Preparing a standard model supports long-term regional resilience.

As aging accelerated across APEC that invested early in AI-enabled care systems, digital health, and community-based support structures are better positioned to maintain productivity, social cohesion, and fiscal sustainability. A shared APEC model would help economies coordinate approaches, share data and best practices, and reduce duplication of effort.

Chapter 6:Conclusion and Recommendations

1. Conclusion

Smart Silver Innovation Workshop brought together diverse perspectives to explore how digital transformation could help older adults live healthier, more connected, and fulfilling lives. The presentations and discussions led to key policy recommendations aimed at inclusive, ethical, and collaborative pathways for smart aging across the region.

All participants mentioned at the post-workshop survey that this was highly relevant in their economies as it leveraged ICT and AI to develop innovative, scalable solutions that address the elderly's challenges in healthcare, mobility, social inclusion, and access to essential services amid the economies' rapidly aging population.

-From this event, participants have gained a more global and diverse perspective on aging societies and the role of technologies in this society. The perspectives they gained were bird's eye's view as well as glimpses of differences and initiatives from different experiences and lessons.

As the evidence of successful workshop, Participants feedback at the APPENDIX 5 was extremely useful to proceed to the next step for Phase 4.

2. Recommendations

- **Government needs excellent Digital Governance in Silver Digital Economy:**
  Older adults often face unique barriers when it comes to using digital technology. To address this, governments should prioritize policies that make more accessible and easier to use. That includes providing affordable internet, user friendly devices and interface, and customized digital literacy programs. The goal is to help older adults to be able to live independently and conveniently in digital world and be able to connect to the loved ones, manage their health, or engage in their communities.
- **Use Technology to Improve Everyday Life:**
  Technological advancements particularly in AI, Internet of Things (IoT), robotics, and data analytics—present unprecedented opportunities to improve the well-being, autonomy, and safety of aging populations. APEC economies should adopt policies that promote the responsible development and deployment of these technologies in ways that are accessible, ethical, and centered on the needs of the elderly.
- **Set Clear Ethical and Legal Frameworks:**
  As more technology enters the lives of the elderly, it's important to ensure that their rights and privacy are protected. This means setting up legal and ethical guidelines around how personal data is collected and used, especially in areas like health

monitoring and home surveillance. APEC economies must ensure that these innovations are governed by clear, robust, and adaptive ethical and legal frameworks. Without such safeguards, there is a risk of violating the privacy of the elderly, especially in contexts of health data, surveillance, and automation.

- **Work Together Across Borders:**
  The challenges of an aging society aren't unique to any one economy. APEC economies can benefit tremendously from sharing ideas, research, and successful models. By working together through joint projects, shared technology and standards, APEC economies can learn from one another and speed up the development of effective solutions. Collaboration is key to making smart silver innovation a reality across the region.
- **Integrate Digital Health into Healthcare Strategies:**
  Prioritize the adoption of telemedicine, remote monitoring, and AI-powered diagnostics in healthcare strategies for older persons. This can improve access to care, reduce healthcare costs, and enable proactive health management.
- **Invest in Geriatric Technology Research and Training:**
  Increase funding for research into age-related diseases and the development of specialized technologies for geriatric care. Furthermore, invest in training healthcare professionals in the use of digital health tools and technologies.
- **Support Home-Based and Community-Based Care Technologies:**
  Promote the development and adoption of technologies that enable older persons to age in place, such as smart home sensors for fall detection, medication reminders, and assistive robotics for daily living activities.
- **Promote Mental Well-being through Digital Solutions:**
  Encourage the development and use of digital tools and platforms for mental health support, social connection, and cognitive stimulation for older adults, addressing issues of loneliness and social isolation.
- **Implement AI Literacy and Digital Skills Training for Seniors:**
  Launch comprehensive domestic and regional programs to equip older adults with the knowledge and skills to understand, interact with, and benefit from AI technologies. These programs should address basic AI concepts, practical applications (e.g., using AI assistants, understanding personalized recommendations), and critical thinking skills to identify misinformation or potential biases.
- **Advocate for Human-Centered AI Design Principles:**
  Promote the adoption of human-centered design principles in the development of AI

solutions for older persons. This includes ensuring user-friendly interfaces, intuitive interactions, and customizable options. Emphasize involving older adults in the design and testing phases of AI products to ensure their needs and preferences are genuinely met.

- **Establish APEC AI Innovation Hubs for Healthy Aging:** Create specialized regional or virtual hubs focused on AI applications for older adults. These hubs should facilitate collaborative research, data sharing (with robust privacy safeguards), and pilot projects across member economies. Focus areas could include predictive health analytics, personalized care robots, smart home environments, and AI-powered cognitive training.
- **Advocate for Human-Centered AI Design Principles:** Promote the adoption of human-centered design principles in the development of AI solutions for older persons. This includes ensuring user-friendly interfaces, intuitive interactions, and customizable options. Emphasize involving older adults in the design and testing phases of AI products to ensure their needs and preferences are genuinely met.
- **Prioritize Accessible and Affordable AI Solutions:** Implement policies that promote the affordability and accessibility of AI-driven tools and services for older persons, including those in remote areas or with limited income. Explore subsidies or public-private models to ensure equitable access to beneficial AI technologies.**:**
- **AI systems:** AI make decisions that affect older persons, especially in critical areas like healthcare or financial management. Implement mechanisms for individuals to understand, challenge, and correct AI-driven decisions.
- **Invest in AI Ethics Education for Developers and Caregivers:** Provide training and resources for AI developers, healthcare professionals, and caregivers on the ethical considerations and responsible use of AI in elderly care.

It has been announced that both the governments for APEC REPUBLIC OF KOREA 2025 and APEC CHINA 2026 have placed high priorities on “Smart Silver Innovation”. On this regard, as a new trend of the rising aging society is globalizing, it is highly necessary for APEC to formulate global standards on Smart Silver Innovation.

APPENDIX

APPENDIX 1 The Program with Agenda of 2-day workshop

APEC TELWG Workshop on Smart Silver Innovation

1st day (28 July)	
Orientation 1	Prof. Dr. Toshio Obi Nakamura
Opening remark	Akifumi Irie, HOD Japan, Dy Director-General, Ministry of Internal Affairs and Communications (MIC), Japan
Keynote speech	Prof. Dr. Atun, Harvard Univ. Director, Health System
Innovation Lab.,	School of Public Health (United States)
	[Digital and AI-Enabled Transformation of Health Systems]
Keynote speech	Prof. Dr. Theng, Executive Director, Aging Research
	Institute for Society and Education (ARISE), Nanyang
	Technical Univ. (Singapore)
	[Gerontechnology in Action: Shaping the Future of Aging
through	Science and Innovation]
Interactive session1	Case Studies
	The Philippines: Prof. Ching, La Salle University
	Singapore: Ass. director, Ms. Falina, ARISE NTU
	Indonesia: Prof. Suhono Bandung Inst. Of Tech
	Moderator: Vice Rector Prof. Jirapon, Thammasat Univ.
	(Thailand)
Speech	Prof. Dr. Iwasaki Waseda University (Japan)
	[Smart Silver Innovation in Japan]
Speech	Prof. Dr. Y.R. Park, Kangham U (Republic of Korea)
	[Korea's Age-Tech Revolution: Pioneering Sustainable
Solutions for an	Aging Society]
	Interactive session 2Case Studies
	Australia: Ms. Spring Ass. Director, Gov. Dep. of ITRDCSA
	Japan: Mr. Kato, Deputy Director Clare (Seoul)
	Chinese Taipei: Prof. Liao Hsin Chung, TEG
	Moderator: Prof. Dr. T. Kim, ex-Director, Institute of Aging, Korea Univ
	Q&A and Discussion (Summing up)

2nd day (29 July)	
Orientation 2	Prof. Dr. Obi Nakamura, APEC Consultant/ (Japan)
Speech 3	Prof. Dr. Obi Nakamura, APEC Consultant/ (Japan)
	[Change for New Silver World]
	Interactive session 3 Case Studies
	China: Du Peng, Dean of Renmin Univ of China
	Viet Nam: Prof. Hung, PTIT
	Indonesia: Prof. Allya, Bandung Institute of Tech
Moderator:	Prof. Theng, ED, ARISE, Nanyang Technological University
Speech 4	Prof. MD, K.W. Park Korea University Medical School
	[Korea's Next Chapter in Dementia Care: Integrating Digital
Health and	Big Data]
	Interactive session 4 Sectors- Aging, AI and SDG
	The Philippines: Prof. Magno, La Salle University
	Thailand : Prof. Pompon Director of AI Center, Thammasat U.
	China: Prof. Lu Jiehua, Director, Institute for National
Strategic	Studies on Aging, Peking Univ
	Russia: Prof. Alexander. Chair, RANEPA
	Moderator: Prof. Dr. Atun, Harvard University
Q&A and Discussion	(Summing up)
	Roundtable Discussion (policy recommendations)
	Co-chairpersons: Prof. Obi Nakamura (Japan),
	Vice Rector Jirapon (Thailand)
	Prof. Suhono (Indonesia)

APPENDIX 2 References

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- *UN (2025) The 17 GOALS* https://sdgs.un.org/goals

APPENDIX 3　Presentations materials (PPTs) from the Workshop

- ✓ Prof. Dr. Iwasaki Waseda University (Japan) [Smart Silver Innovation in Japan]

https://idg-waseda.jp/appendix-ppt-naoko-iwasaki.pdf

- ✓ Prof. Dr. Atun, Harvard Univ. Director, Health System Innovation Lab., School of Public Health (United States) [Digital and AI-Enabled Transformation of Health Systems]

https://idg-waseda.jp/appendix-ppt-rifat-atun.pdf

- ✓ Prof. Dr. Y.R. Park, Kangham U (Republic of Korea) [Republic of Korea's Age-Tech Revolution: Pioneering Sustainable Solutions for an Aging Society]

https://idg-waseda.jp/appendix-ppt-yeong-ran-park.pdf

- ✓ Prof. Dr. Theng, Executive Director, Ageing Research Institute for Society and Education (ARISE), Nanyang Technical Univ. (Singapore) [Gerontechnology in Action: Shaping the Future of Ageing through Science and Innovation]

https://idg-waseda.jp/appendix-ppt-theng-yin-leng.pdf

APPENDIX 4　Result of Post-Workshop Survey

1.Result and Findings

We utilized the Methodology by generated AI (ChatGPT and /Gemini. Google) for preparing Table

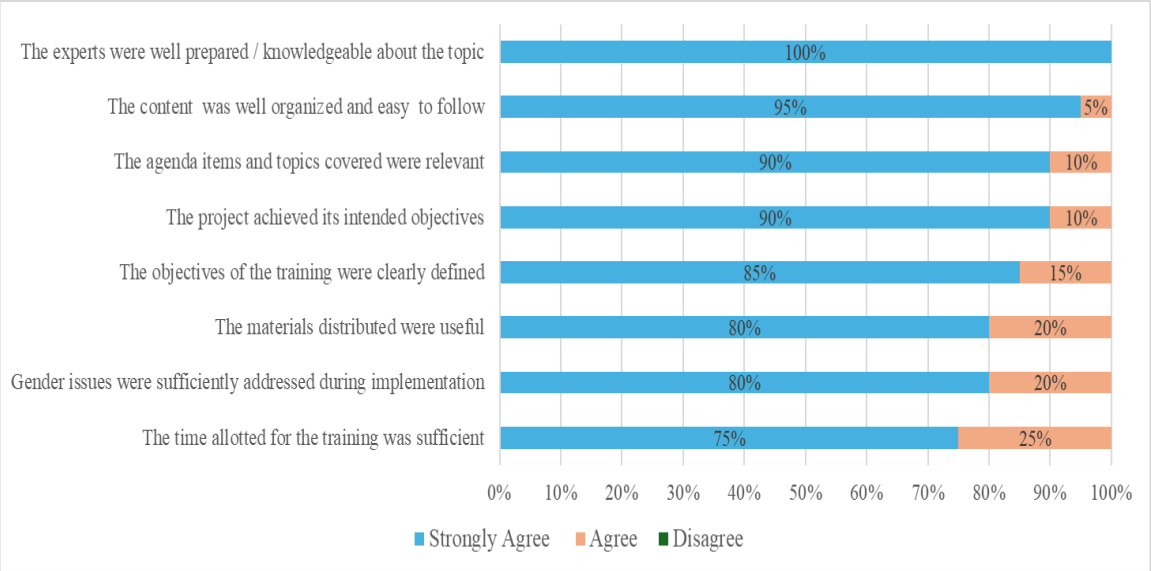

Table A-1　The Methodology by Generative AI

Participants answered the questionanaires provided by the common template of APEC Secretariat

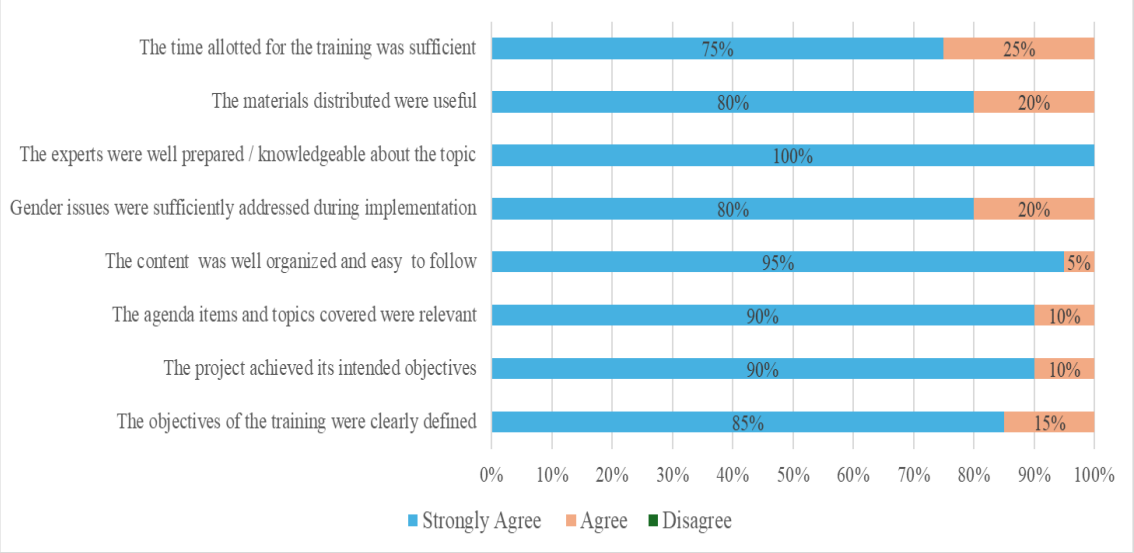

Table A-2　The post-survey results for the APEC workshop

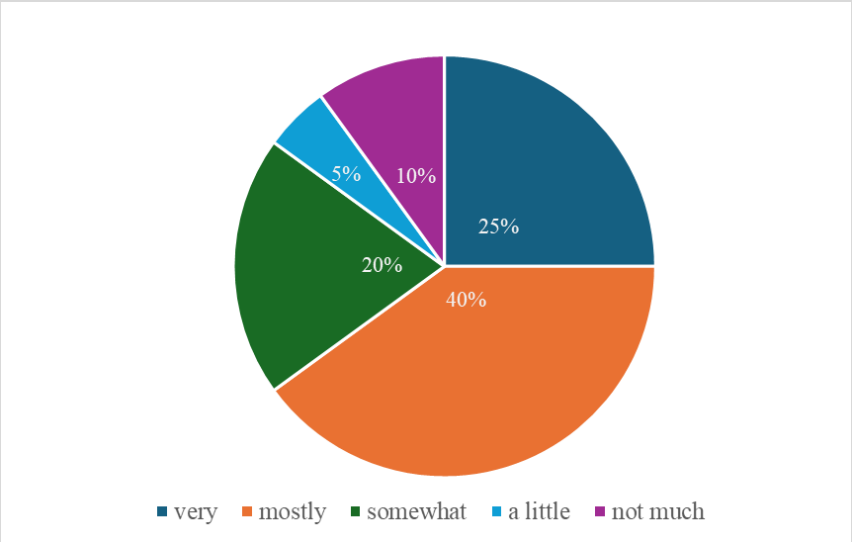

Table A-3 How relevant was this project to you and your economy?

The results indicated that both quality of experts and contents of presentations were extremely high. Also, most of participants were satisfied with the framework of the workshop management.

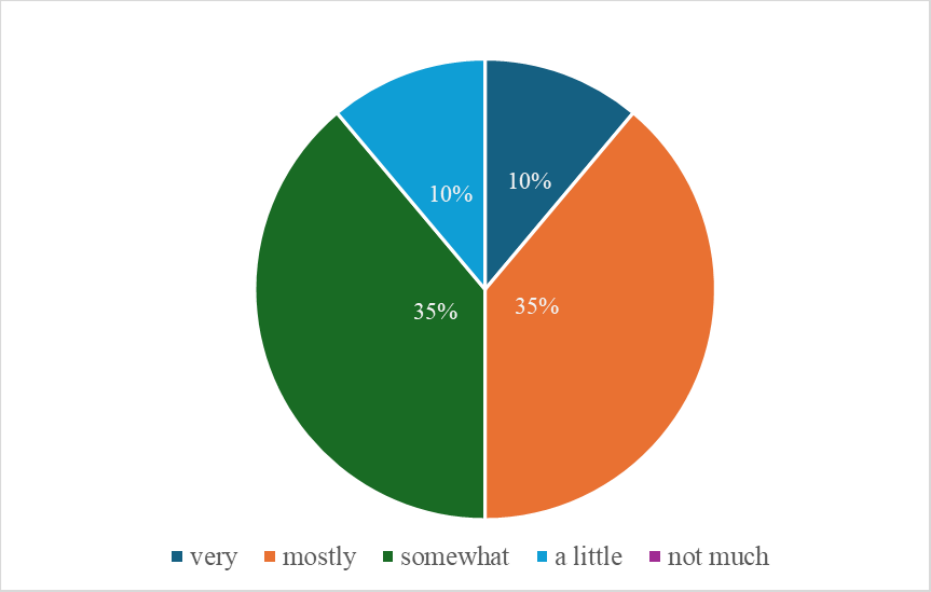

Table A-4 Rate your level of knowledge and skills in the topic prior to participating in the event

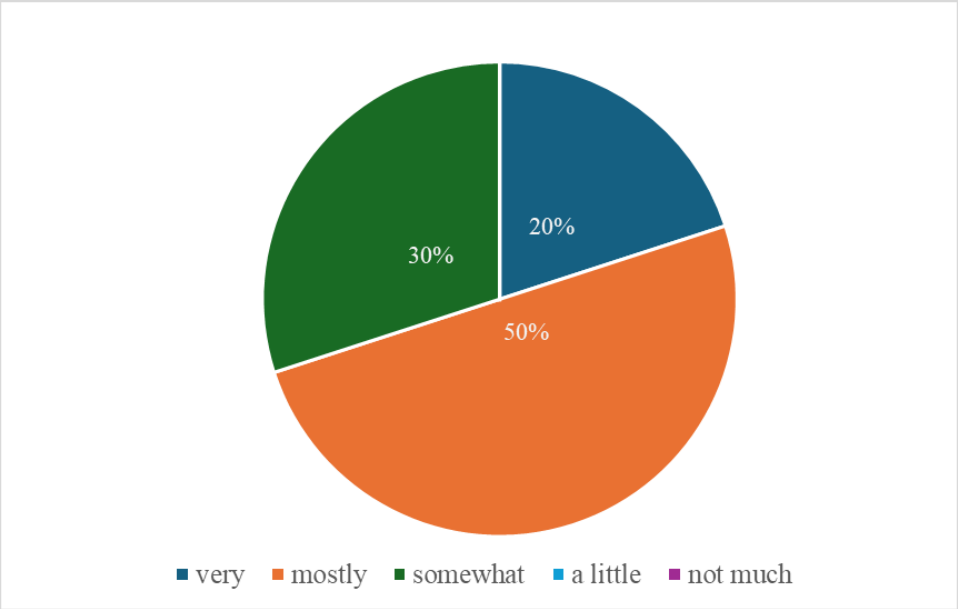

Table A-5 Rate your level of knowledge and skills after participating in the event

2. Findings based on the post-survey results

Here is a comprehensive data analysis of the participants' feedback.

Overall workshop Training Satisfaction

The workshop received exceptionally high praise across all fundamental pedagogical metrics.

- **Expertise:** 100% of participants "Strongly Agreed" that the experts were well-prepared and knowledgeable.
- **Organization & Content:** 95% "Strongly Agreed" that the content was well-organized, while 90% "Strongly Agreed" that the agenda items were relevant.
- **Objective Achievement:** 90% "Strongly Agreed" that the project successfully achieved its intended objectives.

1) Knowledge and Skill Acquisition

There is a measurable "upskilling" effect observed when comparing pre-participation and post-participation data.

- **Pre-event:** Only 45% (9 out of 20) rated their knowledge as "Very" or "Mostly" proficient.
- **Post-event:** This figure increased to 70% (14 out of 20).
- **Growth:** Notably, the number of participants feeling "Very" knowledgeable doubled from 2 to 4.

2) Relevance to economies

The feedback regarding the project's relevance to the participants' specific economies was more distributed compared to the satisfaction ratings.

- **High Relevance:** 65% (13 out of 20) found the project "Very" or "Mostly" relevant.
- **Insight:** While the training execution was perfect, there may be a slight gap in tailoring the content to the specific economic contexts of all participants.

3) Specific Considerations

- **Gender Issues:** 80% "Strongly Agreed" that gender issues were sufficiently addressed, with the remaining 20% agreeing. This indicates a successful integration of inclusive perspectives.
- **Time Management:** While still positive, the "Time allotted" metric had the lowest "Strongly Agree" count (15 participants), suggesting that future workshops might benefit from a slightly more relaxed pace or extended duration.

APPENDIX 5 Participants' feedback

Based on the post-survey results, comprehensive analysis was summarized as follows:

- How relevant was this project to you and your economy?

Question	Answers
How relevant was this project to you and your economy?	- Japan faces super-aging society, so the use of ICT is crucial for tackling challenges it brings about. - This is an area that I am interested in researching. I have heard a lot of important arguments about the significance and relevance of this type of research. - This project is highly relevant to my research on community computing/smart systems for aging. It is also mostly relevant for Indonesia as a large economy. However, since the demographic profile of Indonesia is not yet entering the advanced aging community yet, it is still mostly relevant. Nevertheless, it is vital that Indonesia prepare early since the aging demographic is growing in Indonesia and it is important to set up systems, culture and infrastructure to be able to anticipate this change well. - The project was extremely relevant to both my Institute and domestic priorities. It highlighted innovative solutions for aging populations, a critical issue for Viet Nam in the coming decades. - The Silver Innovation workshop is highly relevant in the Philippines as it leverages ICT and AI to develop innovative, scalable solutions that address the elderly's challenges in healthcare, mobility, social inclusion, and access to essential services amid the economy's rapidly aging population. - It is very relevant, Singapore is facing aging issues, and we are looking into the issue and possible solution. - An aging society is also a significant issue in Chinese Taipei, and the exchange and discussion of smart senior-related policies and tools indeed meet our needs. - Smart silver innovation is paid great attention now in China. - Aging is a critical challenge for APEC economies. The workshop helped to identify major challenges as well as potential solutions from different member states to address them. - I gained valuable insights from the participants from other

	economies on aging initiatives, and several potential opportunities for collaboration have emerged. - I am interested in inclusive digital transformation and would like to work towards closing the gap between medical care and social care. - Most APEC economies including our economy are facing challenges of aging societies, so it is very helpful to absorb knowledge and relevant stakeholders' approach.

- In your view what were the project's results/ achievements?

Question	Answers
In your view what were the project's results/ achievements?	- Exchanging best practices of ICT use in the silver economy era. - Excellent reports, discussions, and a free exchange of ideas. - In addition to the policy brief resulting from the project, as well as the current initiatives, the main project results were the sharing of knowledge and generation of network between participants. - The project successfully promoted international collaboration, showcased cutting-edge technologies, and initiated dialogue on policies for aging societies. It strengthened regional cooperation and provided actionable insights. - The project successfully fostered collaborative problem-solving among stakeholders, producing practical ICT- and AI-driven prototypes and strategies that can enhance the quality of life, independence, and social participation of elderly citizens. - The APEC Smart Silver Innovation project achieved knowledge sharing and collaboration among member economies on innovative solutions for aging issues, showcasing successful projects and policies that can be replicated or adapted to address the challenges of aging populations. - By fully sharing their own experiences, economies can learn from each other's strategies and technological applications in smart senior care, thereby effectively achieving the goal of exchanging knowledge and experiences. - The sharing of ideas among economies. - It could expend our similar research to great extent regarding silver economy.

	- Bringing together multiple institutions and leading experts from APEC economies for effective experience sharing and exposure to innovations emerging from member states. - A safe and constructive space where participants share perspectives, exchange insights, and draw lessons from the best practices of other economies. - It provided a great platform for sharing the status of member economies and an opportunity to network with relevant organizations and experts. - I think it is particularly important to share the situation in Japan, which is an advanced example of the world. - To share knowledge and relevant stakeholders' approach and tackle each economy's challenges.

- What new skills and knowledge did you gain from this event?

Question	Answers
What new skills and knowledge did you gain from this event?	- APEC economies' policies for talking aging society. - System analysis of the problem and user feedback (design and implementation). - From this event, I have gained a more global and diverse perspective on aging societies and the role of technologies in this society. The perspectives I've gained are both bird's eye's view (e.g. from Prof. Atun's speech), as well as glimpses of differences and initiatives from different economy experiences. - I gained deep understanding of smart health technologies, age-inclusive policy frameworks, and public-private partnership models. These insights will support our strategic planning and policy consulting work. - I gained deeper knowledge of ICT and AI applications for aging-related challenges, along with skills in collaborative design thinking, user-centered problem analysis, and prototyping solutions tailored to the needs of elderly citizens. - I gained insights into innovative technologies and policies that support aging populations, such as smart home technologies, healthcare systems, and social support models. I also learned. - I have learned how to enhance the social inclusion of older

	adults through the adoption of digital technologies. - Other economies aging situation and how it was tackled. - I did learn some new research topics and methods. - Better understanding of a broad range of innovations for Silver Economy applied in different settings. - The aging population and the emerging silver economy present not only challenges but also opportunities for potential collaboration. The scenarios shared by different economies broadened my perspective on aging-related issues. - I gained a great deal of information about each economy and insights for further development. - I could gain other economies' initiatives and understand the common and different approach.

- Rate your level of knowledge of and skills in the topic after participating in the event

Question	Comments
Rate your level of knowledge of and skills in the topic after participating in the event	- I gained a more systematic understanding of the problem and learned about new methods. - Originally, I work mostly on smart systems for community health in Indonesia, initially focusing on mother and child health, which is still a key problem in Indonesia. However, recently I started working on. - The sessions significantly enriched my expertise and provided strategic tools for practical application in our academic and advisory efforts. - After participating in the event, I would rate my knowledge and skills on the topic as advanced, with strong competence in applying ICT and AI solutions to address the multifaceted needs of elderly citizens. - After attending the event, I have a better understanding of the innovative solutions and policies that can address aging issues, and I'm more aware of the successful implementation strategies. - I achieved some knowledge regarding silver economy across APEC economies. - Better insight into locally generated innovations and their

	application - Developed a deeper appreciation of the diverse strategic initiatives on aging presented by the different economies. - I had little knowledge outside Republic of Korea on this topic, and I learned a lot from this workshop.

- How do you apply the project's content and knowledge gained at your workplace?

Question	Answers
How will you apply the project's content and knowledge gained at your workplace? Please provide examples (e.g. develop new policy initiatives, organize trainings, develop work plans/strategies, draft regulations, develop new procedures/tools etc.).	- The development of new tools, the updating of lecture content, and the discussions on local conferences and seminars. - The knowledge gained has resulted in potential new collaboration with at least 2 universities regarding the use of technology in the context of aging society, as well as advanced my group's research. - We initiate pilot studies and policy briefs on aging innovation, integrate key topics into postgraduate curriculum, and advise government bodies on regulatory frameworks and funding mechanisms for silver economy solutions. - I apply the project's content by integrating ICT- and AI-based solutions into work plans and strategies, such as developing digital health monitoring tools for senior clients, organizing capacity-building workshops on tech-assisted eldercare, and proposing policy initiatives that promote inclusive, technology-driven services for the elderly. - I can apply the knowledge gained to develop new policy initiatives or work plans that incorporate innovative solutions for aging populations. For example, I can explore implementing smart home technologies or healthcare systems that cater to the needs of elderly citizens. - Create a research proposal for funding. - I may take full use of the knowledge learned from the workshop to write a book focusing on silver economy. - Develop collaborative research projects. - The project focuses on innovations and solutions for the silver economy. I am collaborating with one to two economies to adapt our existing work to their contexts. This process will help refine

	our innovations to ensure universal design and broader acceptance. - I will apply my knowledge to my future research on smart aging, and also utilize it for future development of the ASEM Global aging center to enhance human rights of older persons, especially related to the digital equity issues. - Develop new policy initiatives. - It could be one option to develop new policy initiatives.

- What needs to be done next by APEC

Question	Answer
What needs to be done next by APEC? Are there plans to link the project's outcomes to subsequent collective actions by fora or individual actions by economies?	- I think such workshop should be continued to share best practices of ICT use among economies at the APEC. The APEC should issue silver ICT compendium in the future for sharing among economies. - APEC should continue and strengthen its efforts in this area, as this issue affects all economies. - Advance the policy brief to related economies, including potentially leveraging synergies between economies. In addition, APEC can facilitate more sustainable collaboration between economies for smart silver society. - APEC should establish a task force to facilitate ongoing cooperation, publish implementation toolkits, and organize annual progress-sharing forums. Support for joint research and cross-border pilot projects should also be considered. - APEC should next facilitate cross-economy collaboration to pilot and scale the project's ICT- and AI-based eldercare solutions, integrate them into relevant policy frameworks, and encourage member economies to commit to follow-up actions such as joint research, funding mechanisms, and capacity-building programs for sustainable implementation. - APEC can facilitate further collaboration and knowledge sharing among member economies, provide funding or resources for pilot projects, and encourage the development of standards or guidelines for innovative aging solutions. APEC can also link the project's outcomes to subsequent collective

	actions, such as policy dialogues or capacity-building workshops. - Create more opportunities to share ideas. - To build up the research network across APEC. - Development of an APEC white paper that presents a landscape analysis of the current challenges faced by APEC economies in relation to aging and the major opportunities in building a Smart Silver Economy across APEC. APEC resolution on policies to encourage SMART Silver Innovation. - 1) To enable different economies to support one another in developing universally accepted silver innovations, I propose creating an online platform to gather the voices of older adults across these economies. This platform would serve as a valuable space to test our innovative ideas, ensuring that solutions are both useful and usable before implementation. 2) Formulate guidelines to ensure the safe and ethical application of AI in silver innovations. - Continue the dialogue and come up with the follow-up agenda related to policy recommendations to move forward in aging world. - We should continue our discussion in this field. - It is necessary to publish the outcome of this project to reach out to people who don't attend. Related project should be increasingly proposed.

- How could this project have been improved?

Question	Answer
How could this project have been improved? Please provide comments on how to improve the project, if relevant.	- The participants discussed suggestions for improvement and unanimously agreed on policy recommendations. - I believe the project is already excellent as it is. However, most presentations focus on initiatives on single economies or give a very broad bird's eye view of the issue. More focus on collaboration or potential synergies /complementarities between economies would give more value added to the international forum. - The project was excellently designed and delivered. Future

	iterations could include site visits or virtual demonstrations of successful implementations to enhance practical understanding. - The project could be improved by incorporating more direct engagement with elderly participants during the design phase, extending the implementation period to refine prototypes, providing seed funding for promising solutions, and establishing clearer mechanisms for monitoring and scaling outcomes across APEC economies. - APEC could facilitate more networking opportunities among participants, allowing them to establish partnerships or collaborations on specific projects. Would be good for APEC to invite 2 paid speakers and not just one. - Invites more experts. - I do hope to keep in touch with next APEC workshop or some other chances to do more cooperative research in near future. - Appropriate level of funding to establish an APEC wide multi-year collaborative funding for research, development and innovation. - This excellent project, led by Prof. Obi and Prof. Iwasaki, has fostered a strong sense of camaraderie, creating a safe and collaborative space to share ideas and learn from one another.