

Survey on passenger preferences and opinions regarding digital technologies at airports in Norway

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PART I

Introduction and method

Aim and objectives

- The survey investigates passenger preferences and opinions regarding digital technologies at airports in Norway
 1. The extent to which passengers prefer to use digital technologies for key airport processes
 2. Passenger opinions about social and ethical issues associated with digital technologies at airports
- The survey is part of a wider project on the digitalisation of passenger services at airports in Norway: www.digitalairportsnorway.com

Partners



Lead
partner



International
partner



National
partner



Industry
partner



The Research Council
of Norway

Funding body

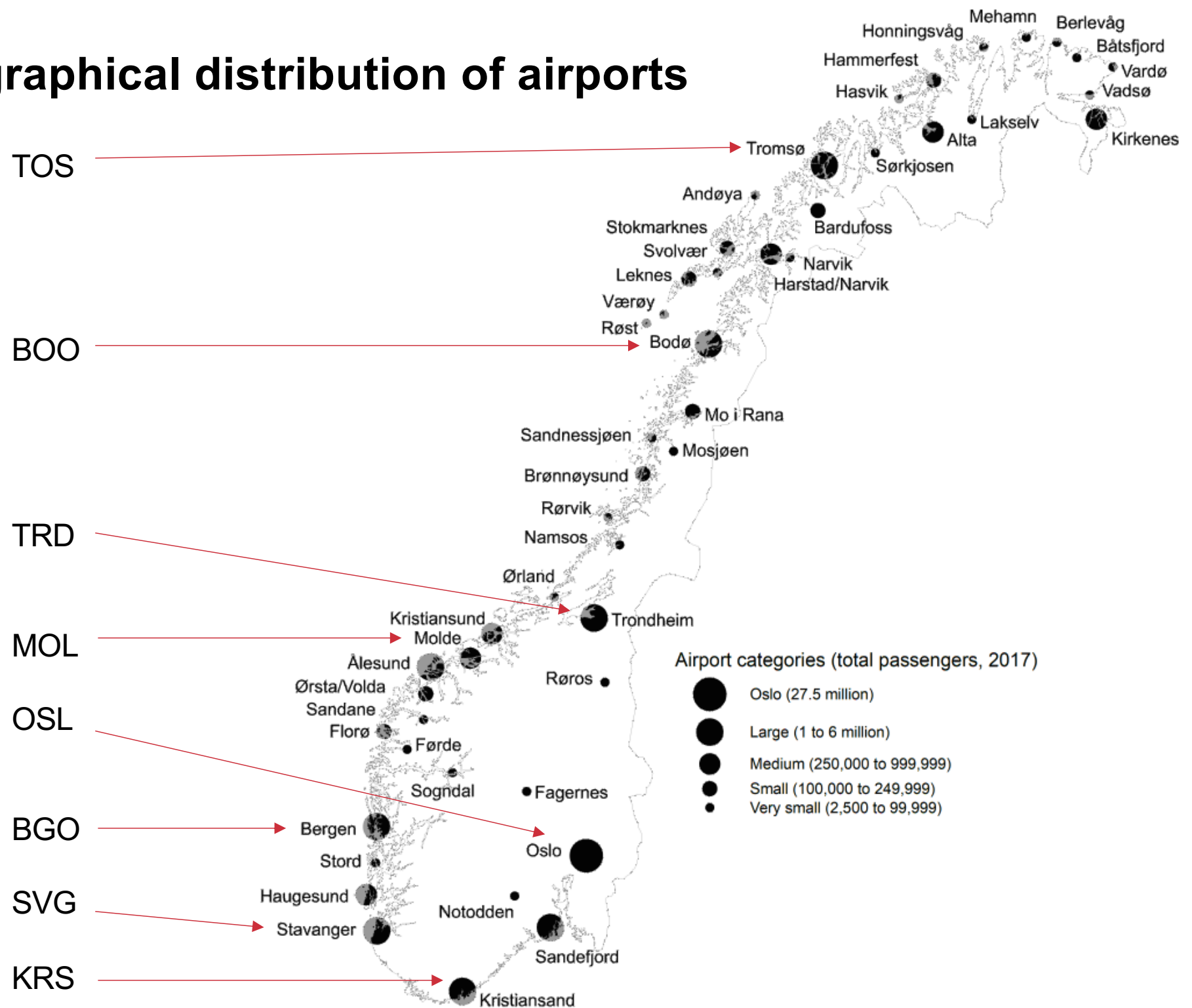
Approach

- 6082 computer-assisted self-completion surveys
- At departure gates of 8 airports in Norway
- Available in 2 languages (Norwegian and English)
- Pilot study of 100 interviews
- Administered by Epinion's trained field force

EPINION

Airport	n	%
OSL	1370	22.5
BGO	846	13.9
SVG	880	14.5
TRD	831	13.7
BOO	537	8.8
TOS	536	8.8
KRS	544	8.9
MOL	538	8.8
Total	6082	100.0

Geographical distribution of airports



Margins of error

- Estimates in the analysis are 95% likely to fall 1% above or below the actual estimate, or 99% likely to fall 2% above or below



Margins of error vary by proportion percentages

Population size (N): 55,035,539. Sample size (n): 6082

Proportion percentage (p)	Confidence level (α)		
	90%	95%	99%
5% or 95%	+/-0.460%	+/-0.548%	+/-0.720%
10% to 90%	+/-0.633%	+/-0.754%	+/-0.991%
15% or 85%	+/-0.753%	+/-0.897%	+/-1.179%
20% or 80%	+/-0.844%	+/-1.005%	+/-1.321%
25% or 75%	+/-0.913%	+/-1.088%	+/-1.430%
30% or 70%	+/-0.967%	+/-1.152%	+/-1.514%
35% or 65%	+/-1.006%	+/-1.199%	+/-1.575%
40% or 60%	+/-1.033%	+/-1.231%	+/-1.618%
45% or 55%	+/-1.049%	+/-1.250%	+/-1.643%
50% or 50%	+/-1.055%	+/-1.257%	+/-1.652%

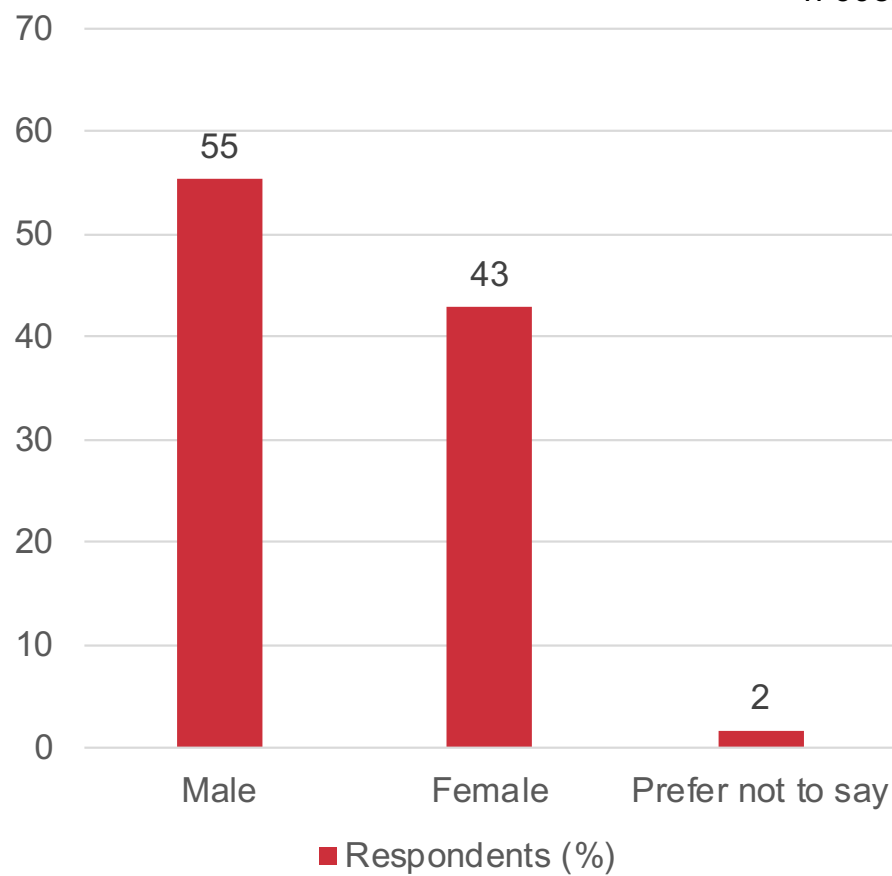
The Margin of Error (MOE) is calculated as follows: $MOE = z * \sqrt{p * (1 - p) / (N - 1) * n / (N - n)}$
Where: $z = 2.576$ for a confidence level (α) of 95%, 1.960 for 95%, 1.645 for 90%, p = proportion
(expressed as a decimal), N = population size, n = sample size

PART II

Respondent and trip characteristics

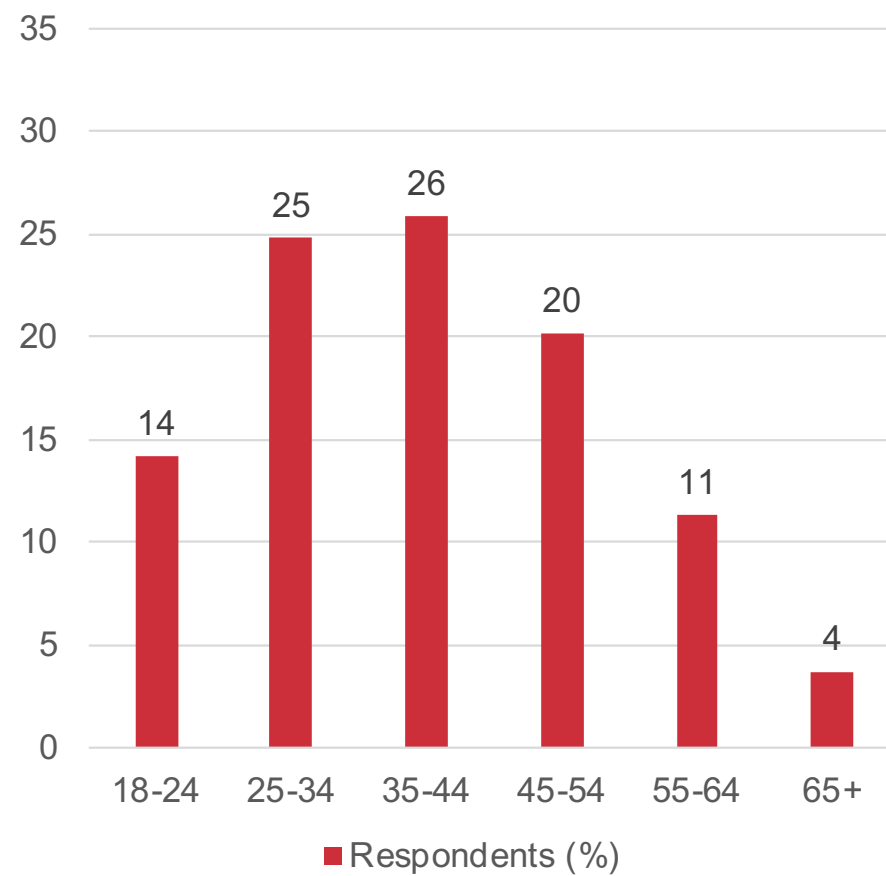
Gender

n 6082



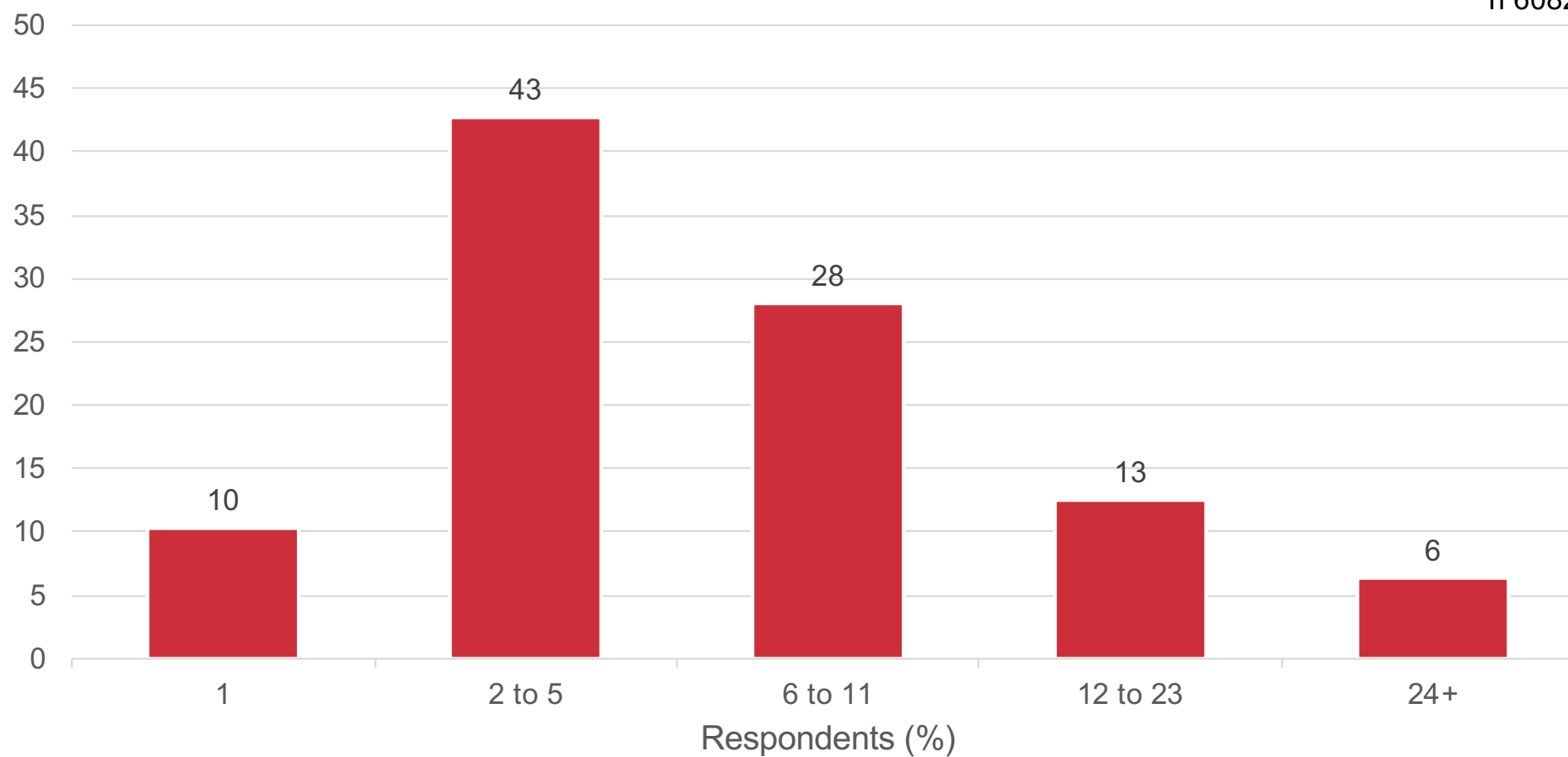
Age (in years)

n 6082



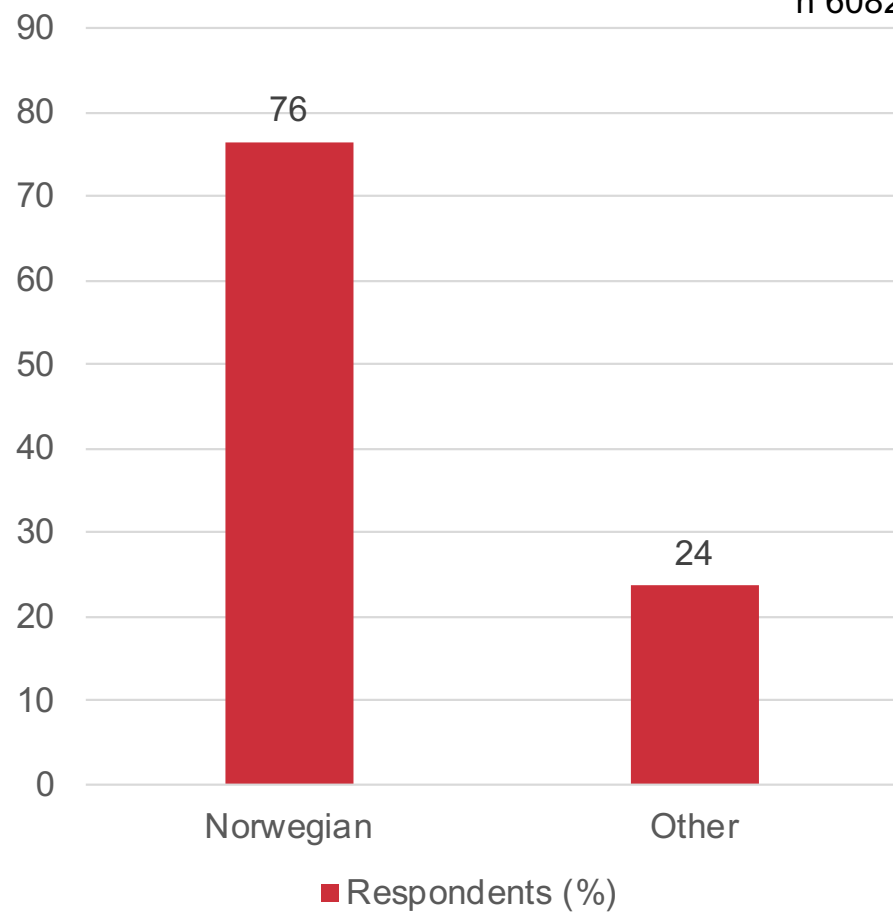
Return flights in the last 12 months (including the current one)

n 6082



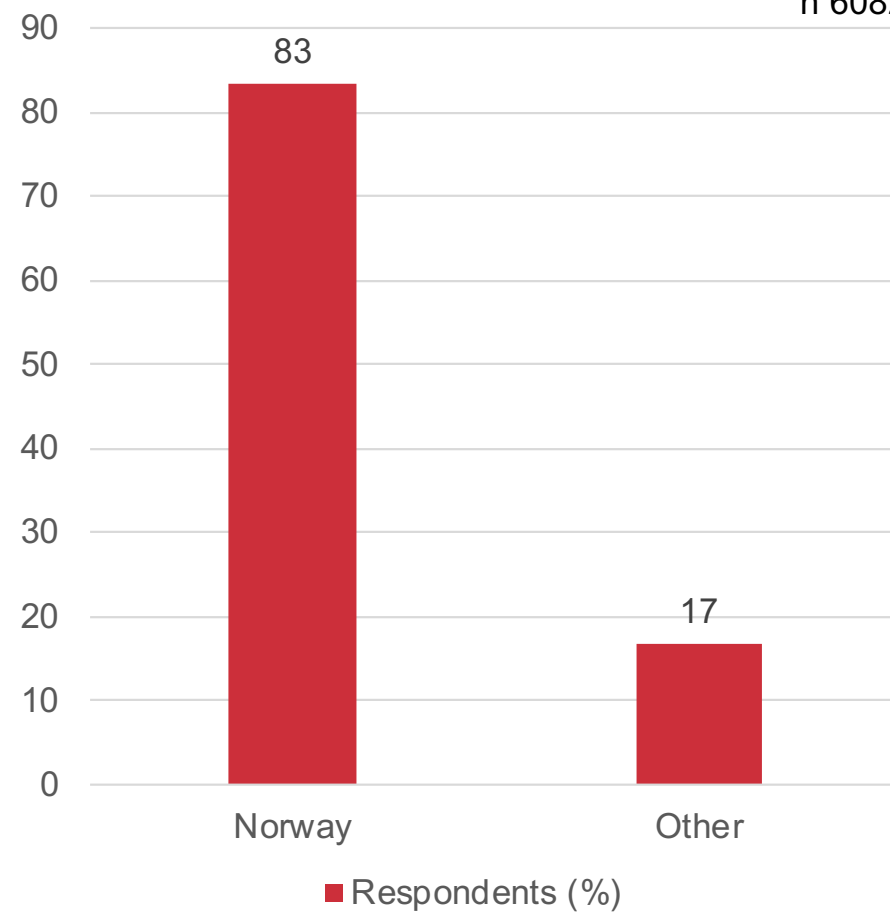
Nationality

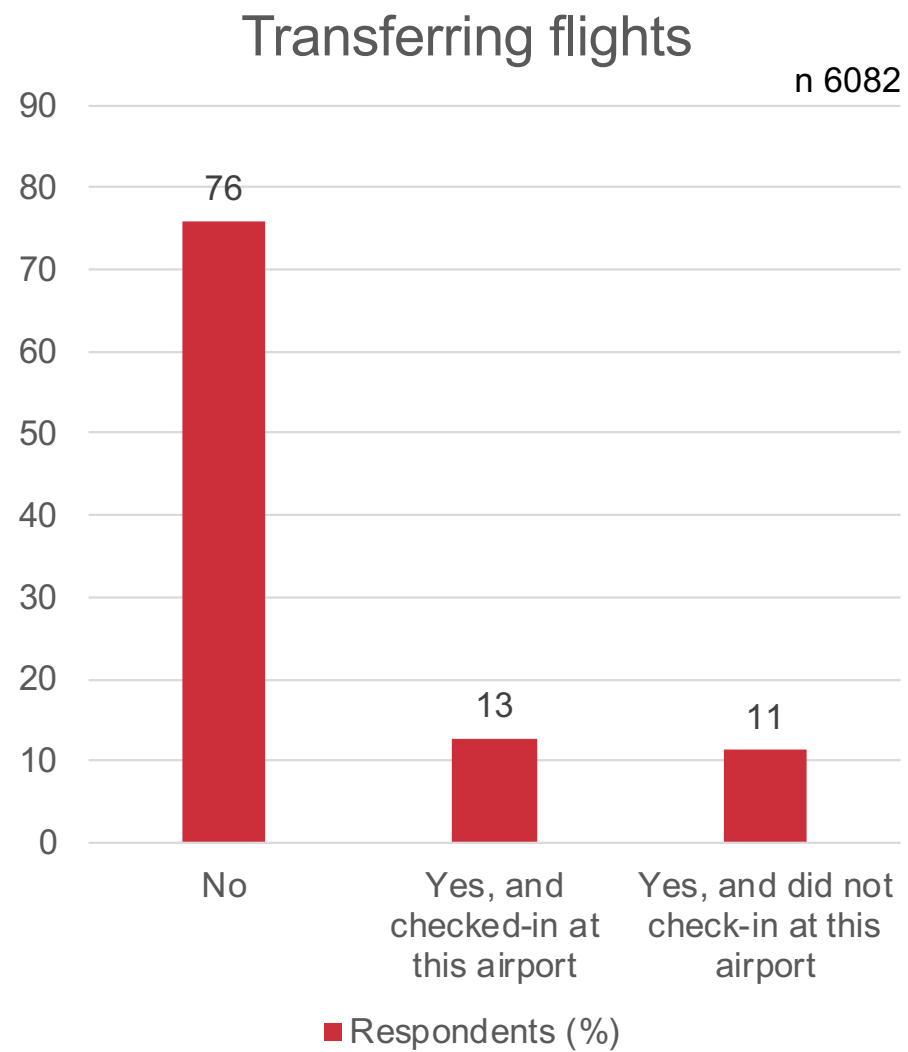
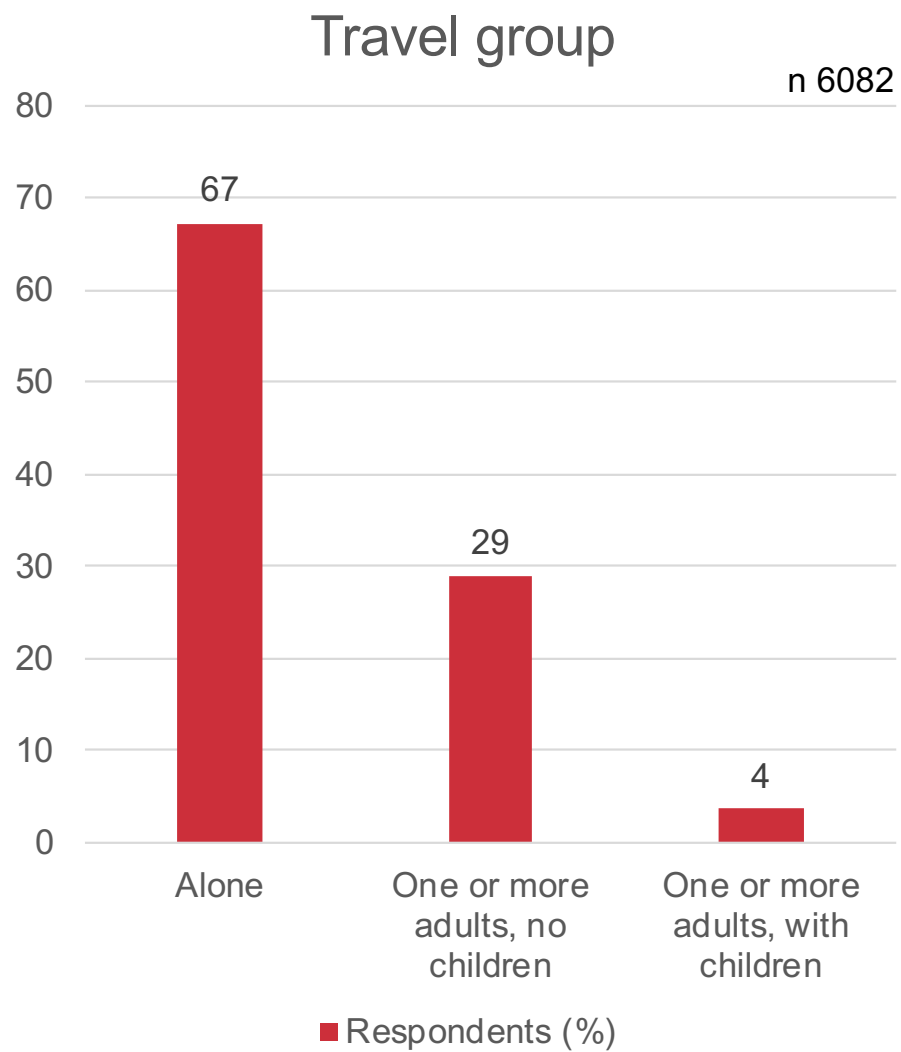
n 6082



Residency

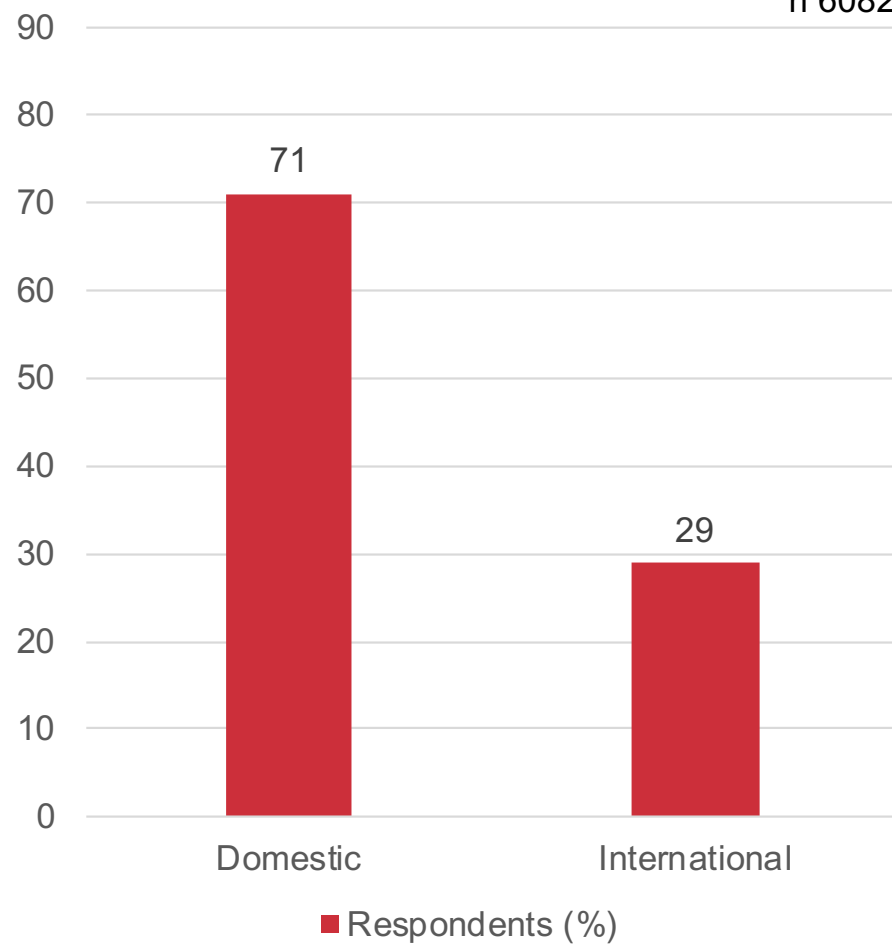
n 6082





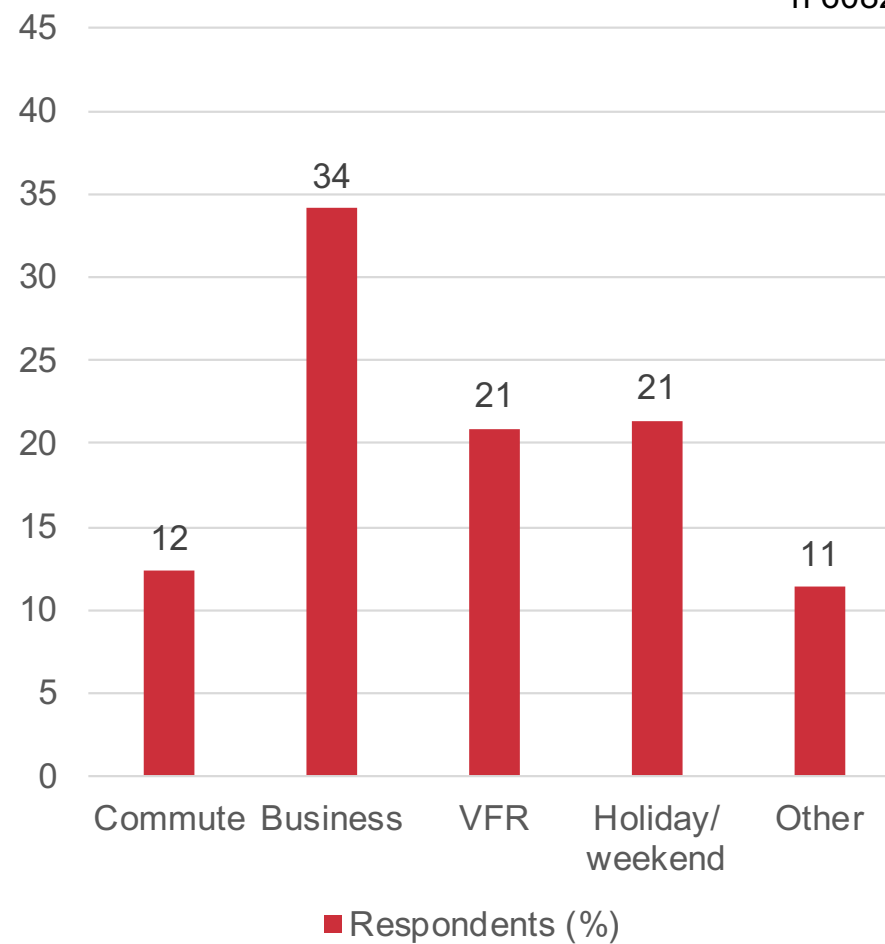
Type of trip

n 6082

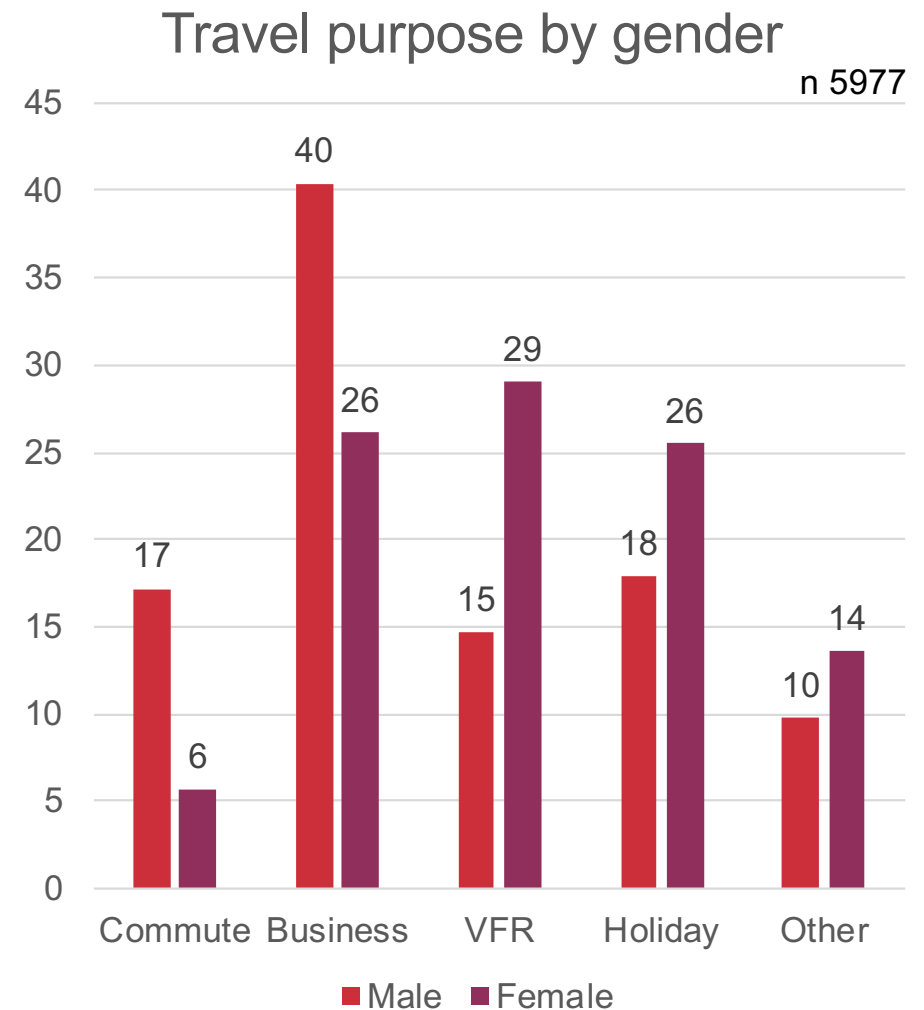
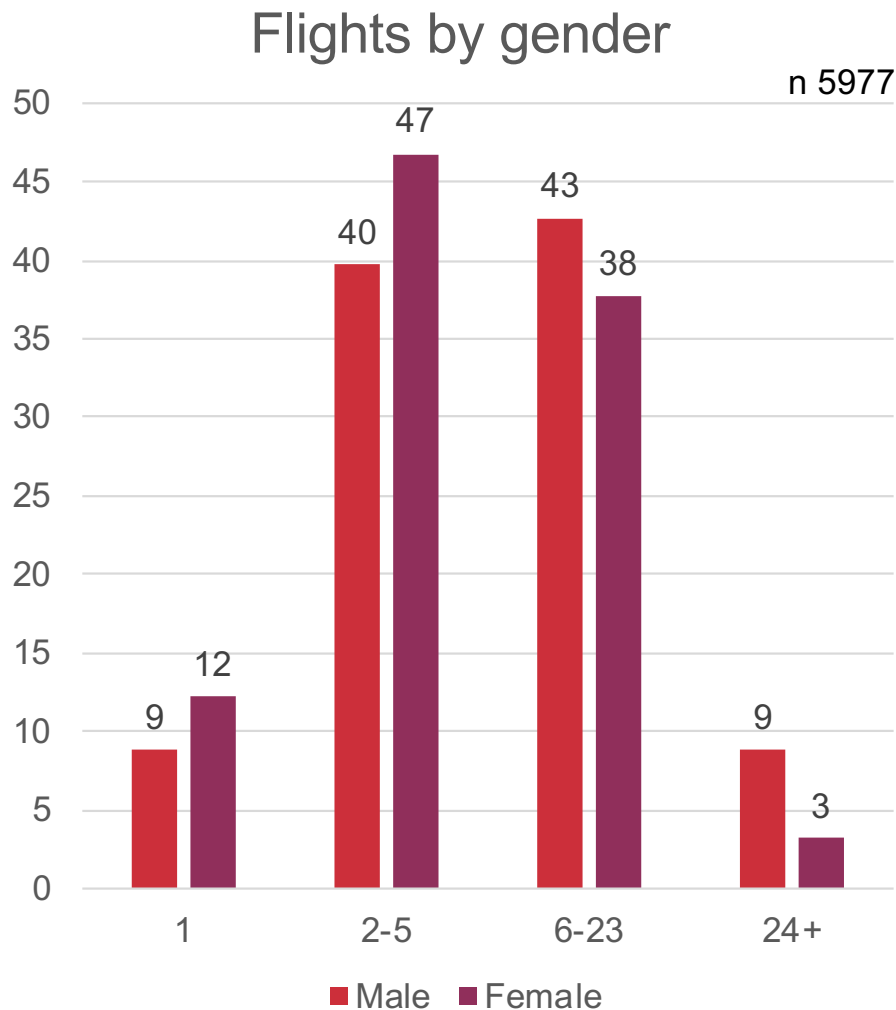


Travel purpose

n 6082



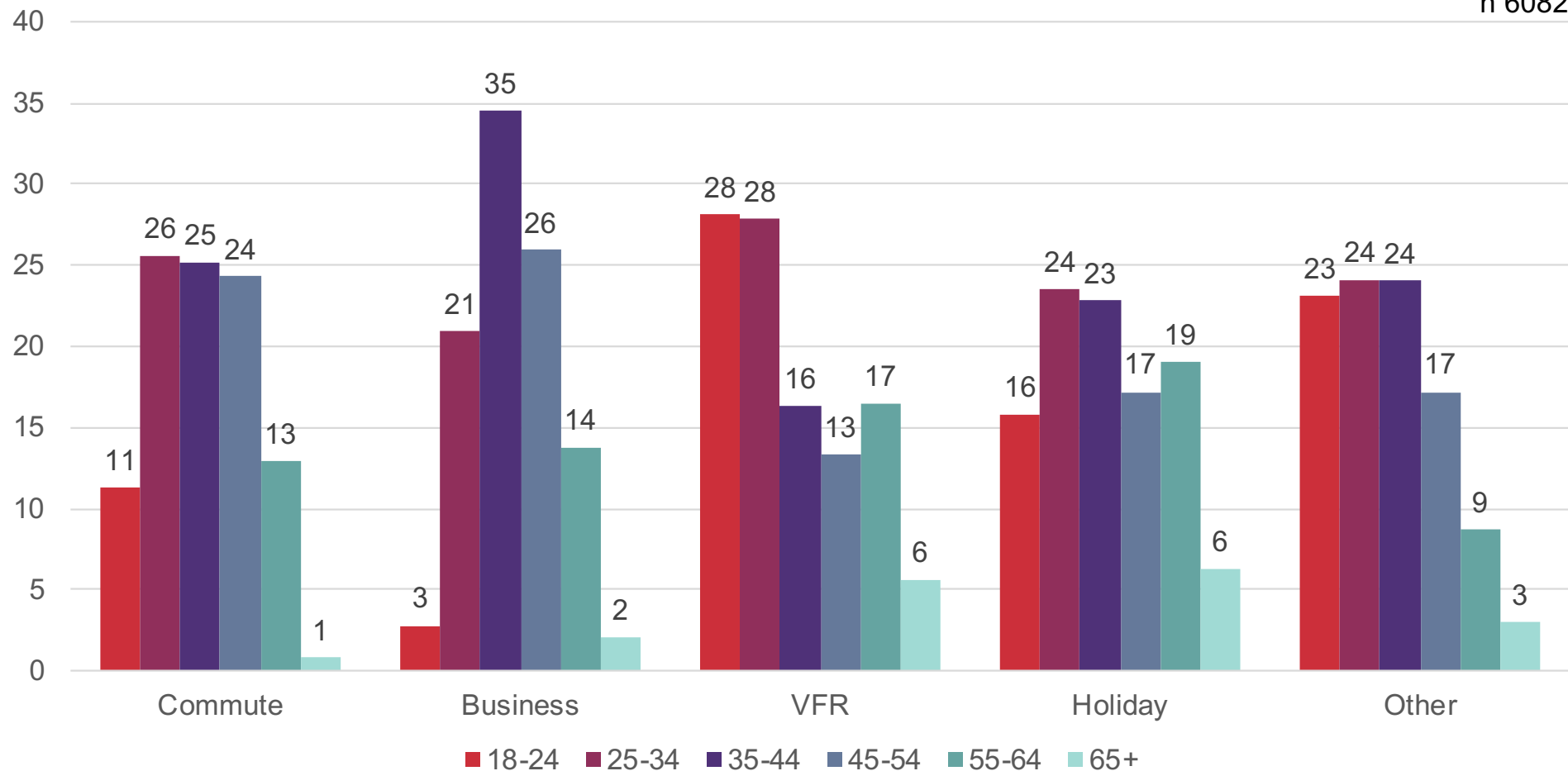
Highest propensity to fly among male travellers. Greater proportion of male versus female business travellers and commuters. Greater proportion of female versus male VFR and holiday/weekend travellers



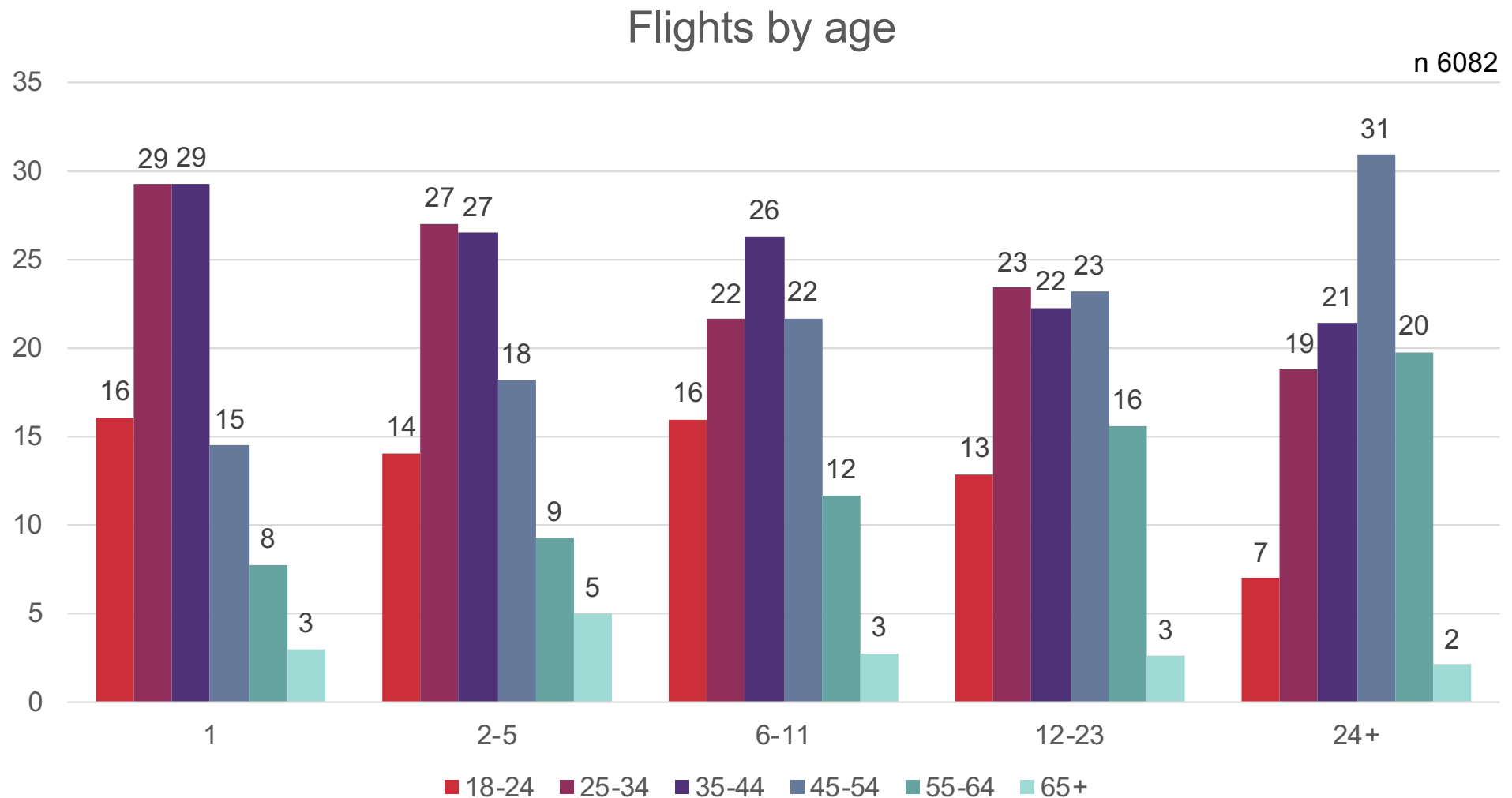
Greater proportion of middle-aged business travellers and commuters, younger VFR and other travellers, older holiday/weekend and VFR travellers

Travel purpose by age

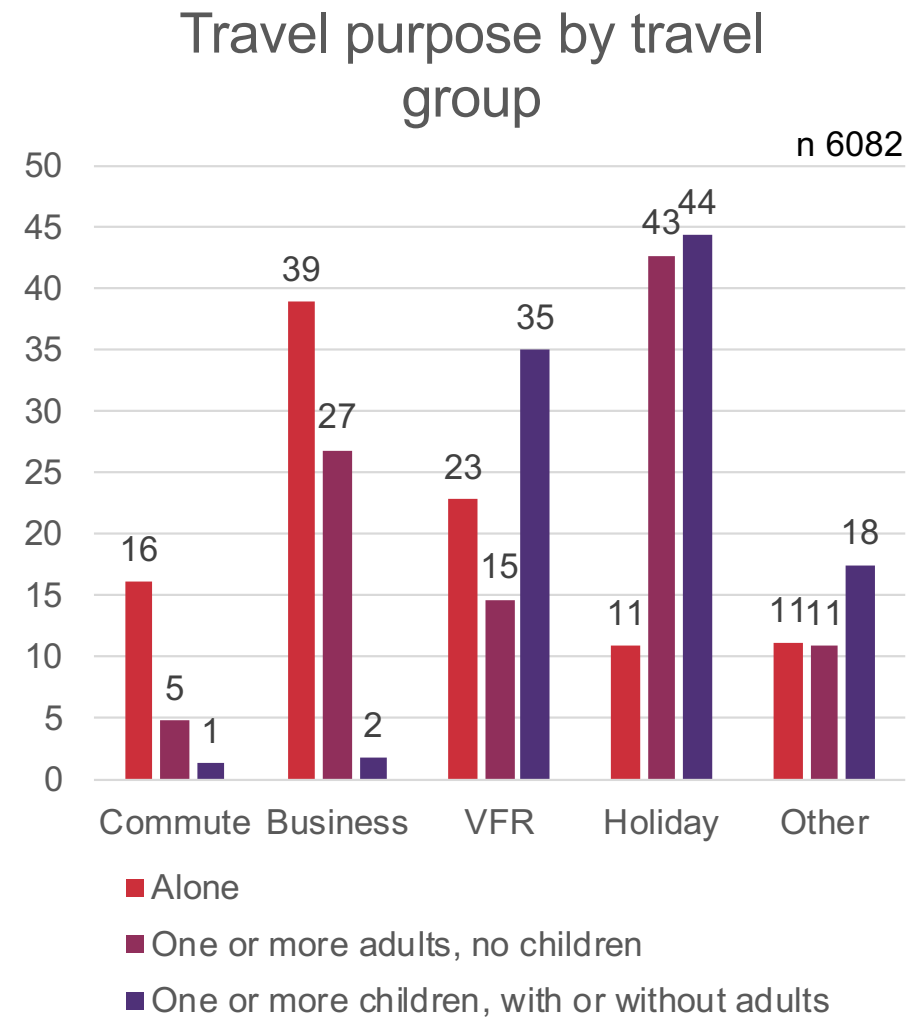
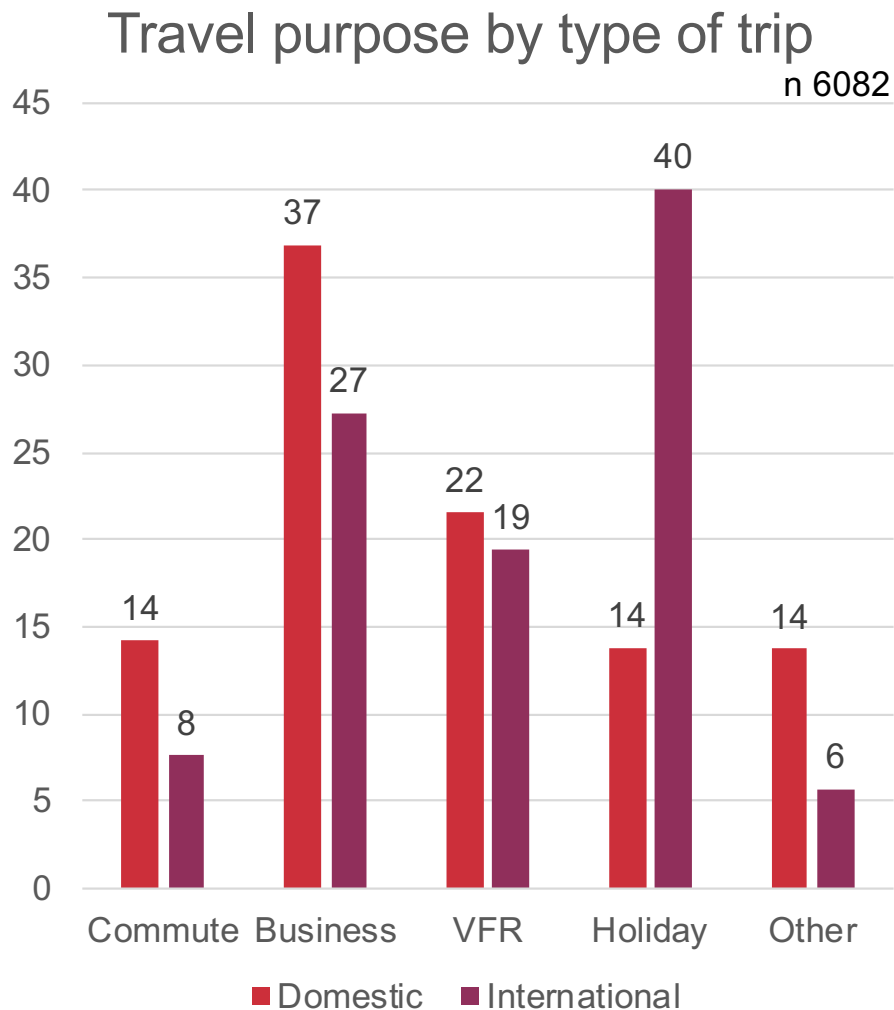
n 6082



Higher propensity to fly among middle-aged travellers. Lower propensity to fly among oldest and youngest age groups

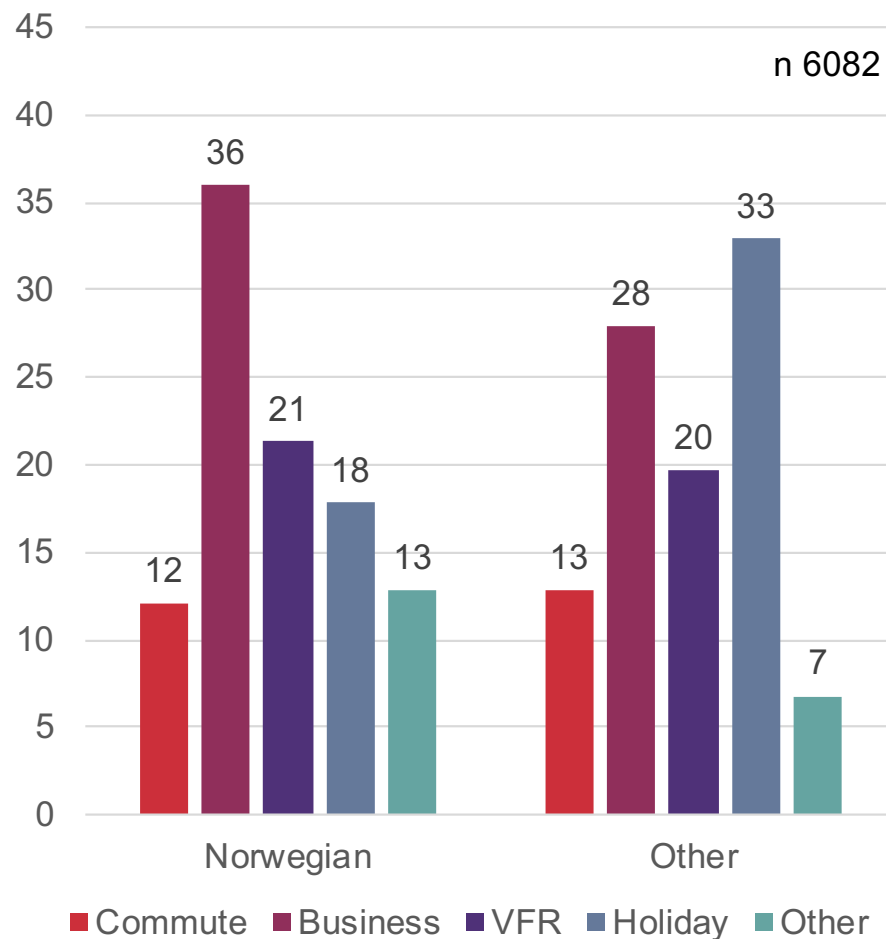


Greater proportion of business travellers and commuters travelling domestically and alone. Greater proportion of holiday/weekend travellers travelling internationally and with others

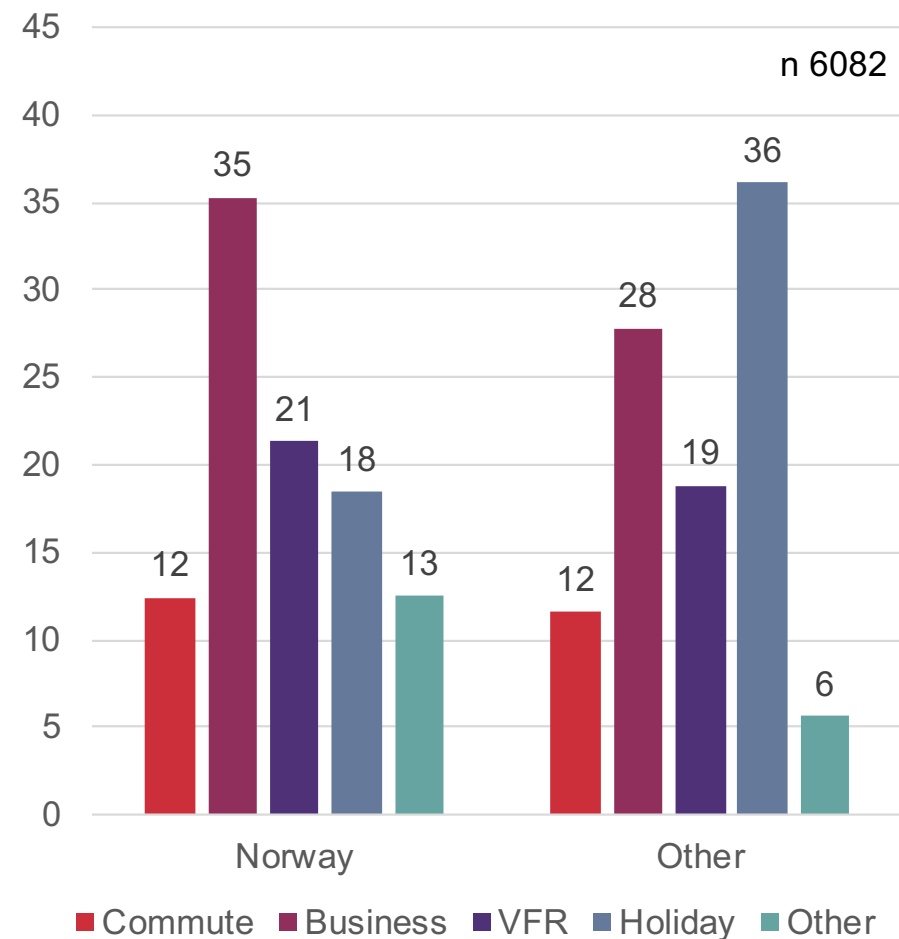


Greater proportion of business travellers that are Norwegian citizens or residents. Greater proportion of holiday/weekend travellers that are foreign

Travel purpose by nationality



Travel purpose by residency



PART III

Responses

«Imagine that you will be taking the exact same trip at some point during the next 12 months»

Pre-trip purchases

Question: Which products or services would you be interested in pre-ordering online from this airport? Select any.



Søk

Logg inn
eller bli medlem



Handlepose
Klikk & hent

Alle produkter

Inspirasjon & guider

Merker

Tilbud

Klikk & hent

Julen 2019

Me Tax Free & Me

Kvote & Kundeservice

Velg flyplass og butikk

Vis butikkvelger



Velg riktig flyplass og butikk for din reise

Ønsker du å handle ved avgang eller ankomst? Skal du reise utenlands eller innenlands? Velg riktig butikk før du bestiller.

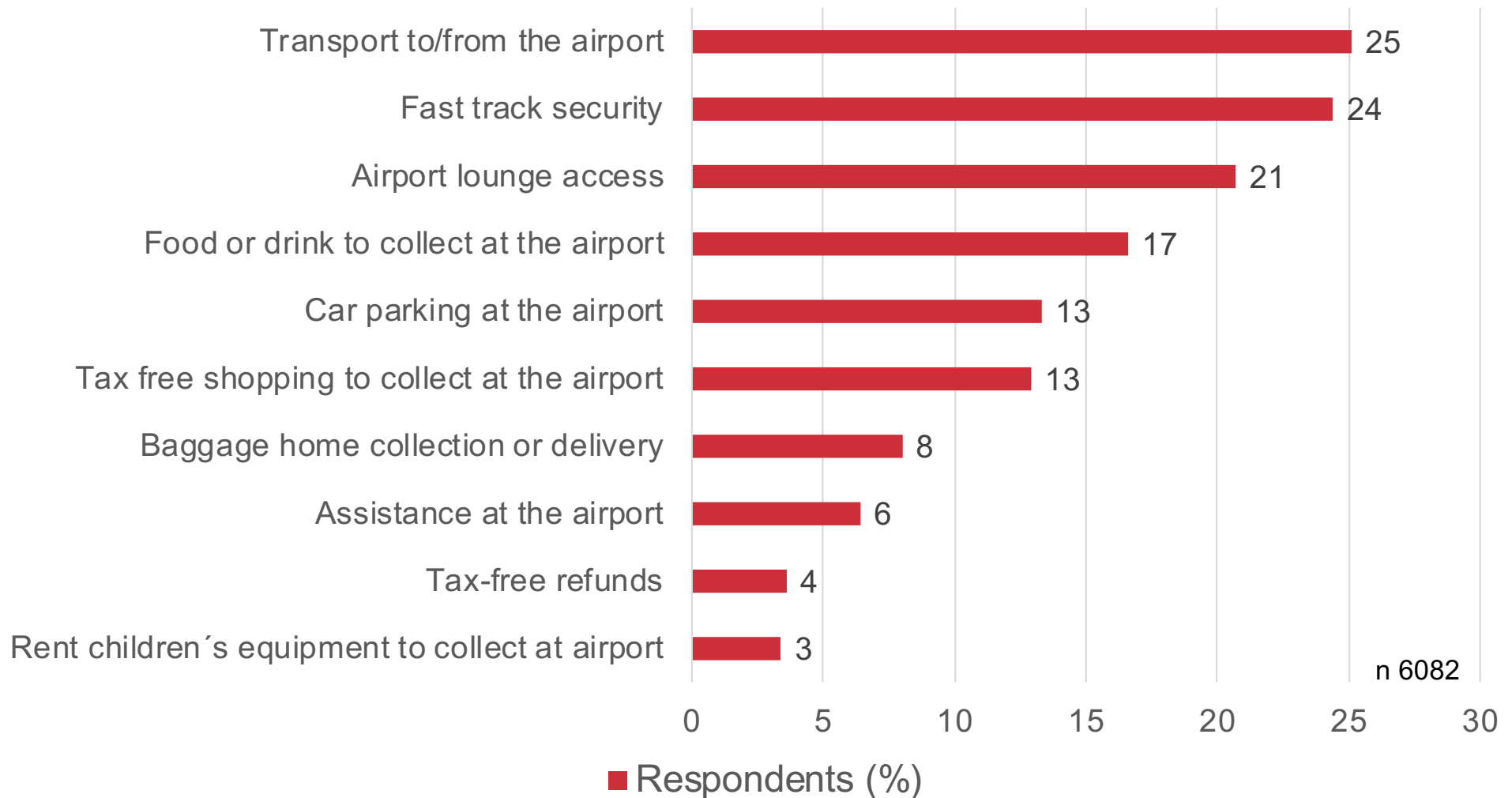


<https://www.tax-free.no/klikk-hent/>

60%

would be interested in pre-ordering
something online from their airport

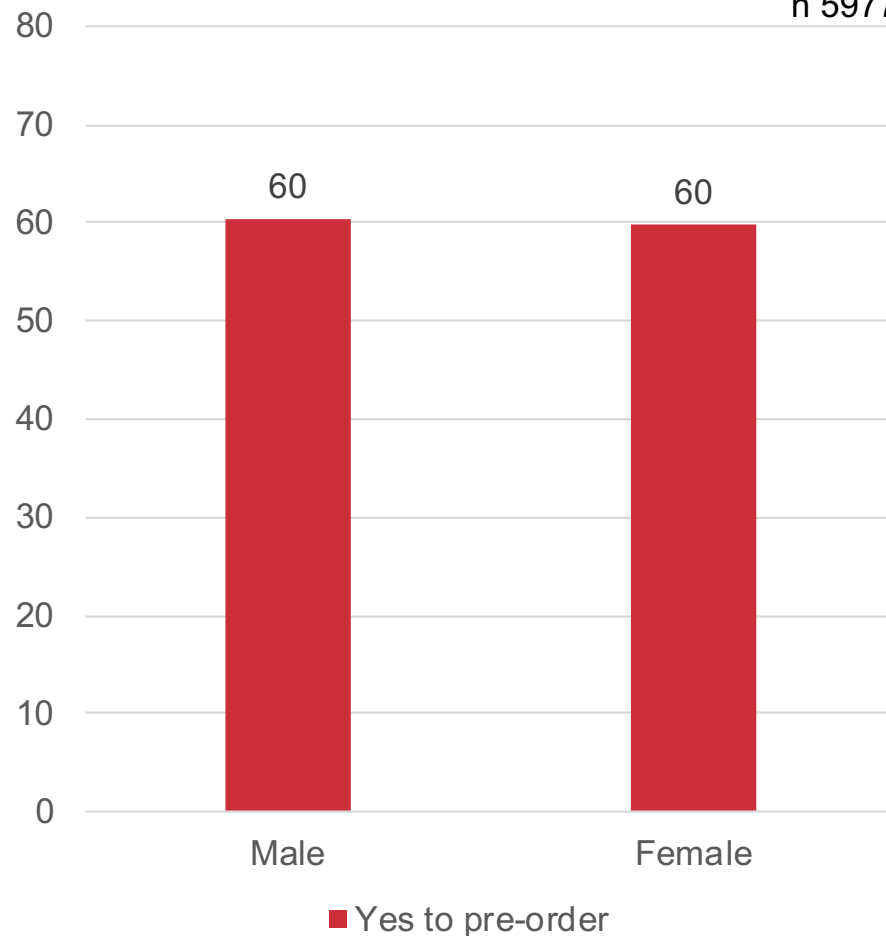
25% of respondents would be interested in pre-ordering transport to/from the airport. Pre-ordering fast track security and airport lounge access also popular options



No difference in pre-order interest by gender. However, younger travellers are more interested than older travellers

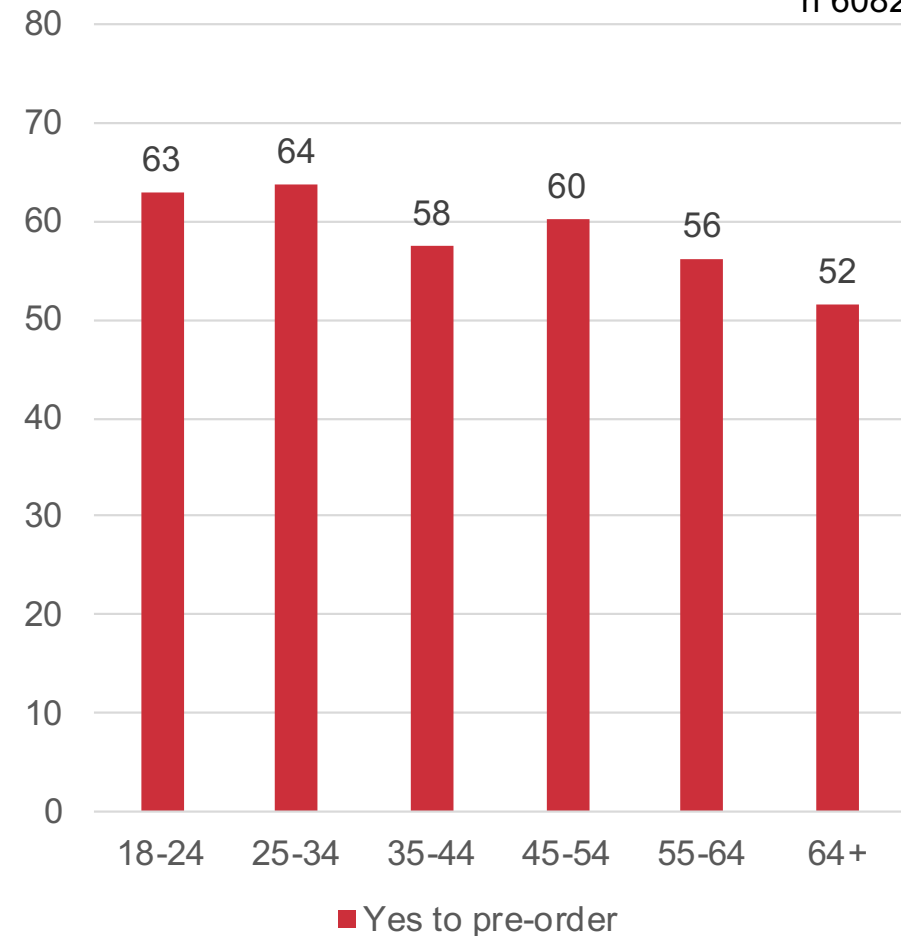
Pre-order interest by gender

n 5977



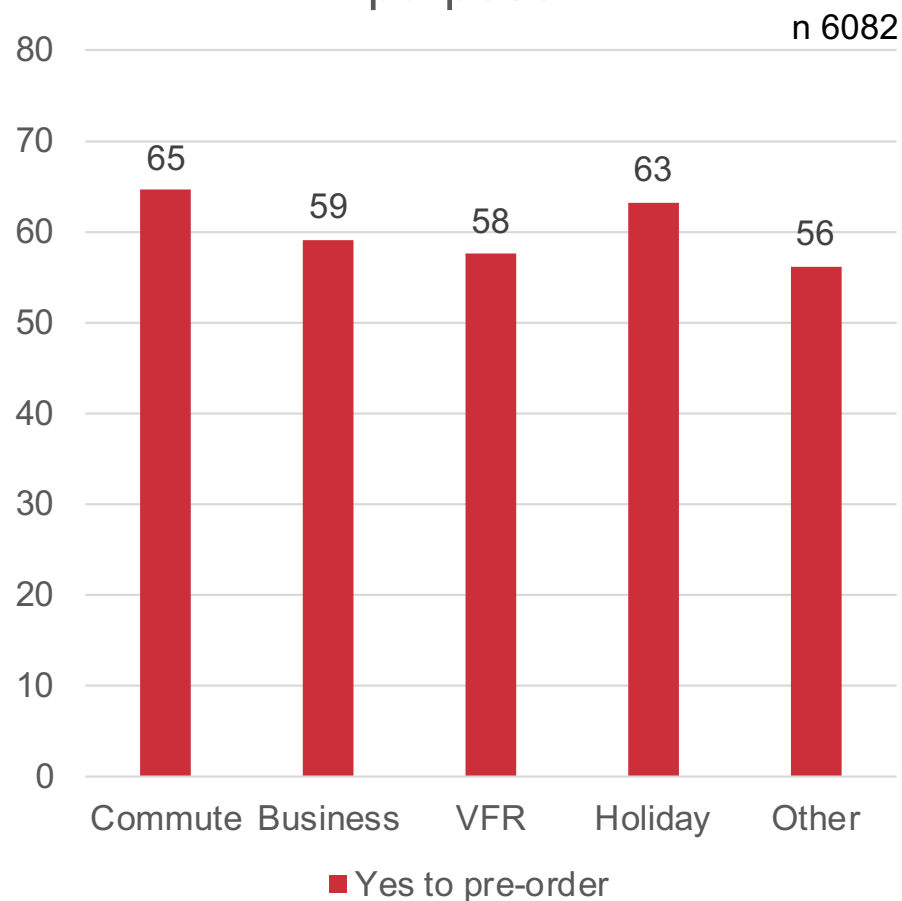
Pre-order interest by age

n 6082

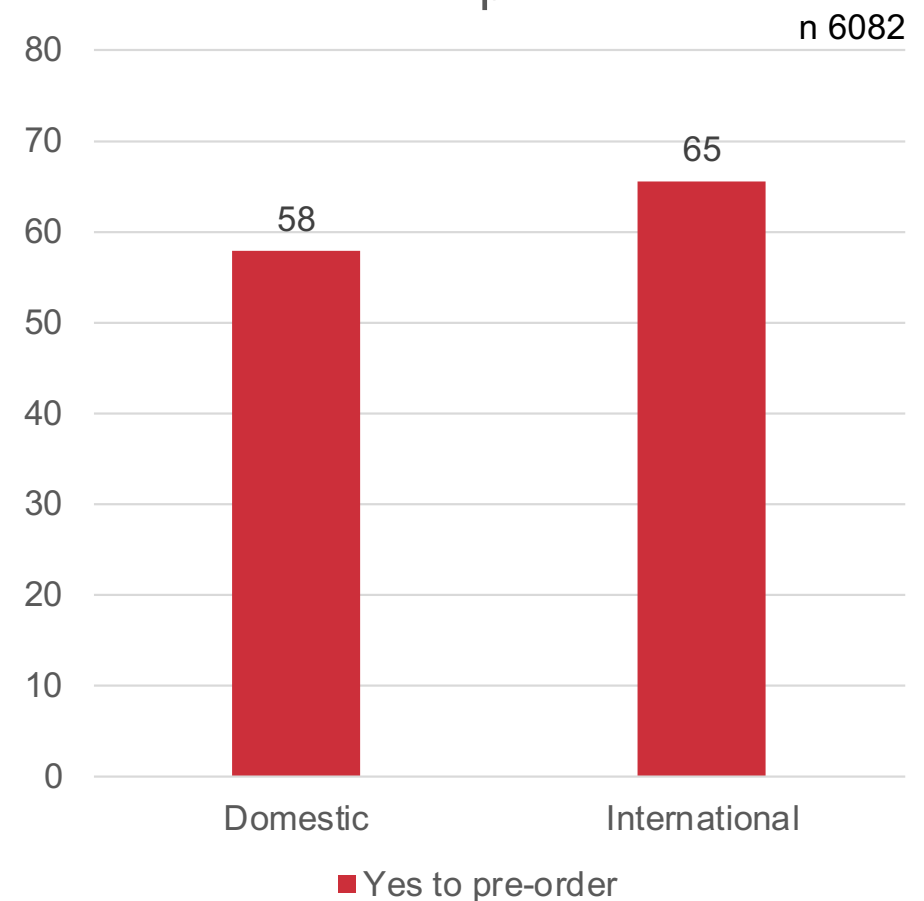


Commuters, holiday/weekend travellers and those on international trips are most interested

Pre-order interest by travel purpose

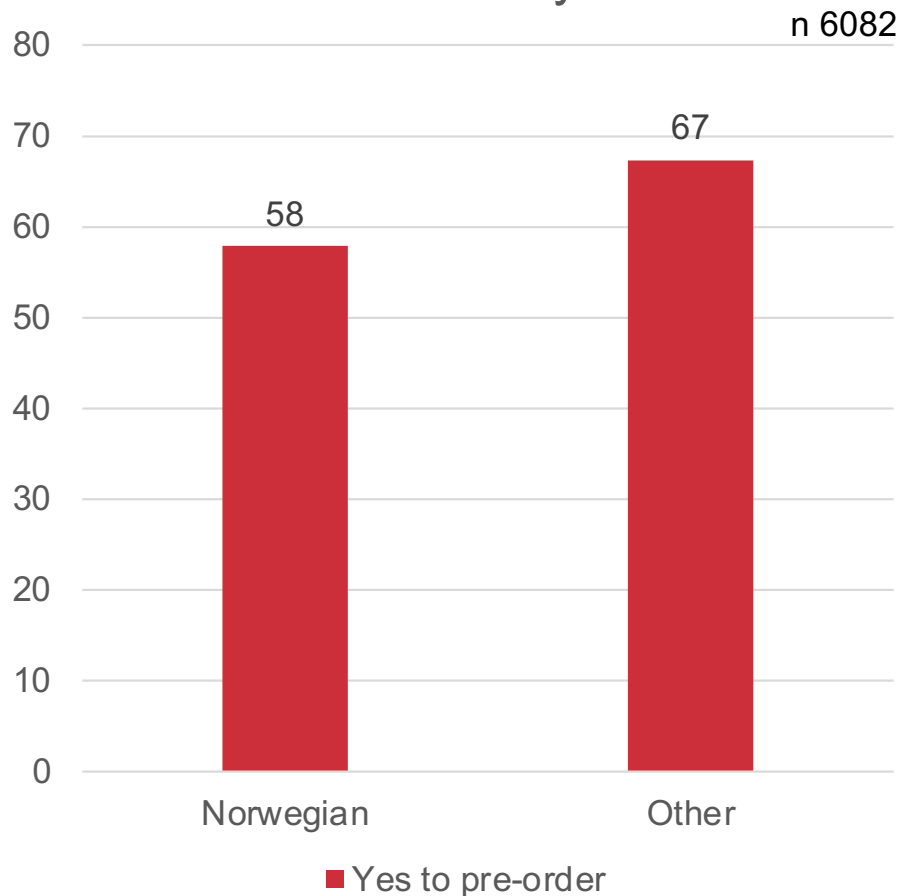


Pre-order interest by type of trip

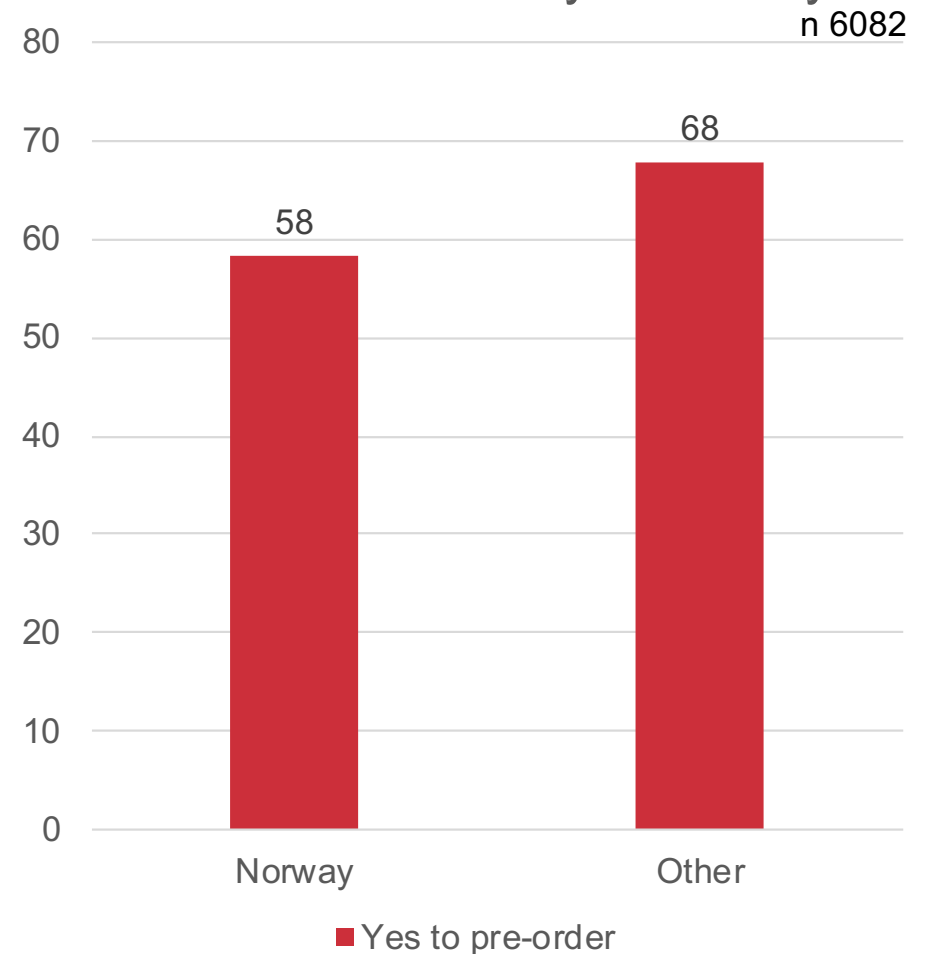


Norwegian citizens and residents are more interested than foreign citizens and residents

Pre-order interest by nationality



Pre-order interest by residency



Boarding pass

Question: How would you prefer to access your boarding pass? Select one.

The death of the printed boarding pass and other ways travel has changed in the past 10 years

Ashley Rossi | SmarterTravel.com

Published 7:00 AM EST Dec 23, 2019

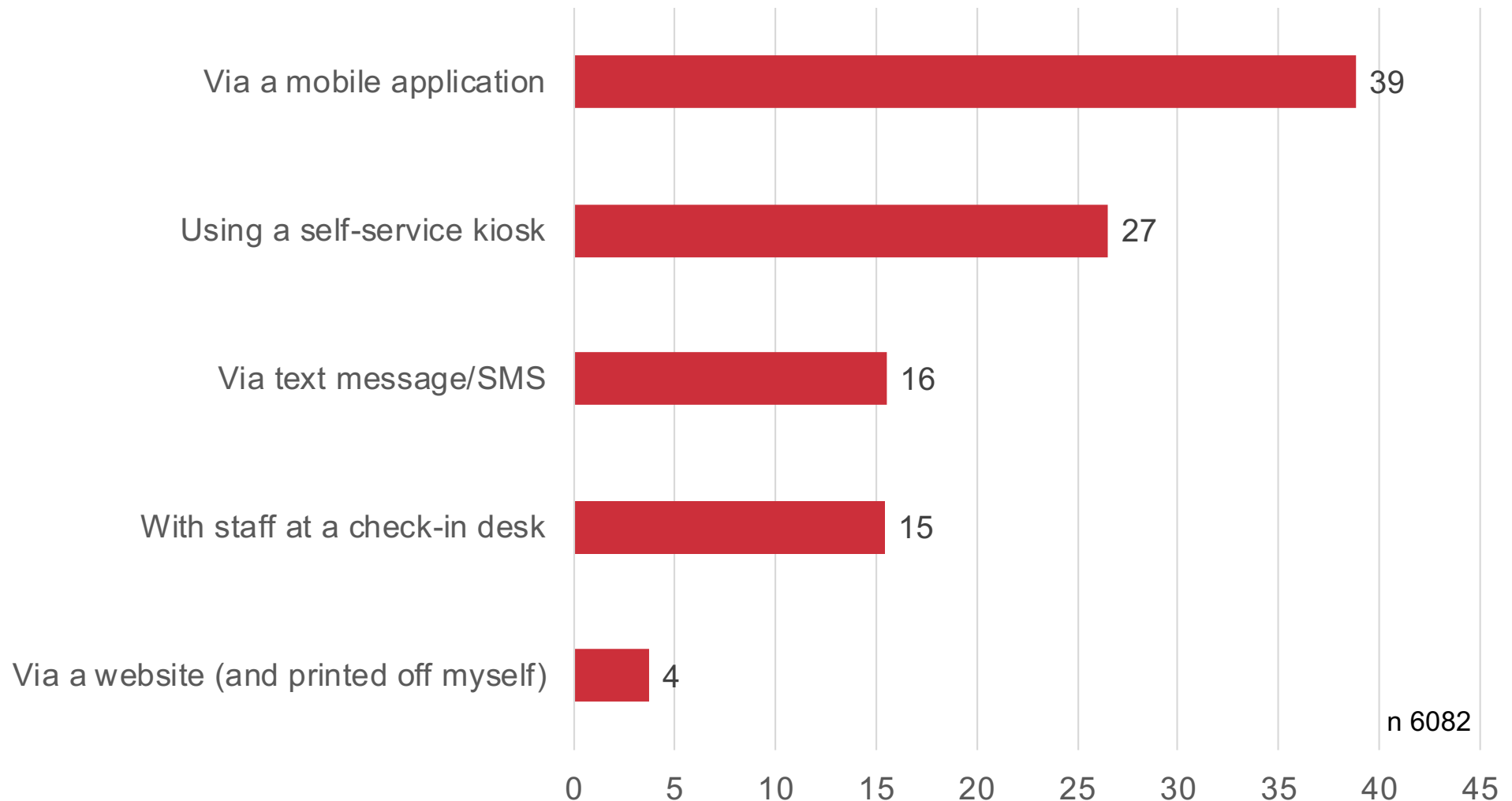
As we head into a new decade, we reflect on the many changes that have happened across the world because of technology, climate change and other shifts in lifestyles.

The world of travel is no different, and Smarter Travel has put together a list of incredible events and momentous changes in the travel world since 2010.

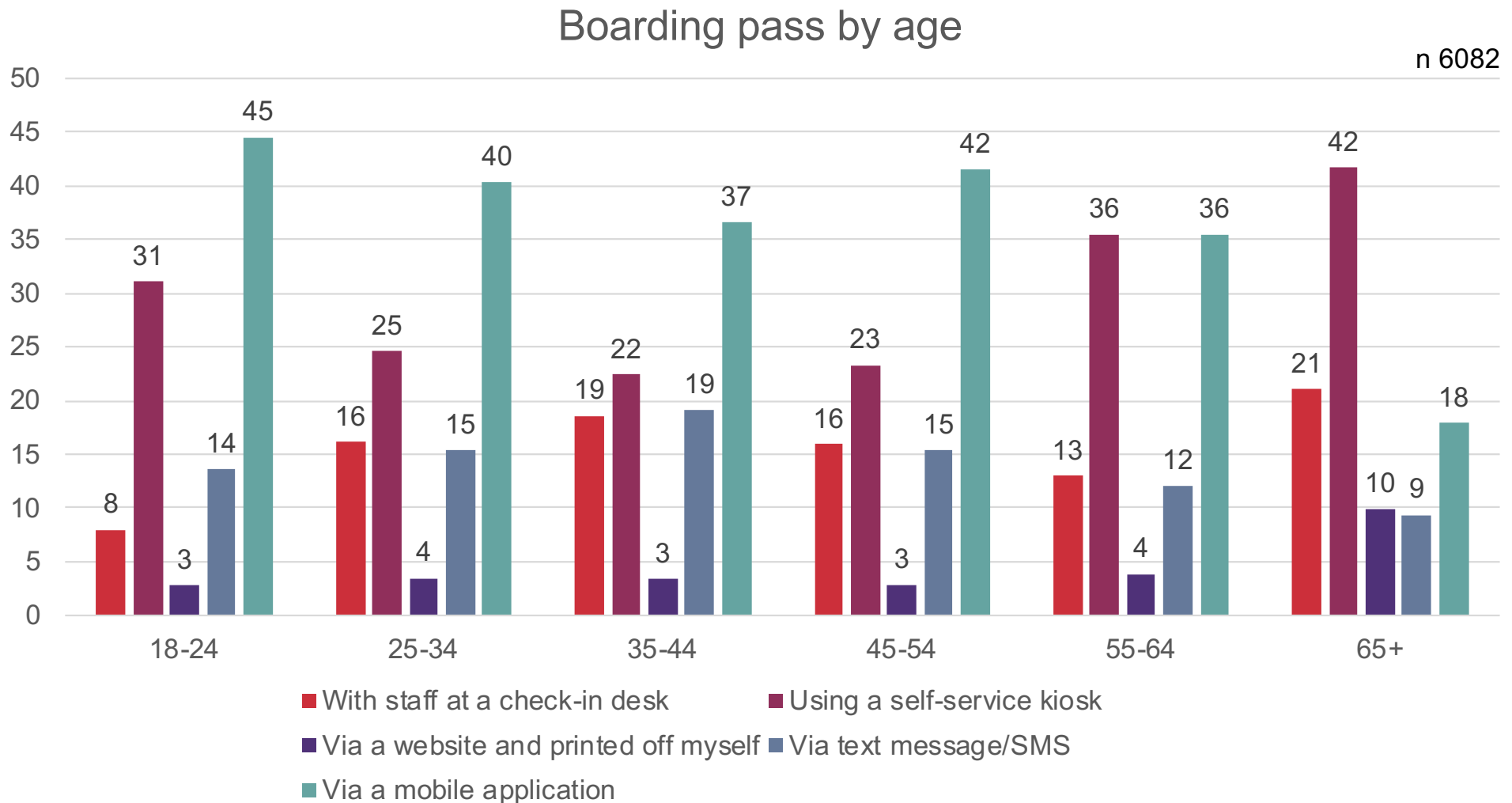
2010: Death of the printed boarding pass

Mobile boarding passes became the norm in 2010 when United Airlines starting implementing them.

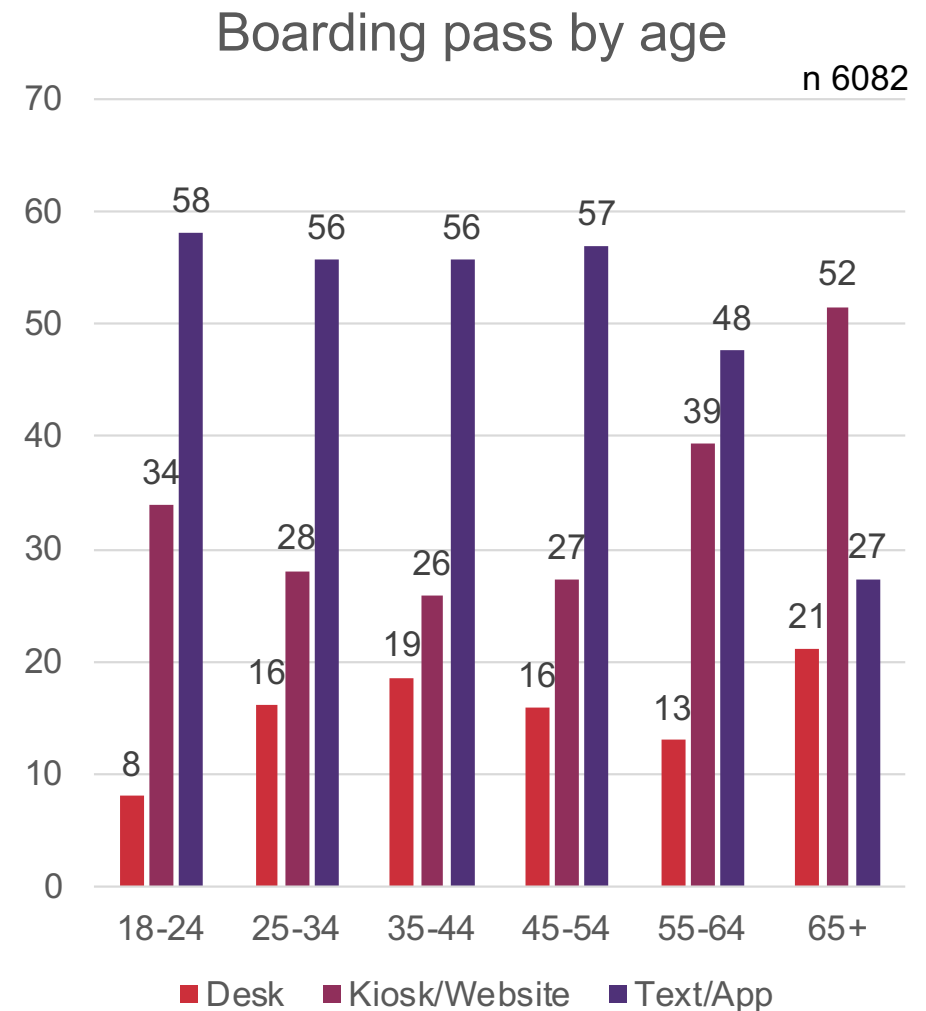
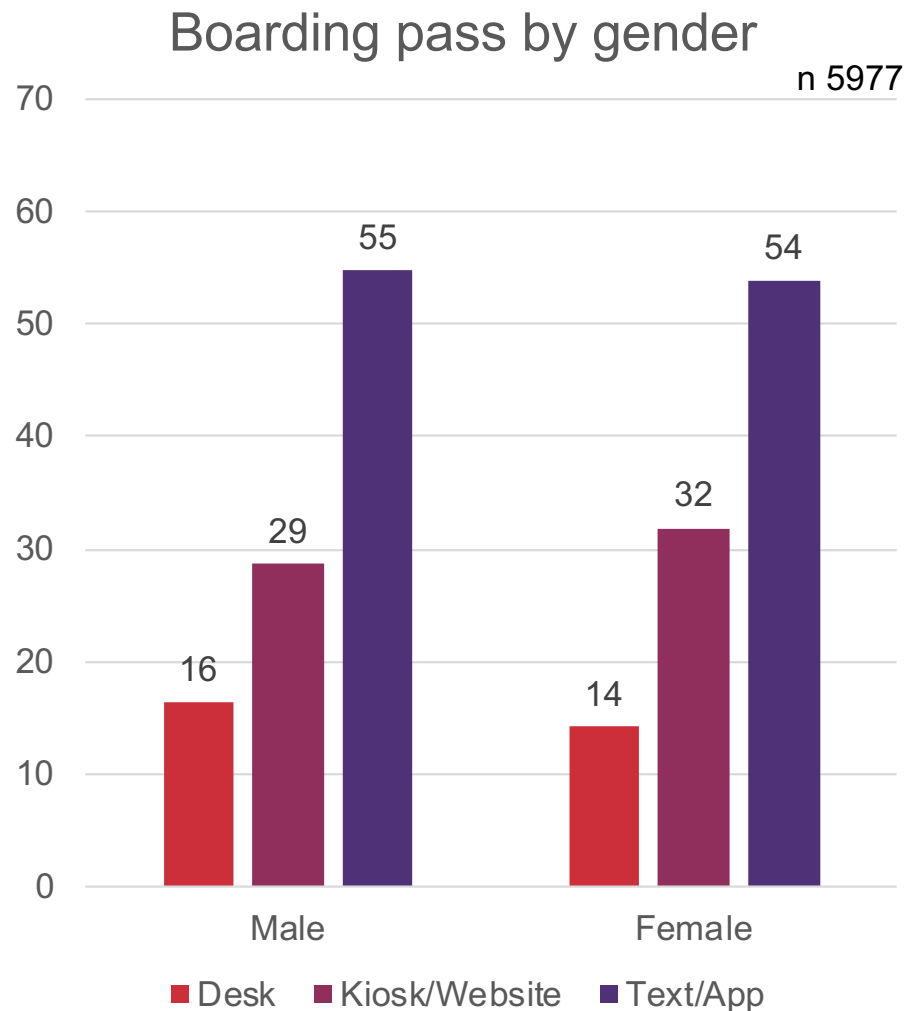
39% of all respondents would prefer to access their boarding pass via a mobile application. 55% prefer to access it electronically (via an app or text/SMS) but 46% still prefer a paper pass (from a kiosk, check-in desk or website)



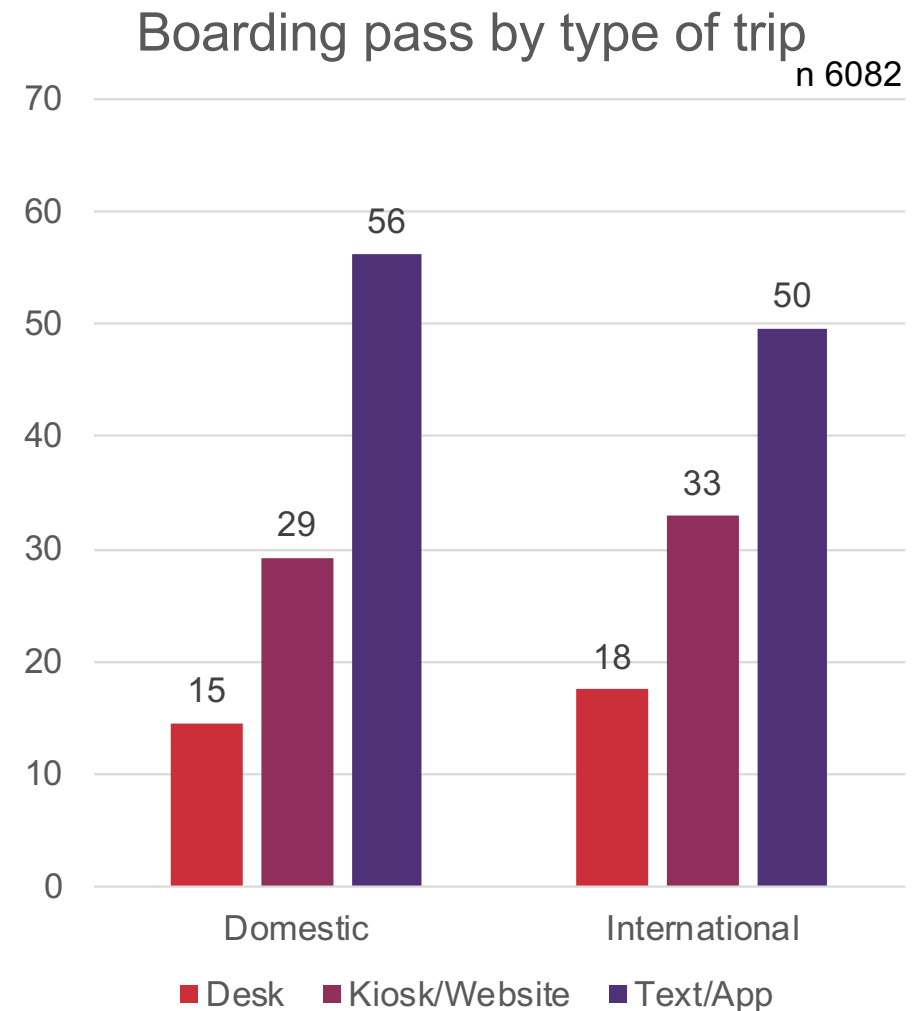
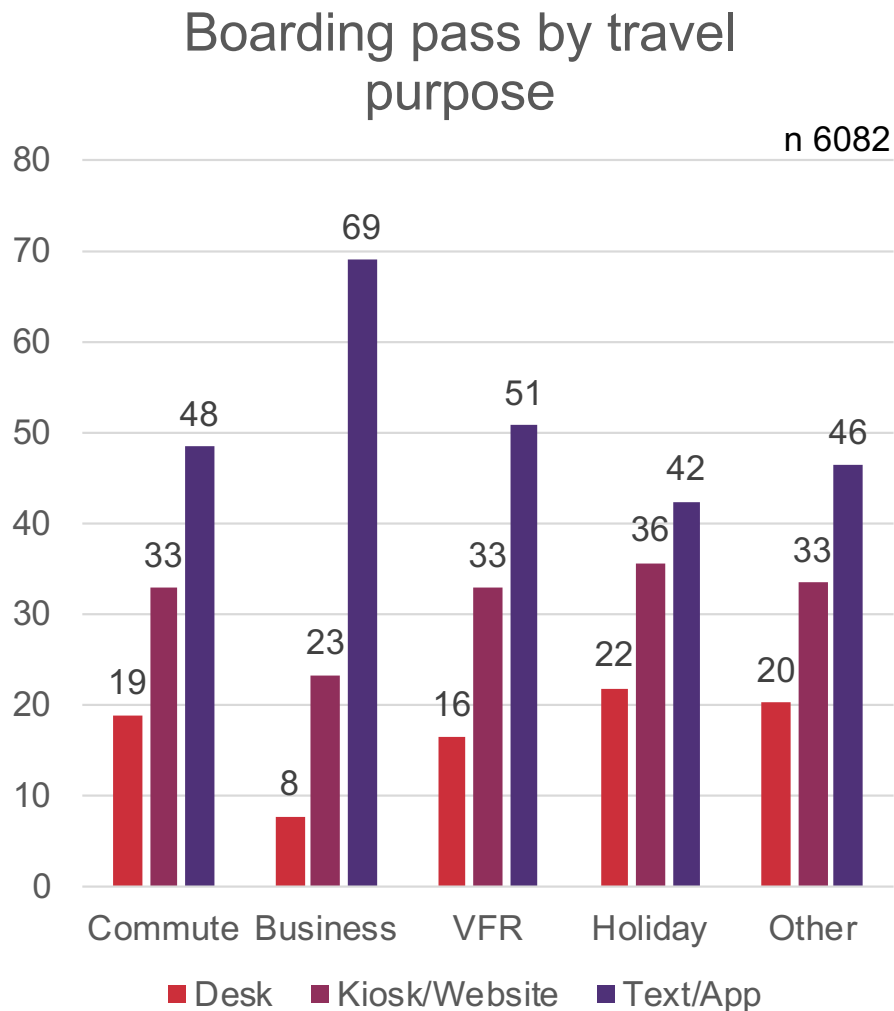
Boarding pass on a mobile application is the preferred choice for all age groups followed by self-service kiosk, except 65+ who prefer self-service kiosk followed by check-in desk



Electronic boarding pass (via an app or text/SMS) is preferred to a paper pass (via a kiosk, desk or website). This is the case for both genders and all age groups except 55-64 and 65+ who prefer a paper pass



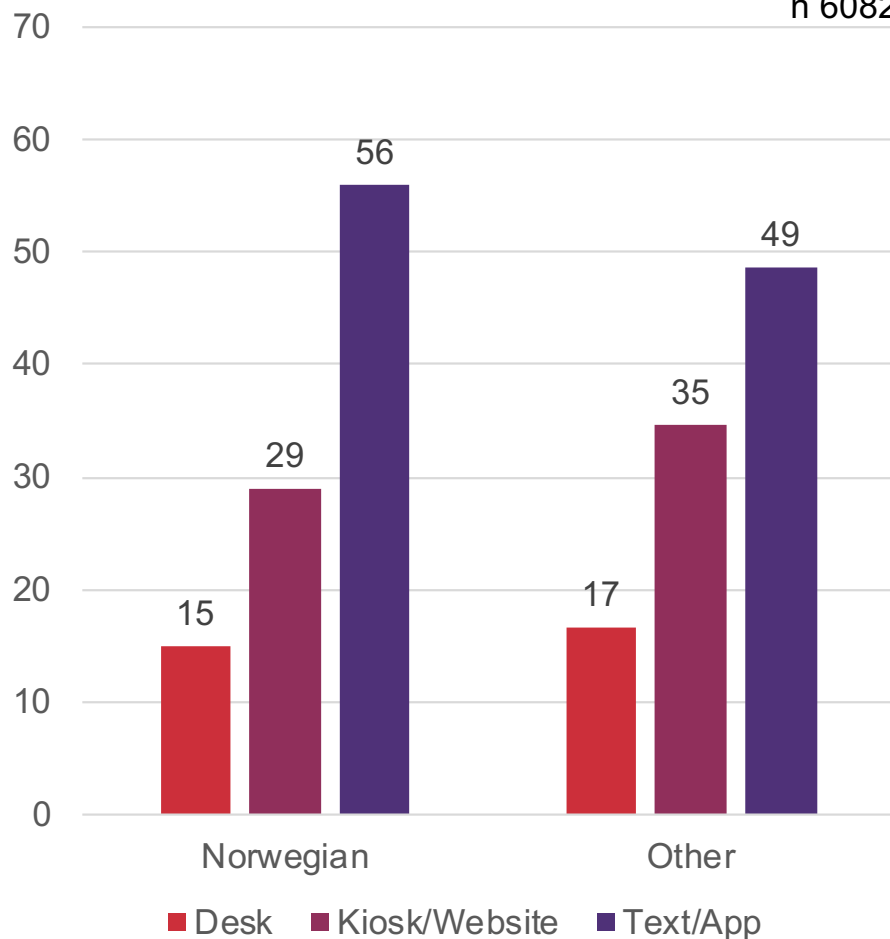
Business travellers and those travelling domestically are most in favour of accessing their boarding pass electronically



Norwegian citizens and residents are most in favour of accessing their boarding pass via a mobile device

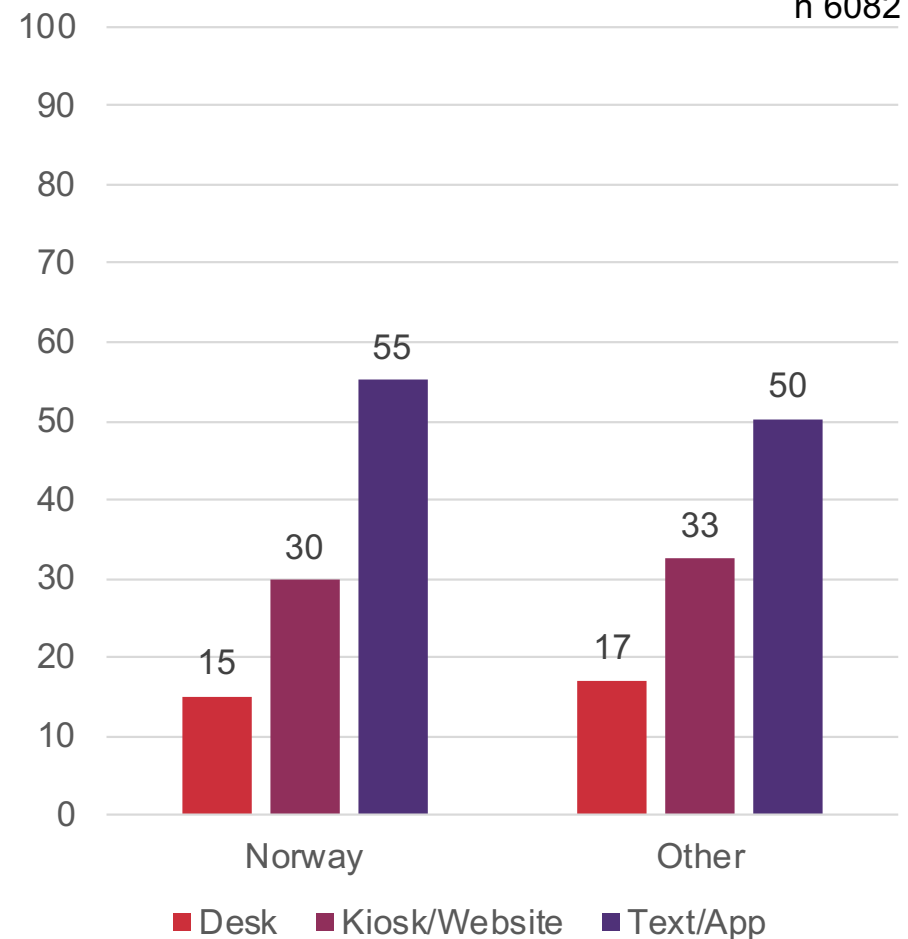
Boarding pass by nationality

n 6082



Boarding pass by residency

n 6082



Personal Identification (ID)

Question: What type of personal identification would you prefer to use at each check-point? Select one.



[Home](#) > [Programs](#) > [Passenger Experience](#)

One ID



One ID introduces an opportunity for the passenger to further streamline their journey with a document-free process based on identity

management and biometric recognition. Passengers will be able to identify themselves at each airport touchpoint through a simple biometric recognition. The objective is to achieve a truly interoperable system coordination between airports, airlines and governments.

<https://www.iata.org/en/programs/passenger/one-id/>



https://www.youtube.com/watch?v=z1C6da4hTCk&feature=emb_logo



32%

Paper boarding pass combined with my passport or other ID card if necessary



52%

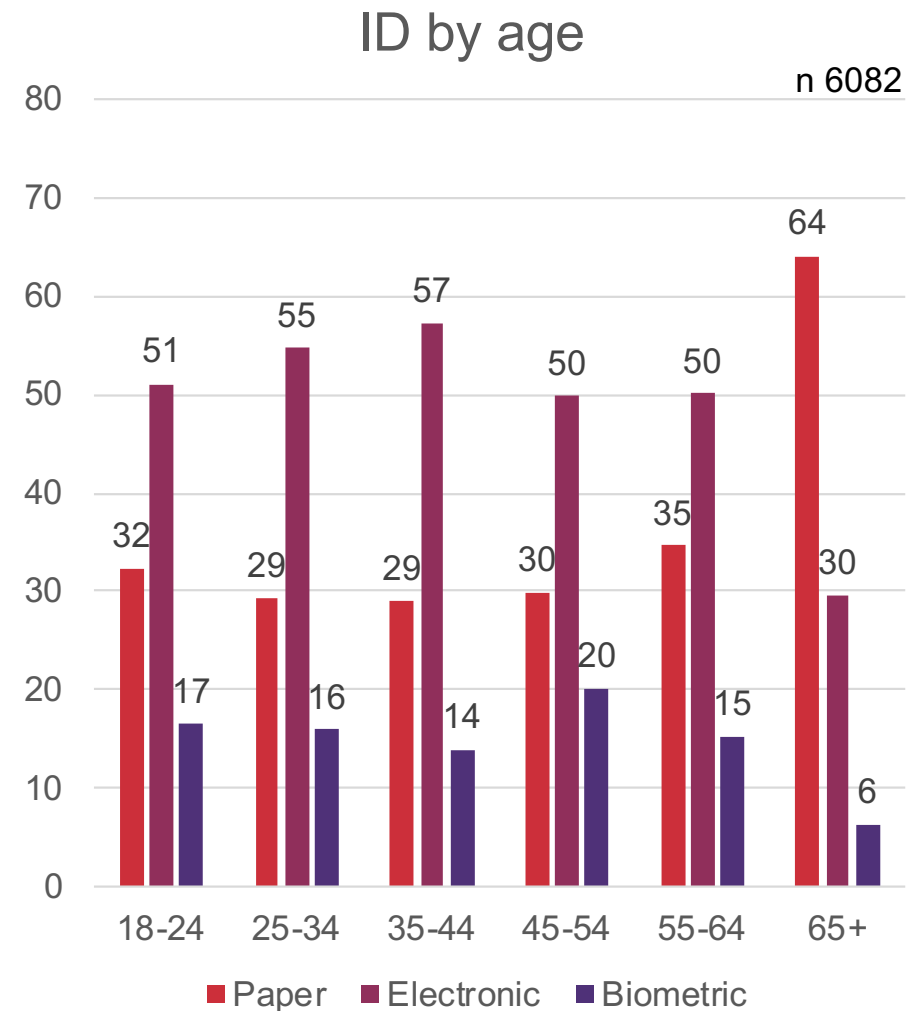
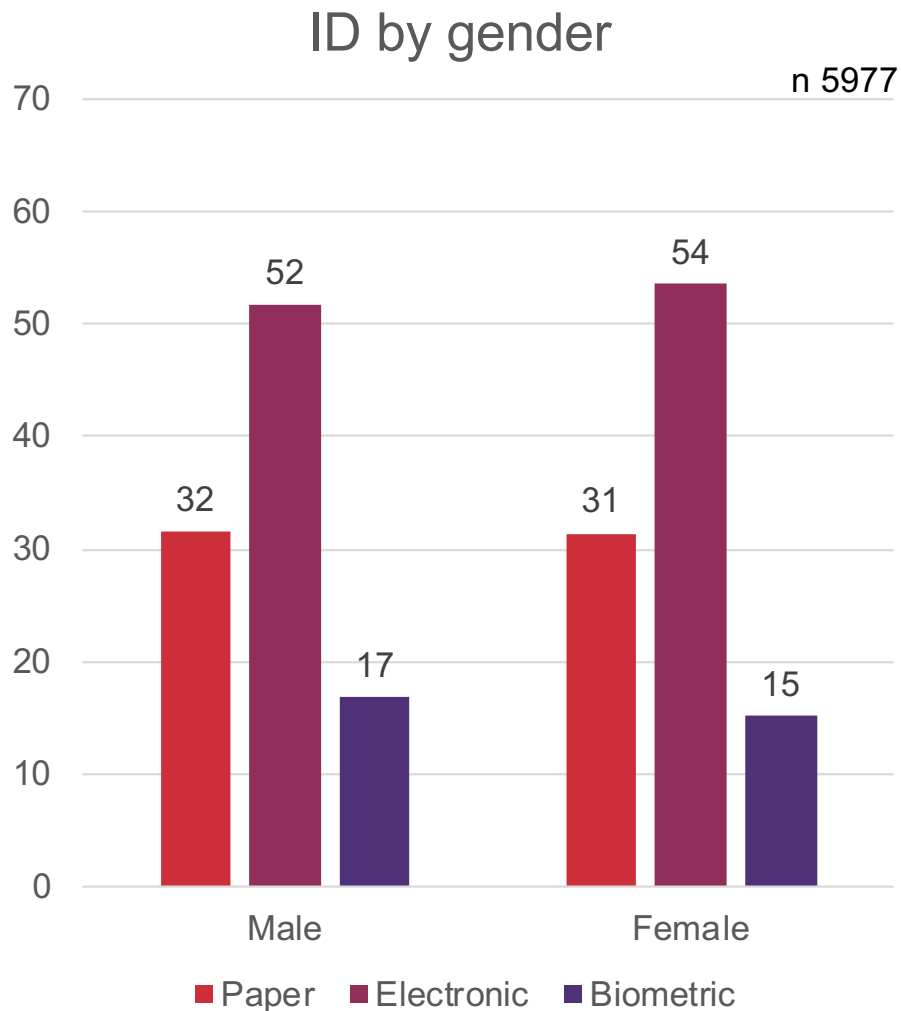
Electronic boarding pass (e.g. on a mobile device, frequent flyer card or airline smart pass) combined with my passport or other ID card if necessary



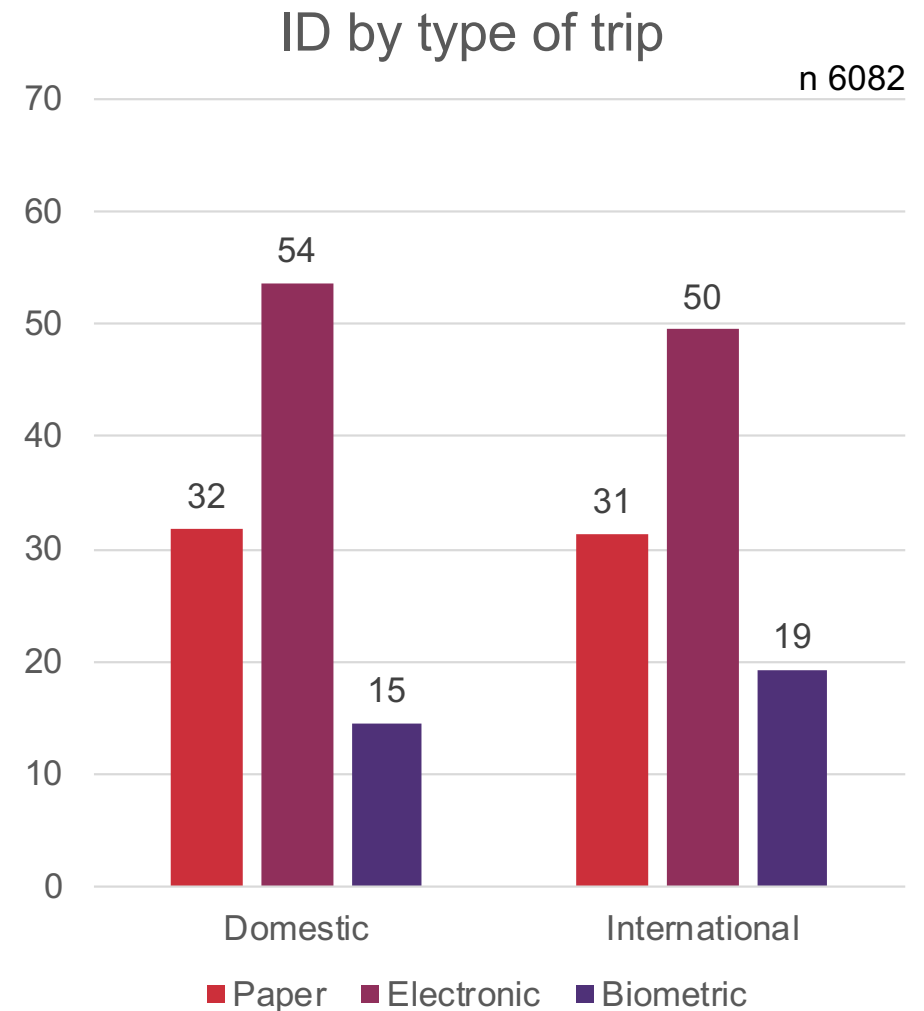
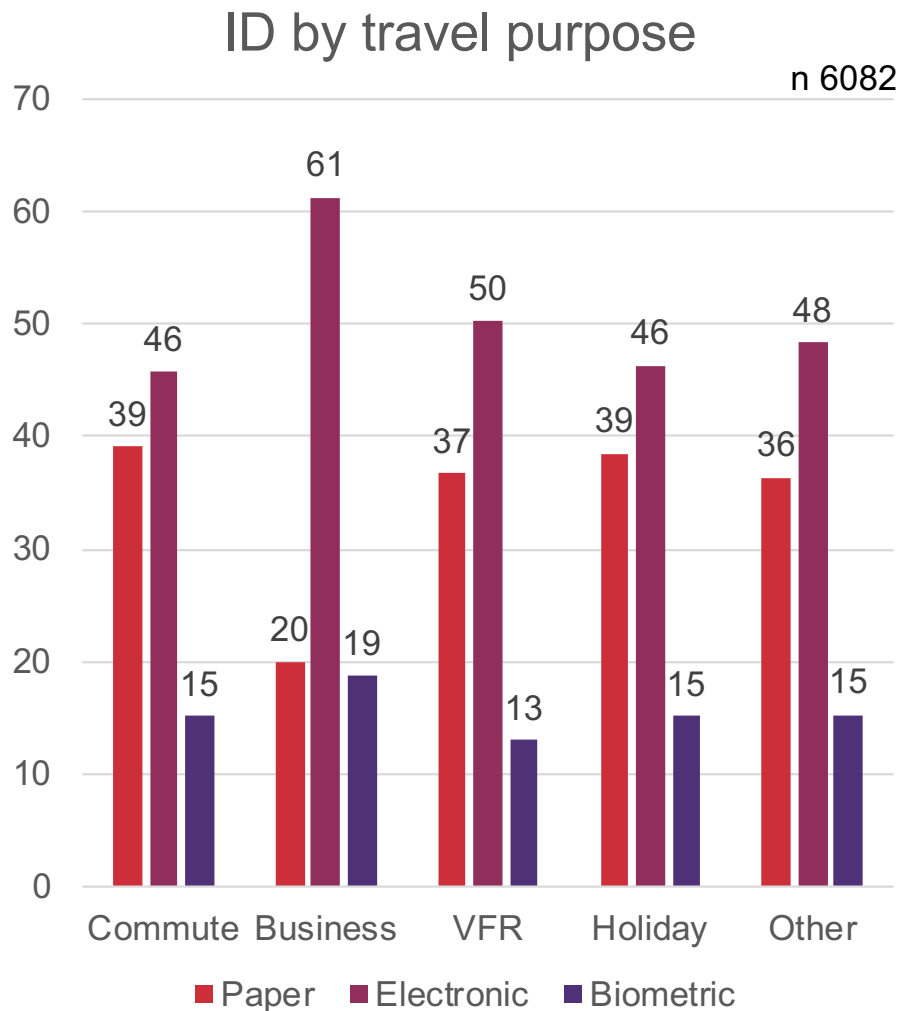
16%

Biometric identification (e.g. pre-register my facial and travel details so that I can then pass each check-point by scanning my face **instead** of using a boarding pass, passport or other ID card)

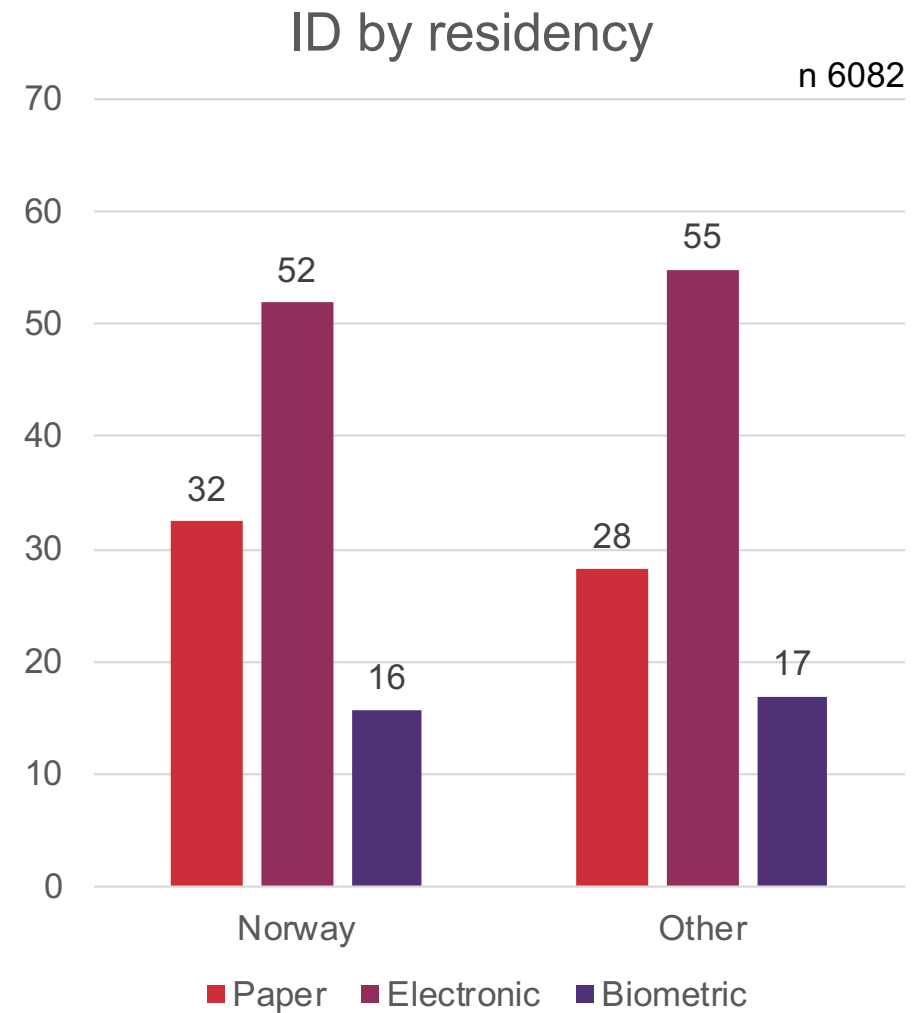
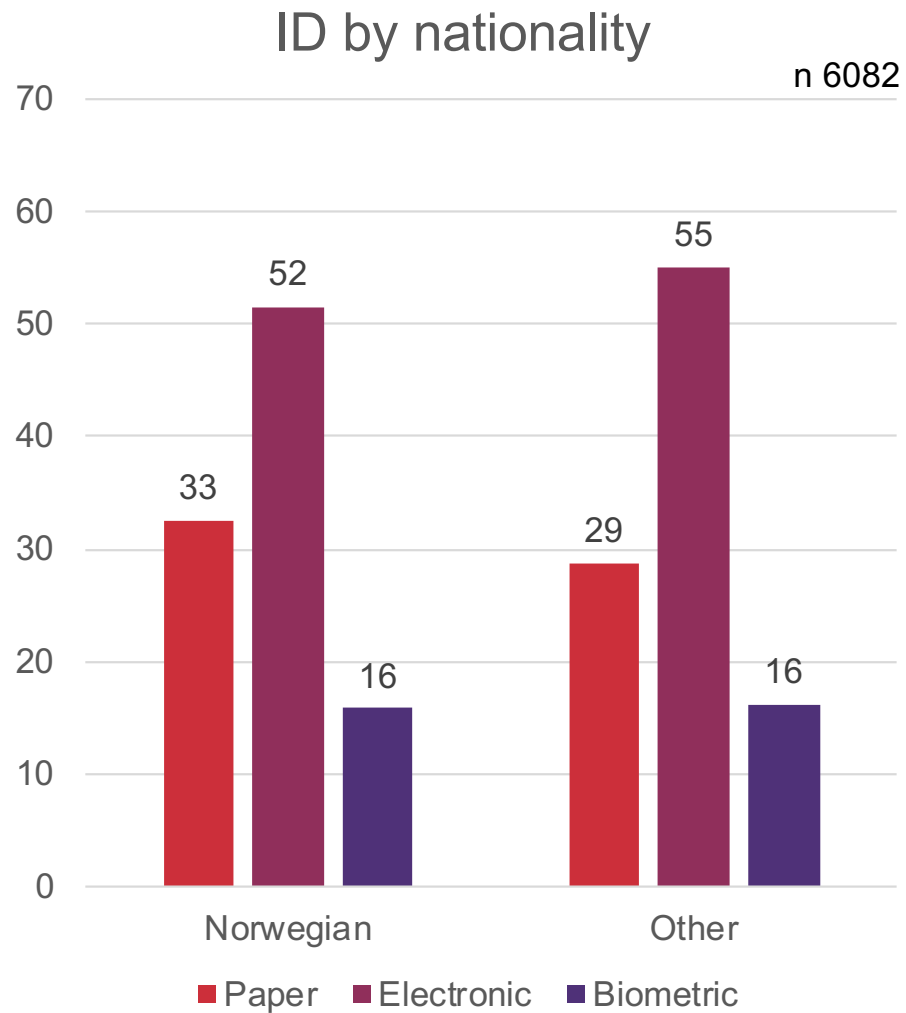
No difference in ID preference by gender or age except for those aged 65+ who prefer paper versus electronic or biometric options



Business travellers are most in favour of electronic or biometric ID options. International travellers are in more favour of biometric options compared to domestic travellers



Little variation by nationality or residency



Bag tag and drop

Questions:

Would you travel with checked-in baggage? Select one. If yes:

What type of «tag» would you prefer to use to check your baggage in? Select one.

How would you prefer to «drop» your baggage? Select one.

69%

would travel with checked-in
baggage

**7% with outsize items &/or more than one bag each*

Her får Torbjørn den aller første digital bagasjelappen



VIGRA, MØRE OG ROMSDAL (TV 2) Hvert år skrives det ut tre milliarder bagasjelapper. En ny norsk oppfinnelse har ambisjoner om å gjøre disse bagasjelappene helt overflødig.

Arne Rovick

06.11.2018 (Oppdatert: 06.11.2018)

<https://www.tv2.no/a/10195784/>



bagID GO Launch film



Watch later



Share



MORE VIDEOS



0:02 / 2:24

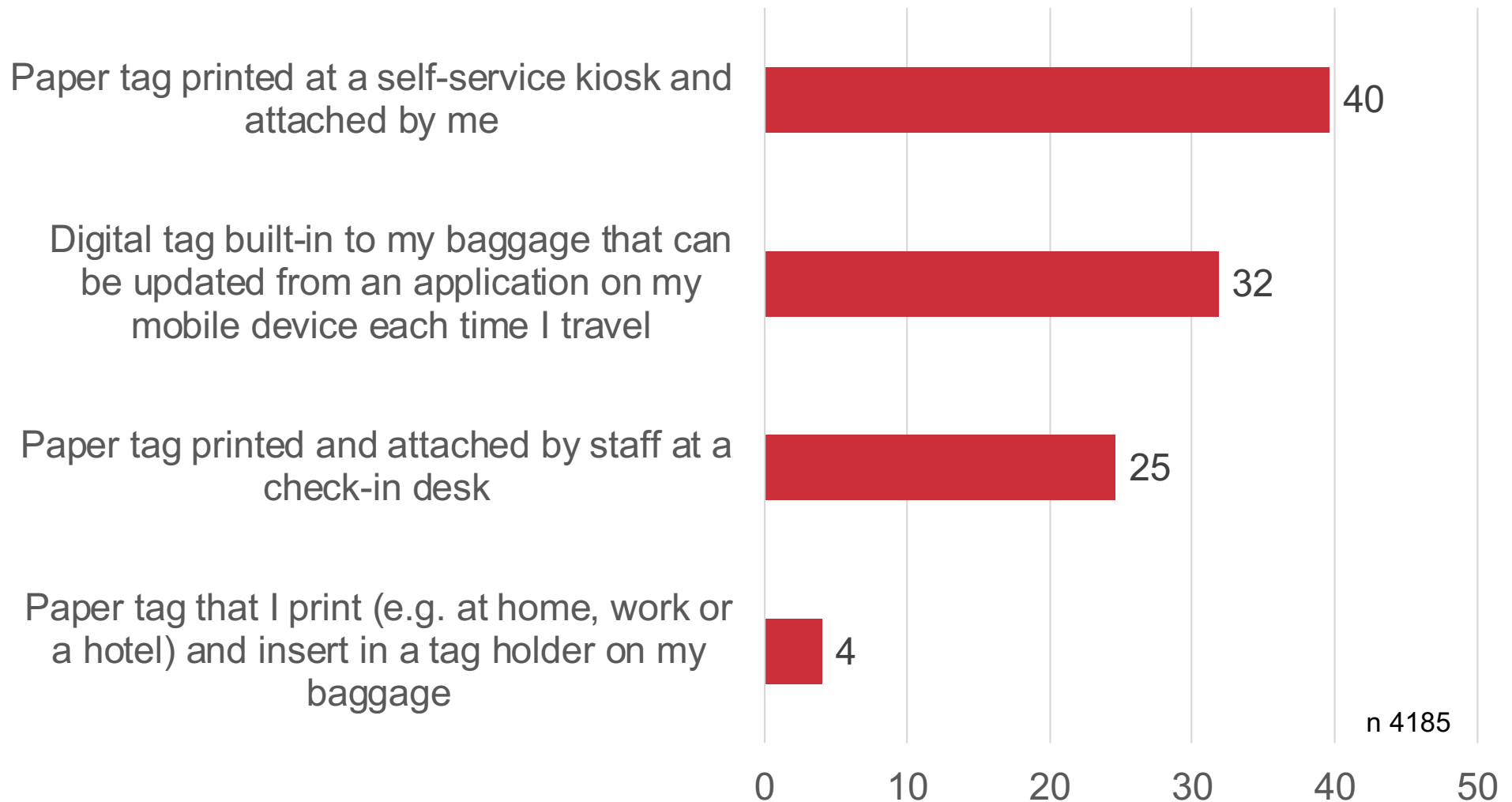


YouTube

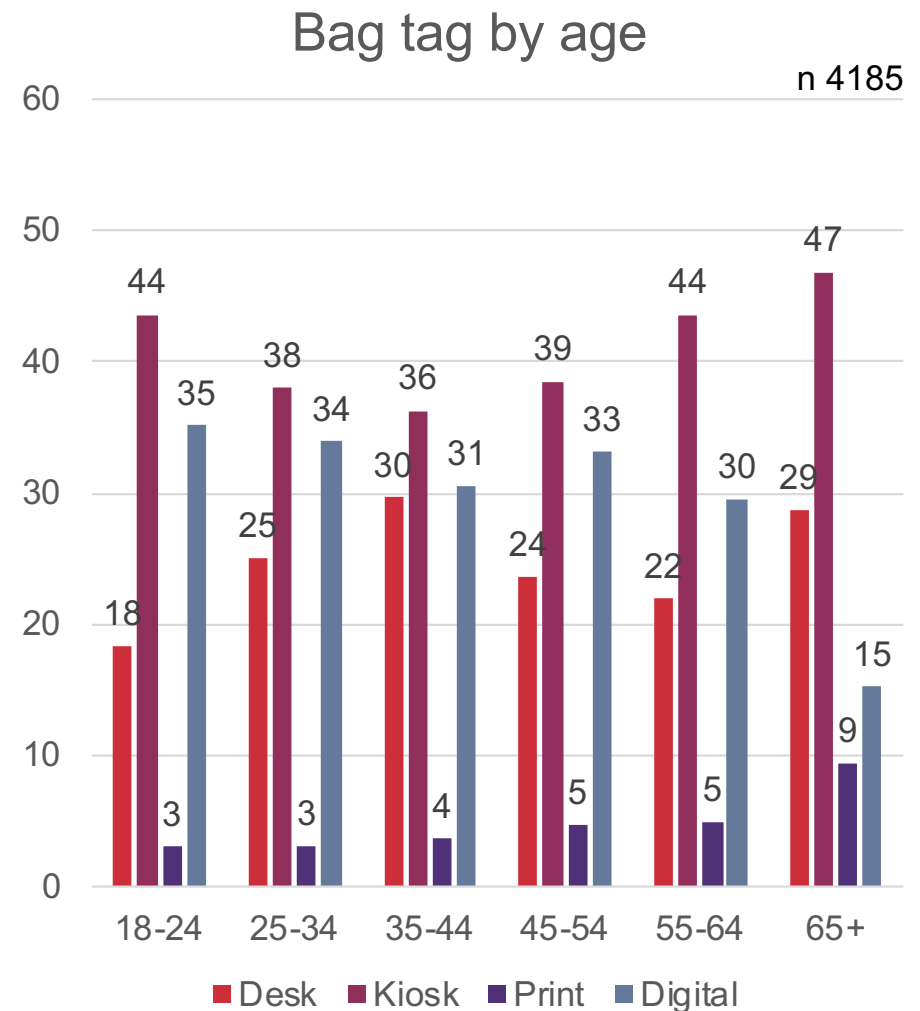
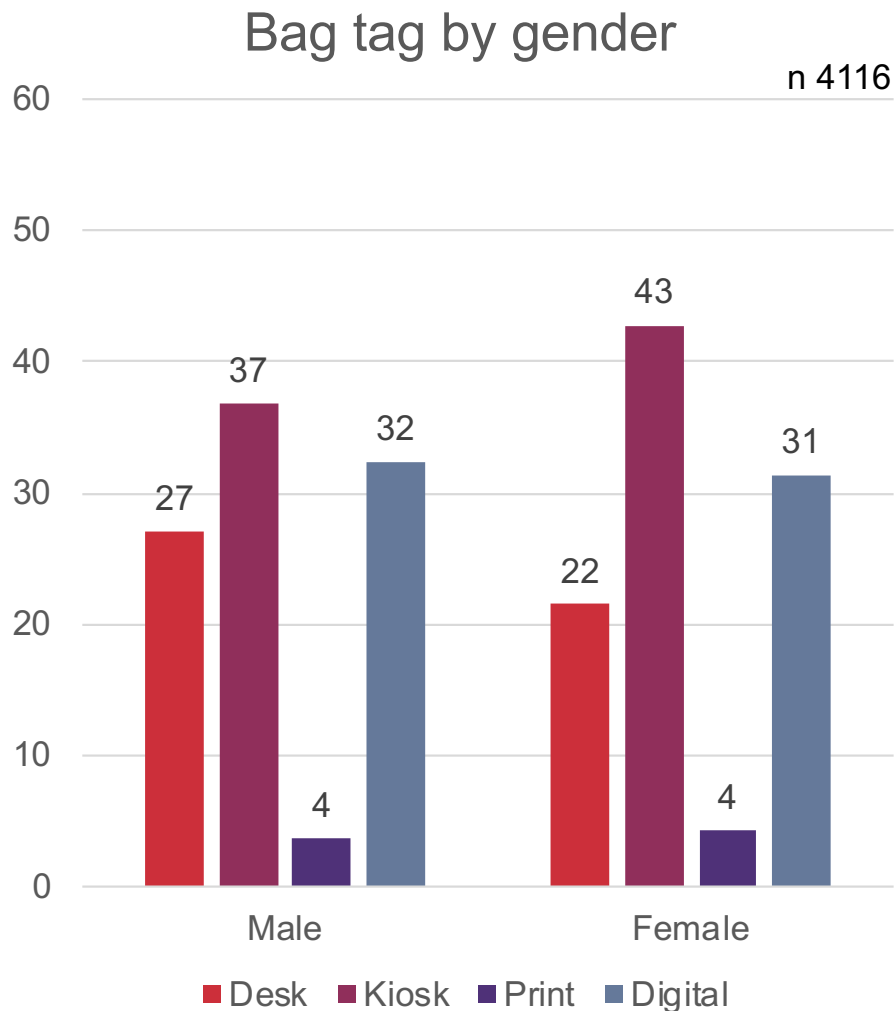


https://www.youtube.com/watch?time_continue=2&v=qp4nqV0lvN4&feature=emb_logo

Self-printed bag tags are preferred most BUT 32% of all respondents would prefer to use a «digital tag», which is a high % given that the product is not widely available or known about



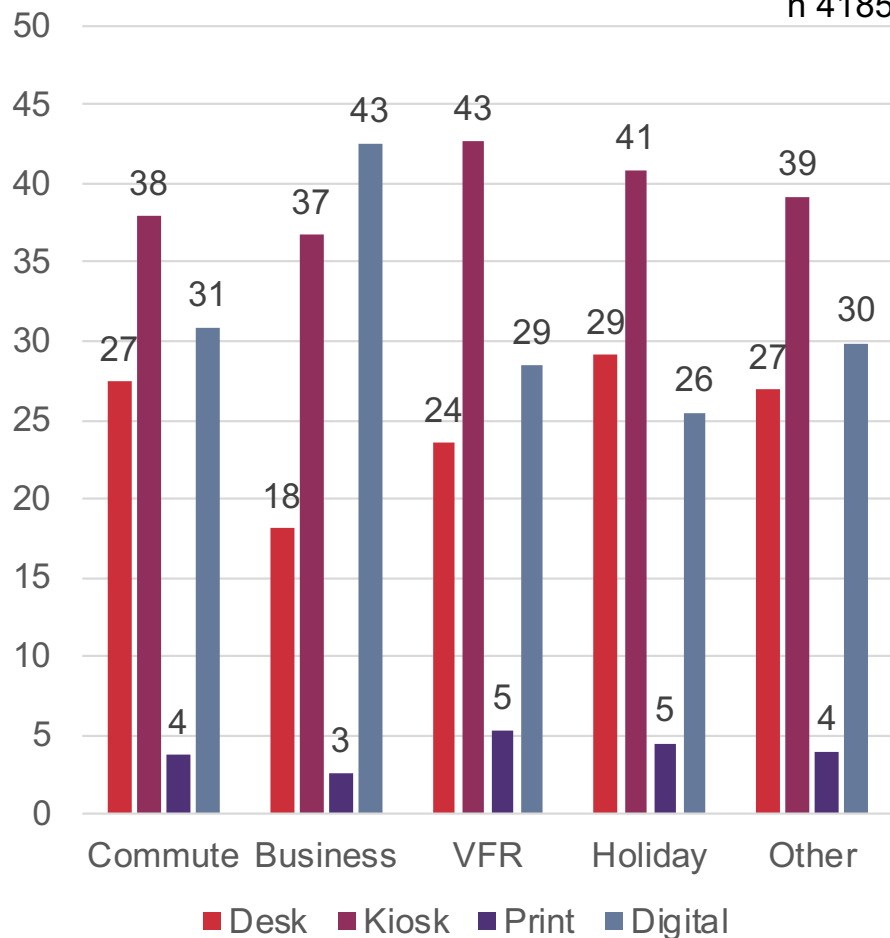
Female travellers prefer self-service kiosks over check-in desks more than male travellers do, while travellers aged 65+ are less interested in digital tags compared to other age groups



Business travellers and commuters are in most favour of digital tags (preferred choice for business travellers), while international travellers are more in favour compared to domestic travellers

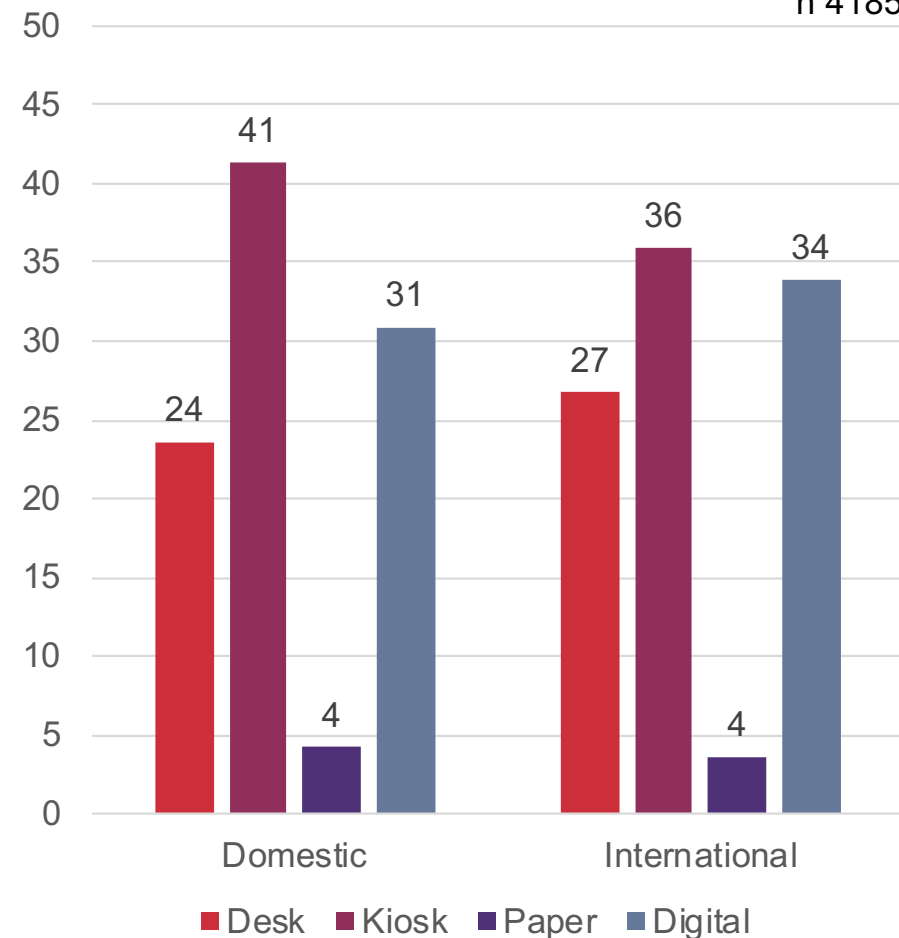
Bag tag by travel purpose

n 4185

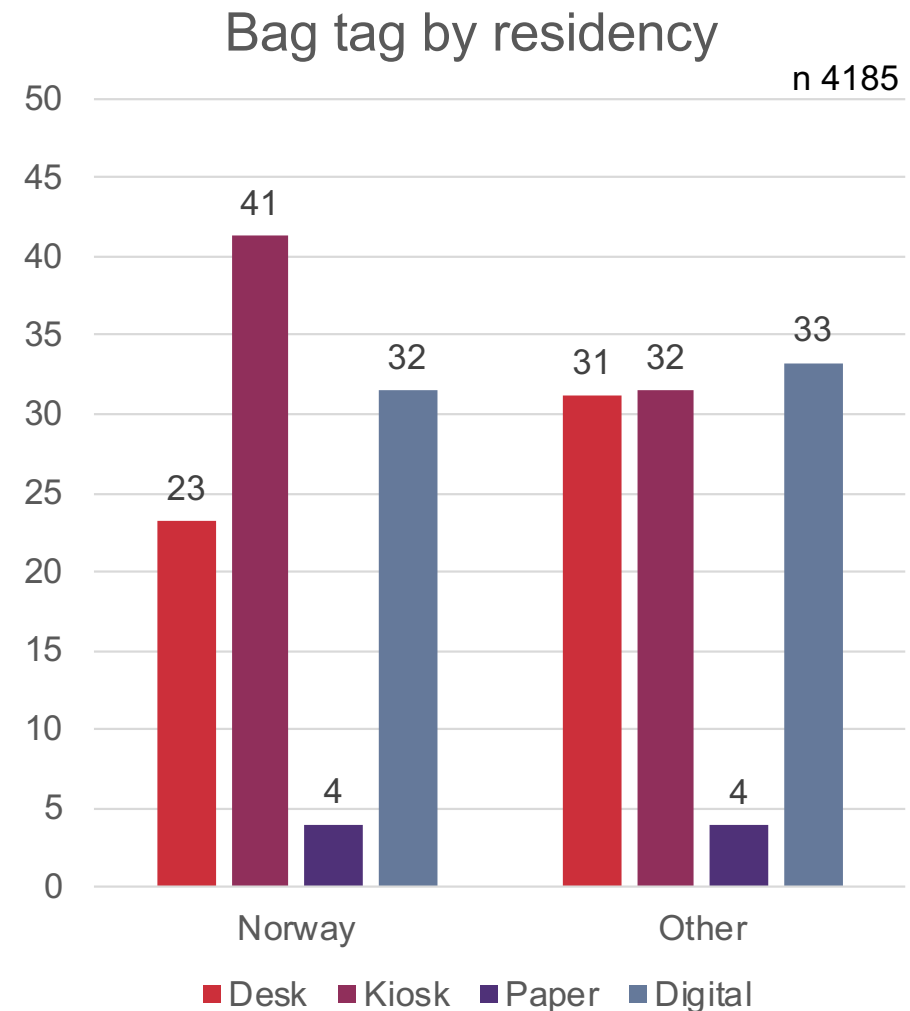
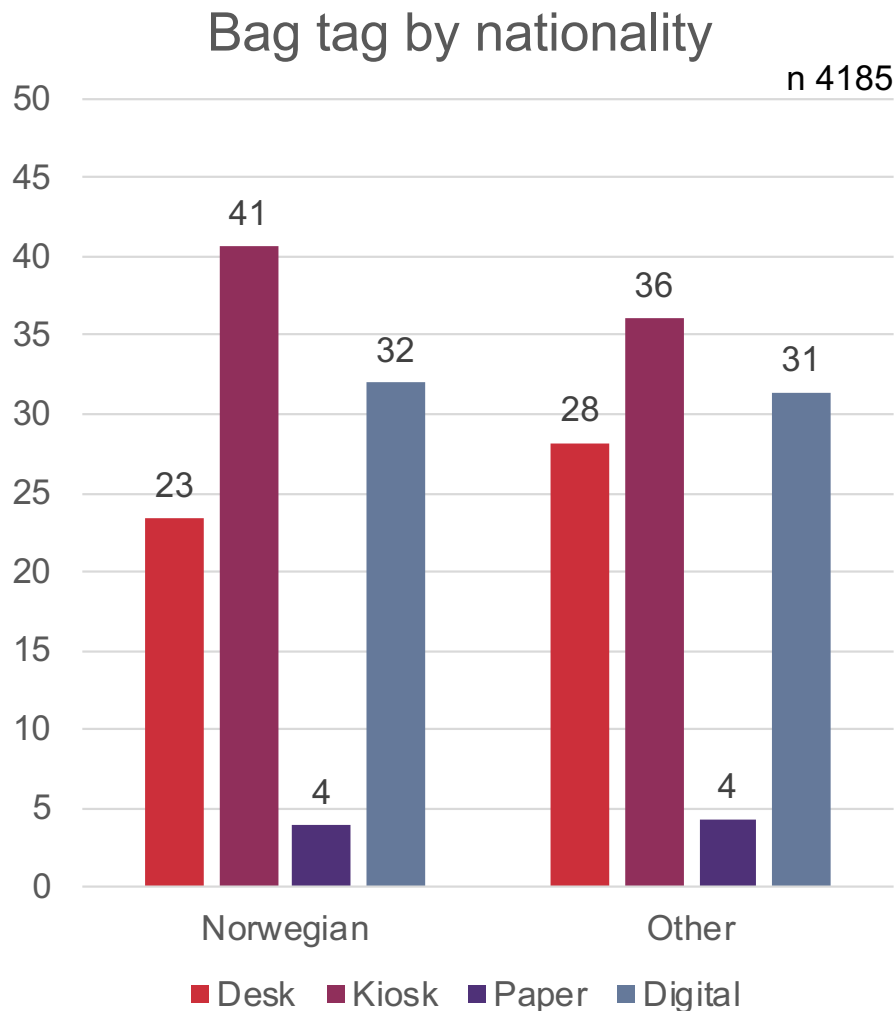


Bag tag by type of travel

n 4185



Foreign citizens or residents are more in favour of accessing their bag tag at a check-in desk than Norwegian citizens or residents



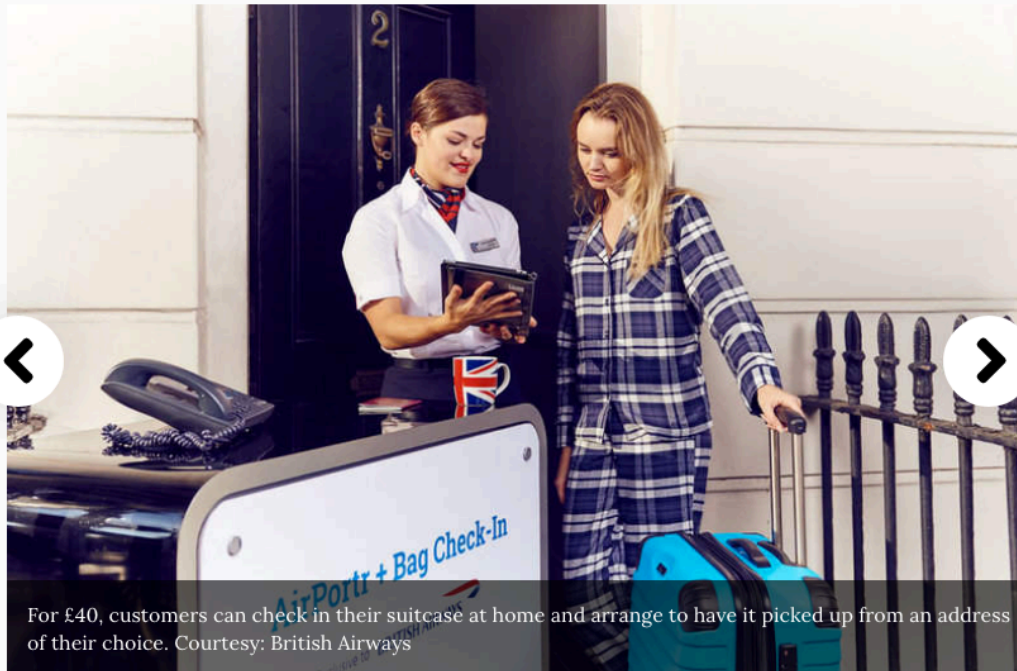
26 SEPTEMBER 2017

ANALYSIS

Is remote baggage drop-off the next big travel innovation?

SHARE

Baggage handling innovations score high on the priority list for airports and airlines around the world, and one service is shaping up to become a potential passenger favourite. Can off-airport baggage check-in become the future of hassle-free flying?



For £40, customers can check in their suitcase at home and arrange to have it picked up from an address of their choice. Courtesy: British Airways

RECOMMENDED COMPANIES



Air+Mak Industries Inc

Air+Mak Industries Inc designs and manufactures aircraft ground support equipment...



TCR International

Founded in 1999, TCR is today a major business-to-business service...






Frequentis Comsoft

Frequentis Comsoft is an international solution provider to the air...

Check-in your bags **from home**

Trusted with over 125,000 bags.

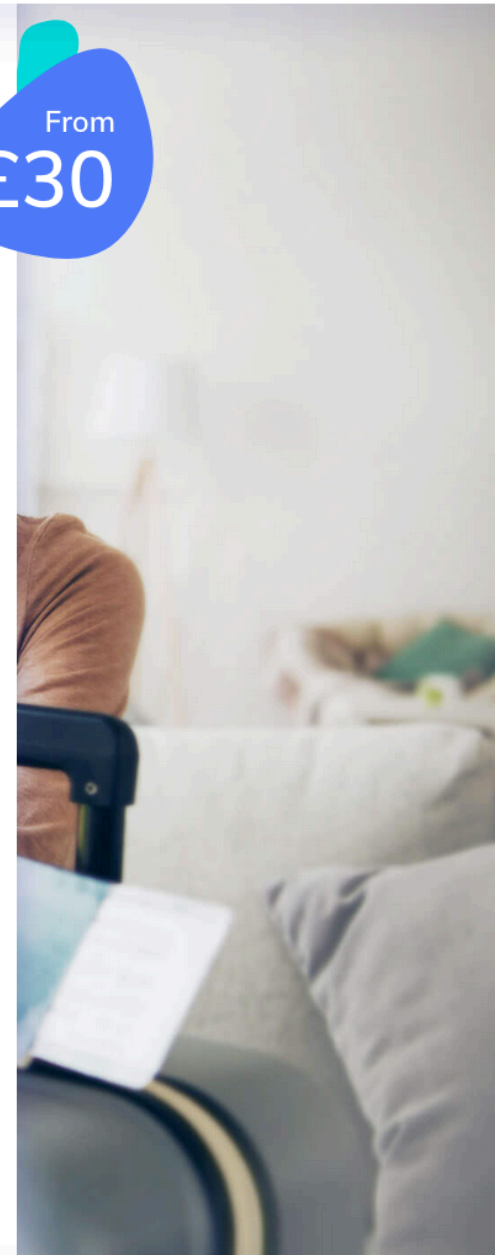
-  We put your bags on the plane
-  Travel light and skip the airport queues
-  Your bags sealed in front of you

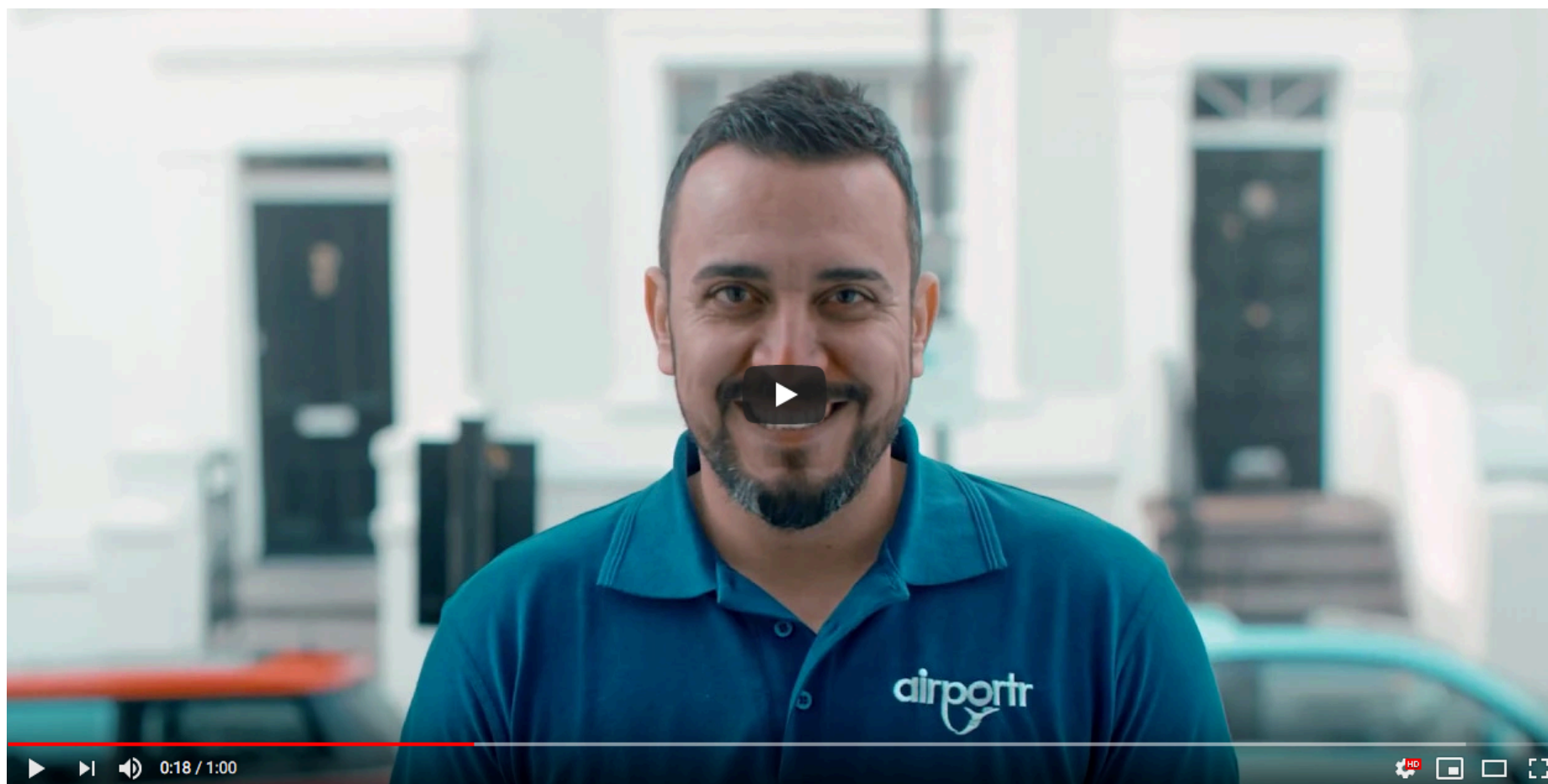
Book your collection now



[Learn how it works watching this video](#)

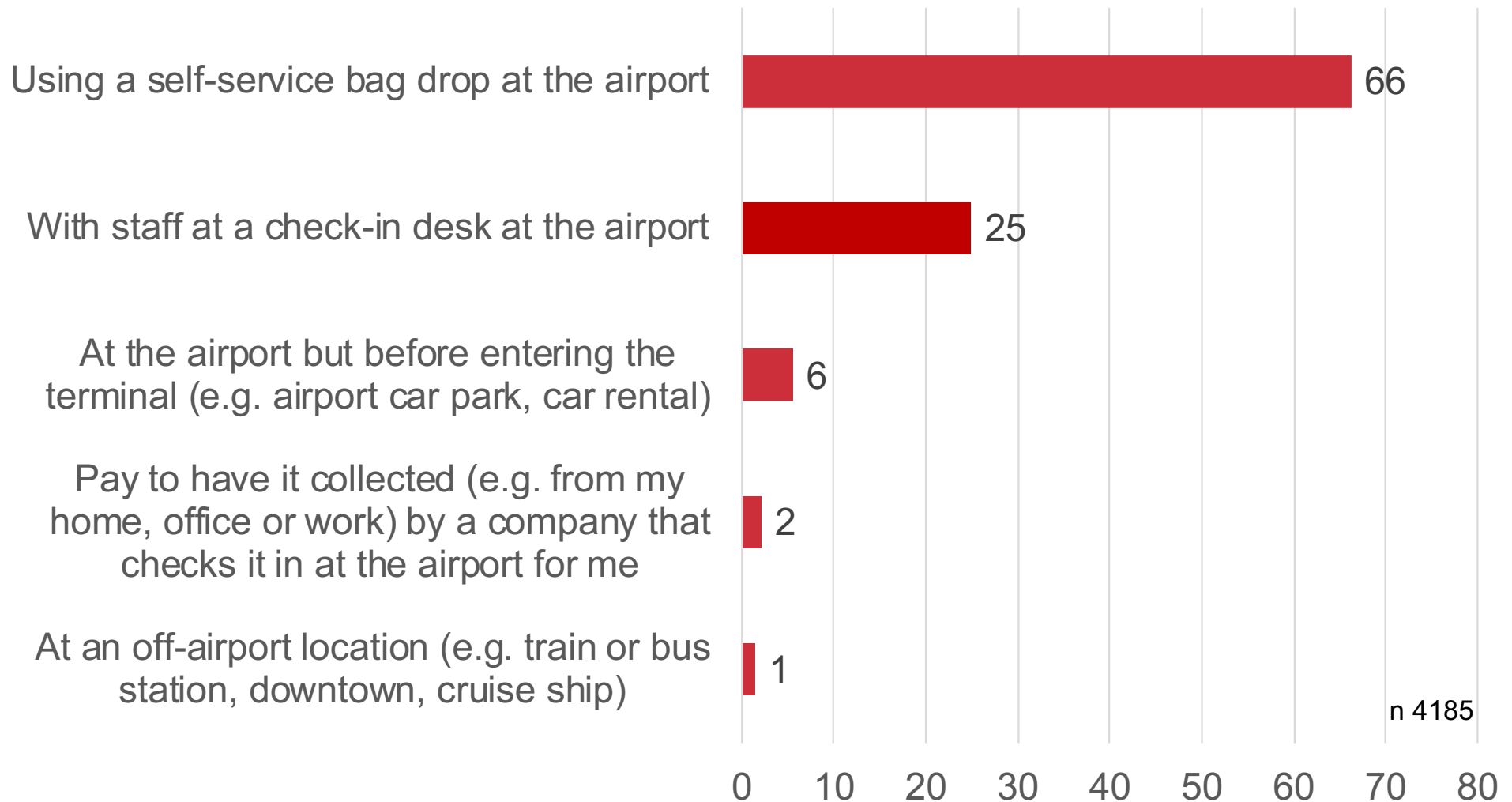
From
£30



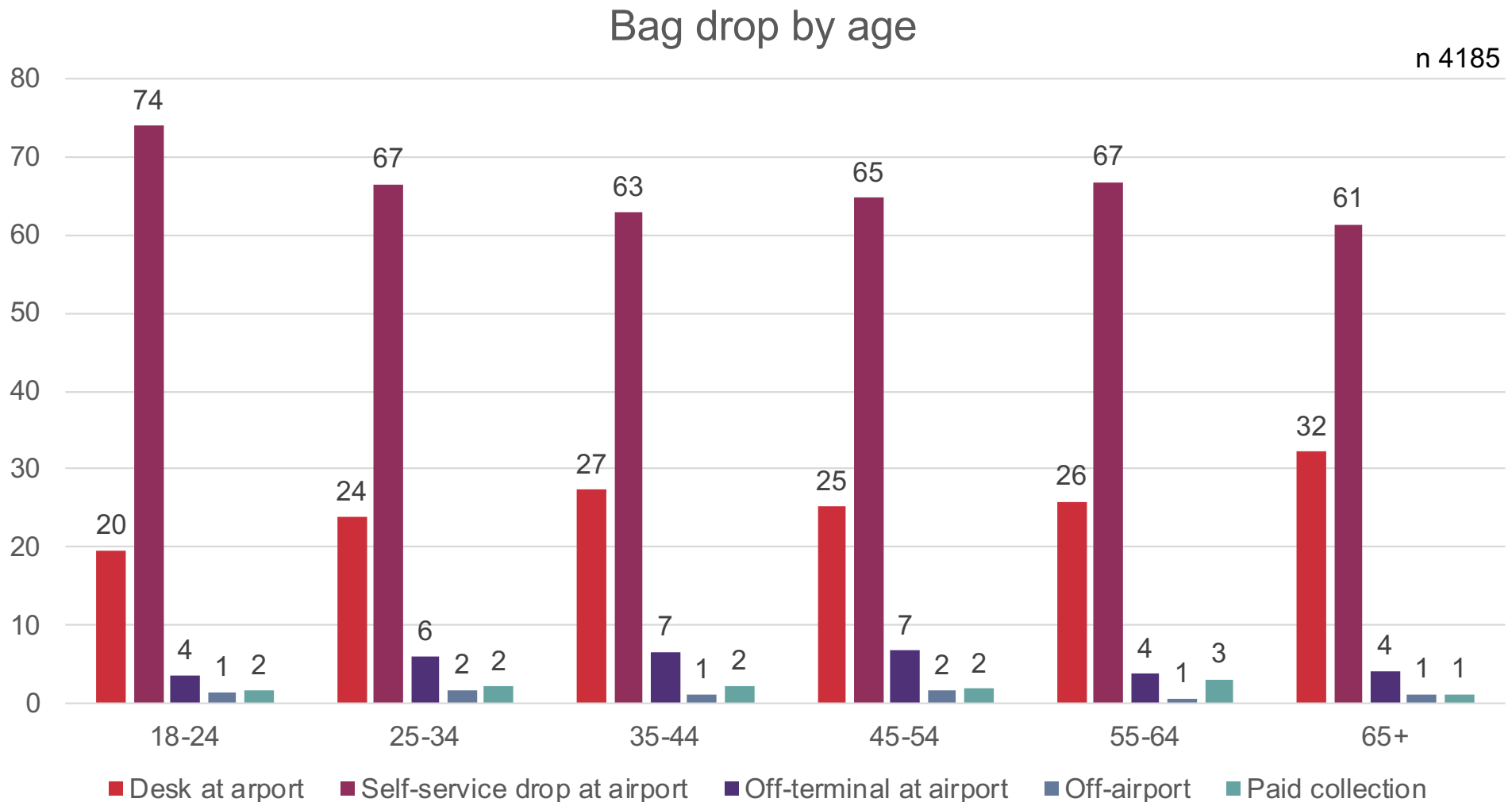


https://www.youtube.com/watch?time_continue=18&v=eD7pzGg9H9Y&feature=emb_logo

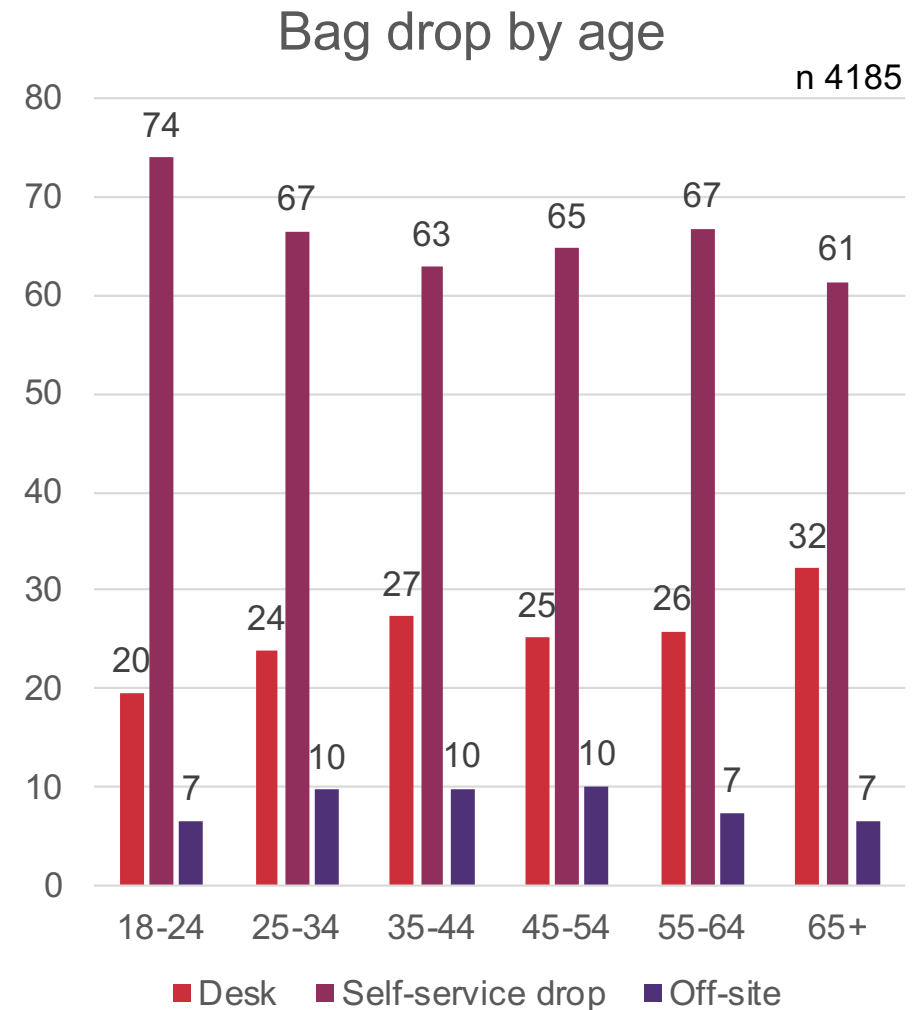
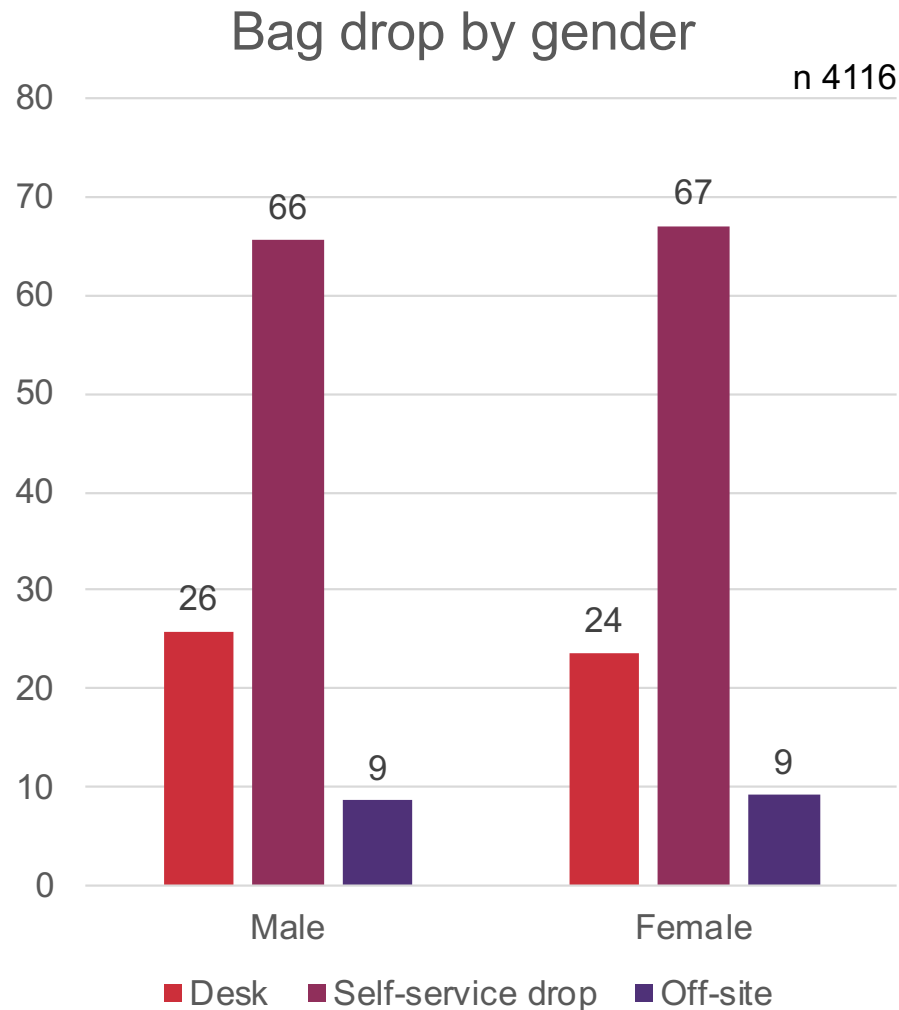
Two thirds of respondents prefer to use a self-service «bag drop». Little interest in off-site options (inc. home collection)



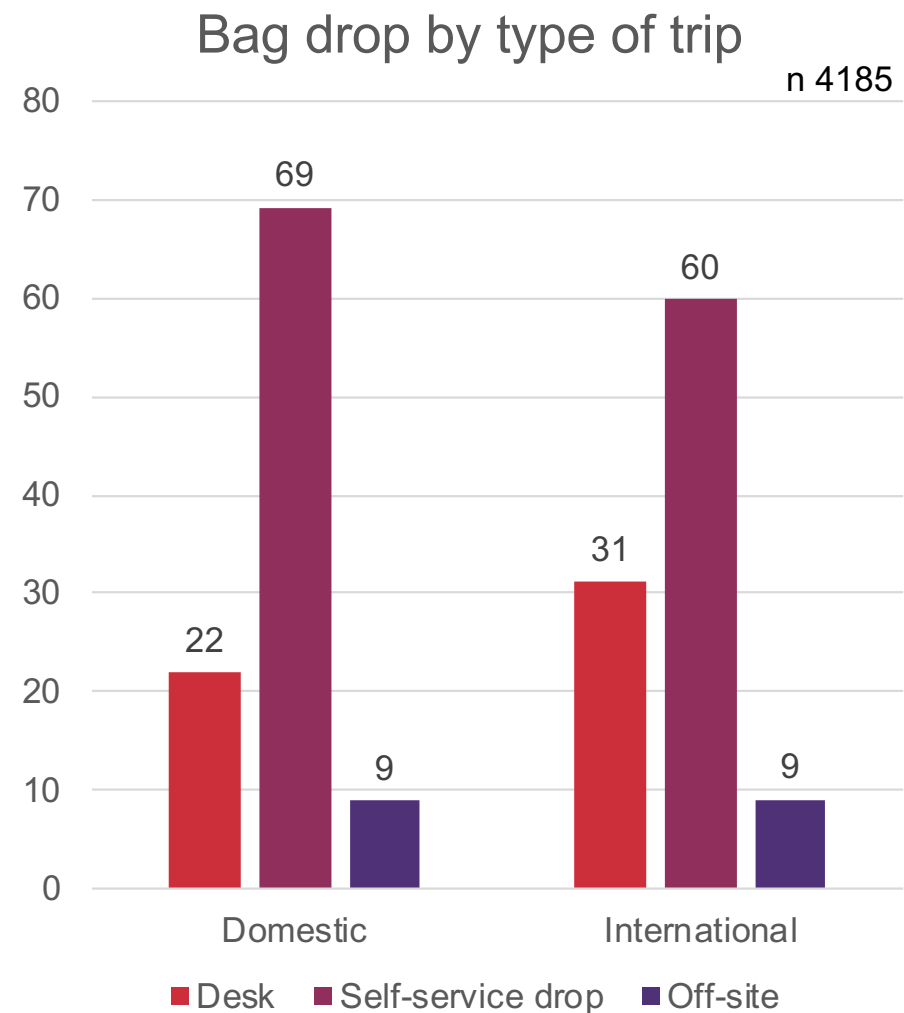
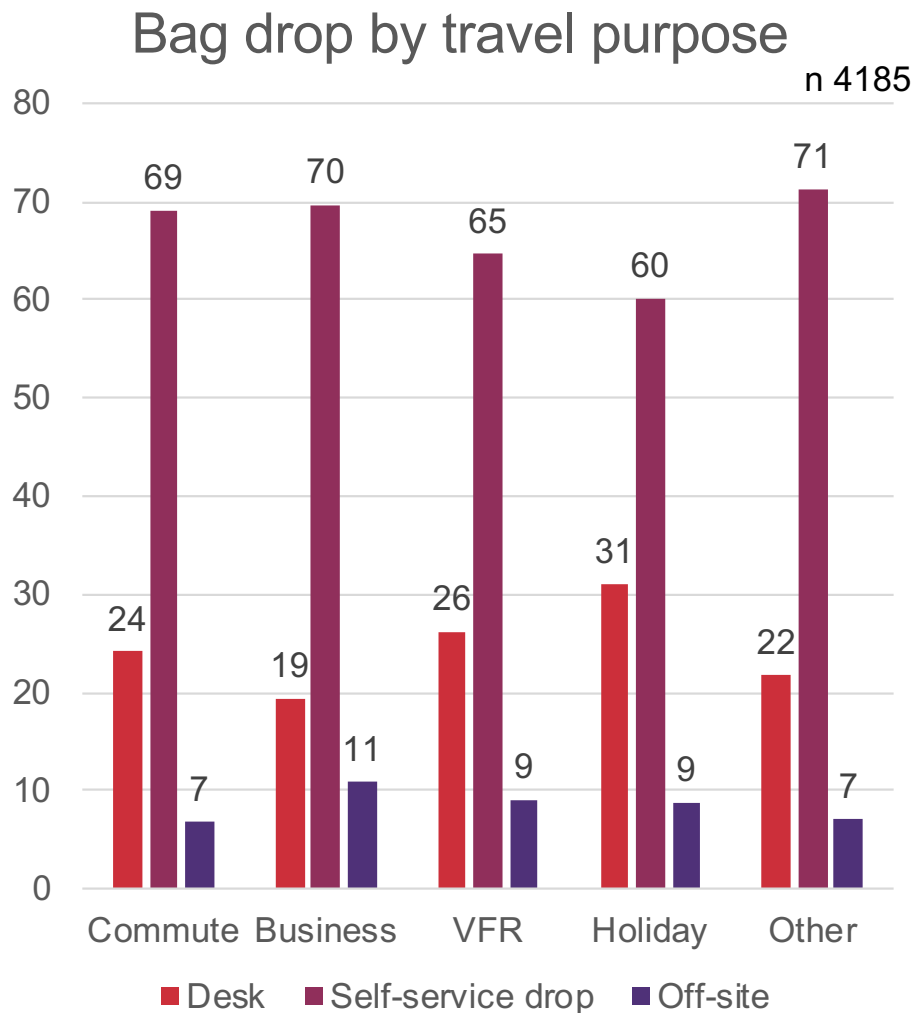
Self-service bag drop is by far the preferred option for all age groups



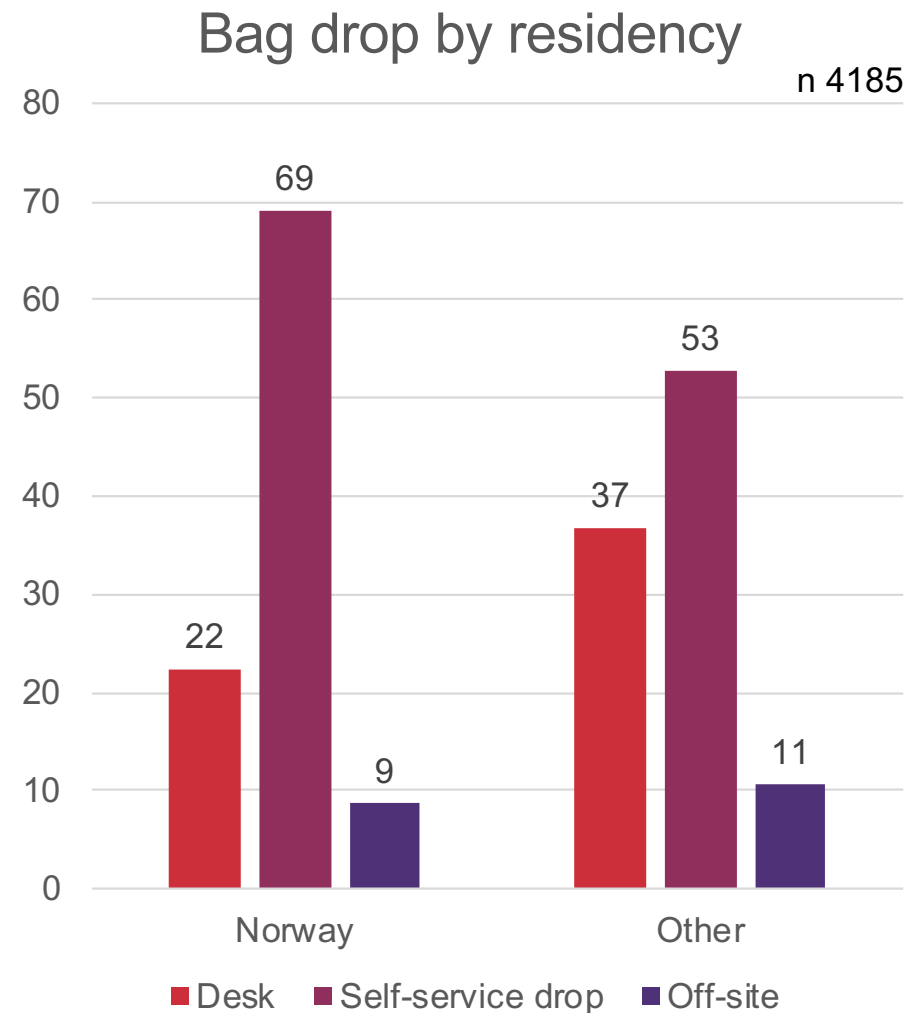
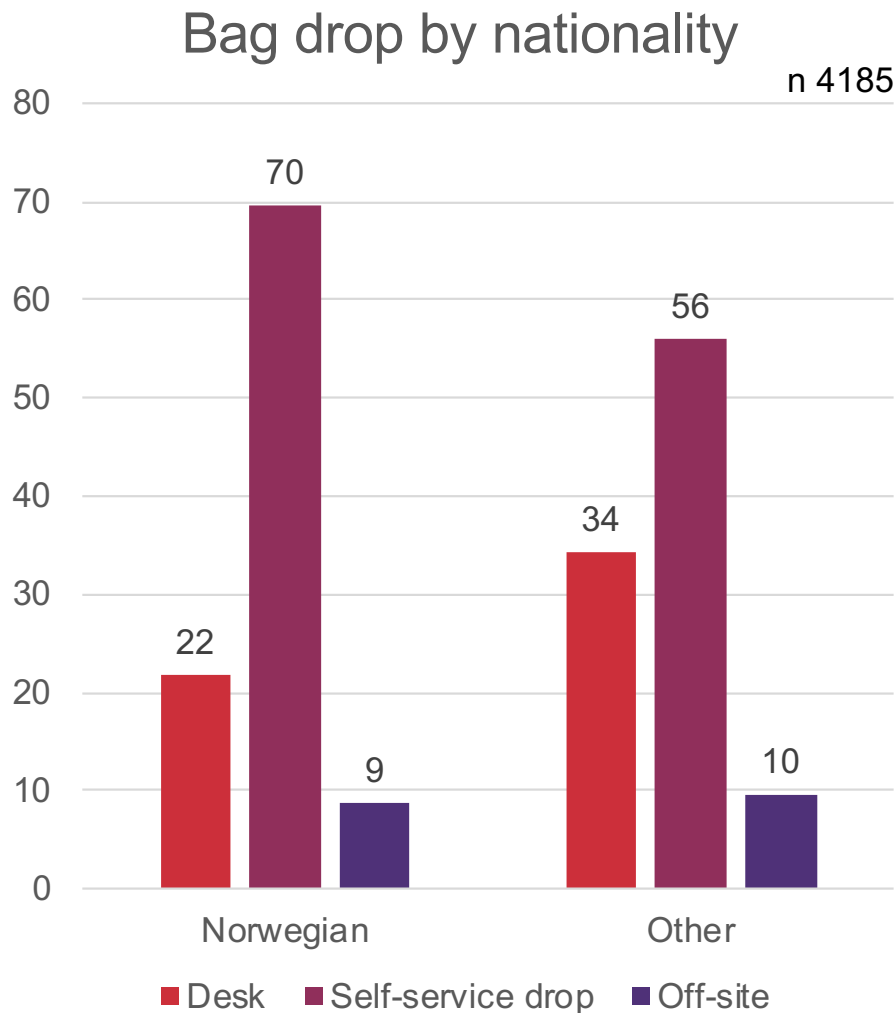
No variation in bag drop preferences by gender. Younger travellers are generally more interested in self-service drops compared to other age groups, while the oldest are more interested in using a check-in desk



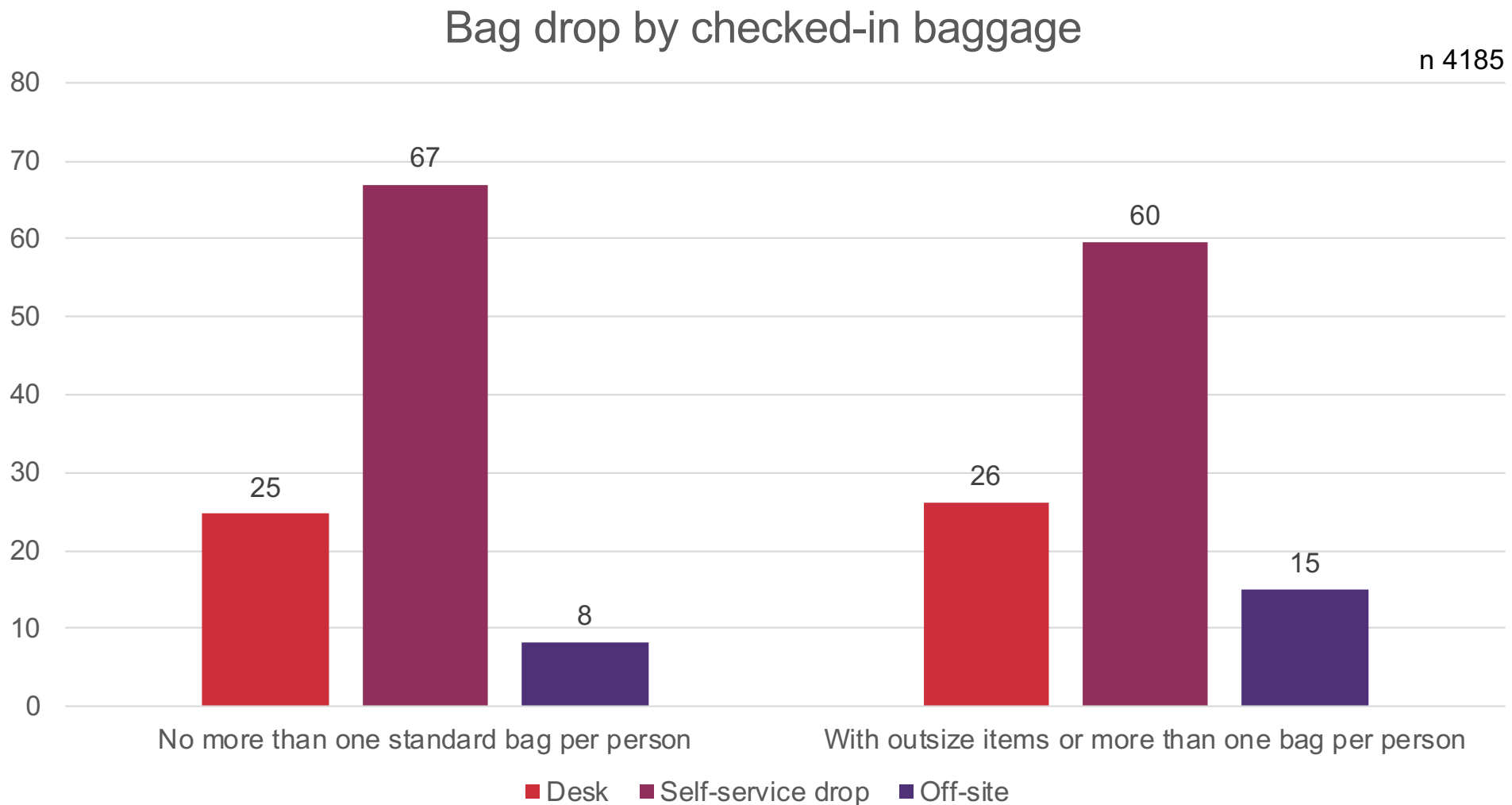
Holiday and international travellers are more in favour of using a check-in desk to drop their baggage compared to those travelling for other purposes or on domestic trips



Foreign citizens or residents are more in favour of using a check-in desk to drop their baggage compared to Norwegian citizens or residents



Off-site options are preferred more by passengers with outsize or additional versus standard baggage. Demand for off-site options increases by 82% when travelling with outsize or additional baggage but is still fairly low in percentage terms



Security screening

Question: If you need to pass through security, which screening option would you prefer to use? Select one.



AIRPORT SECURITY: THE FUTURE COULD SIMPLY INVOLVE WALKING THROUGH A CORRIDOR

Exclusive: New search technology uses infra-red cameras so sensitive that they could 'see' a 100-watt lightbulb from half-a-million miles away

Simon Calder Travel Correspondent | @SimonCalder |
Thursday 17 January 2019 16:31 |



<https://www.independent.co.uk/travel/news-and-advice/airport-security-queues-scans-screening-carry-on-luggage-shoes-tray-a8732761.html>



47%

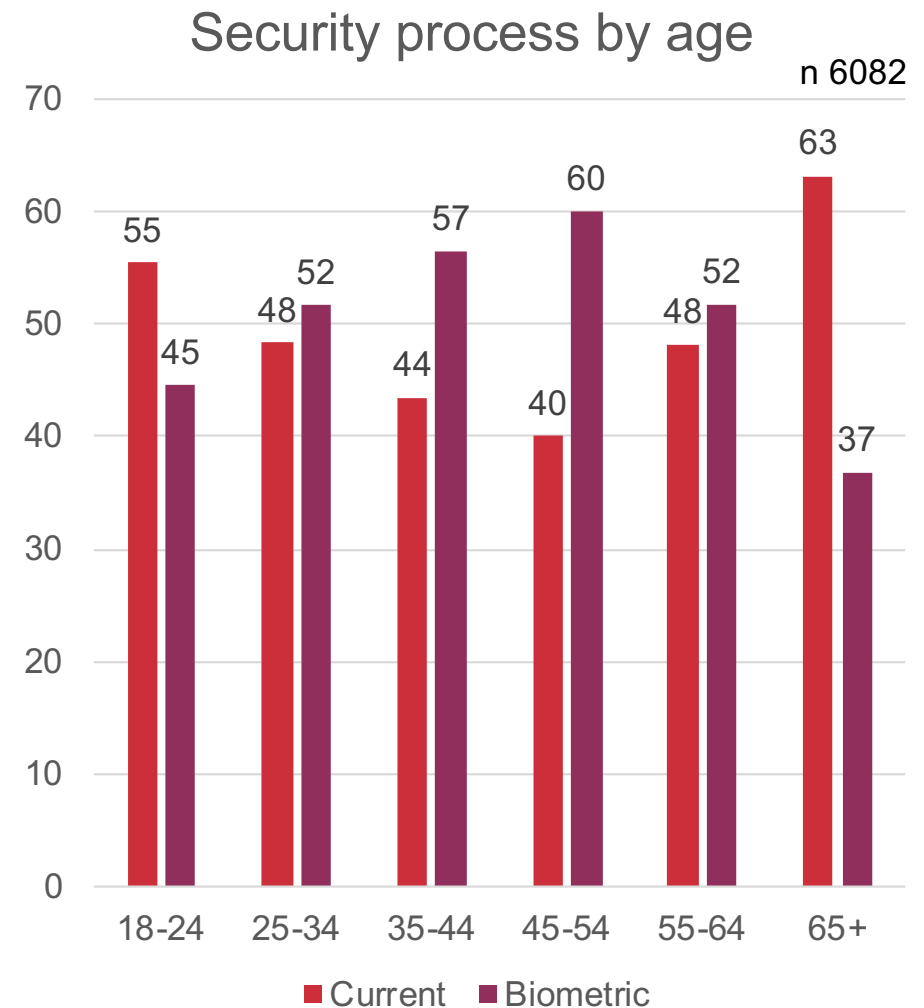
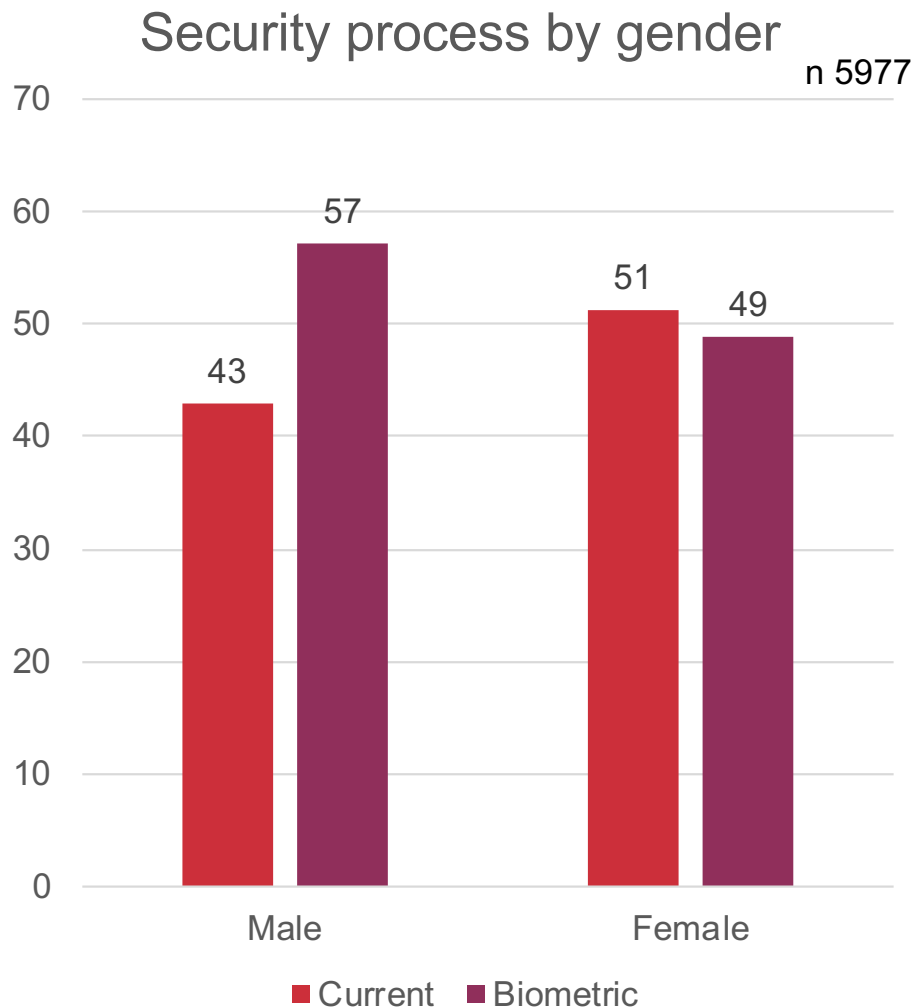
Current process of scanning or showing my boarding pass, then removing items for screening before also being screened myself



53%

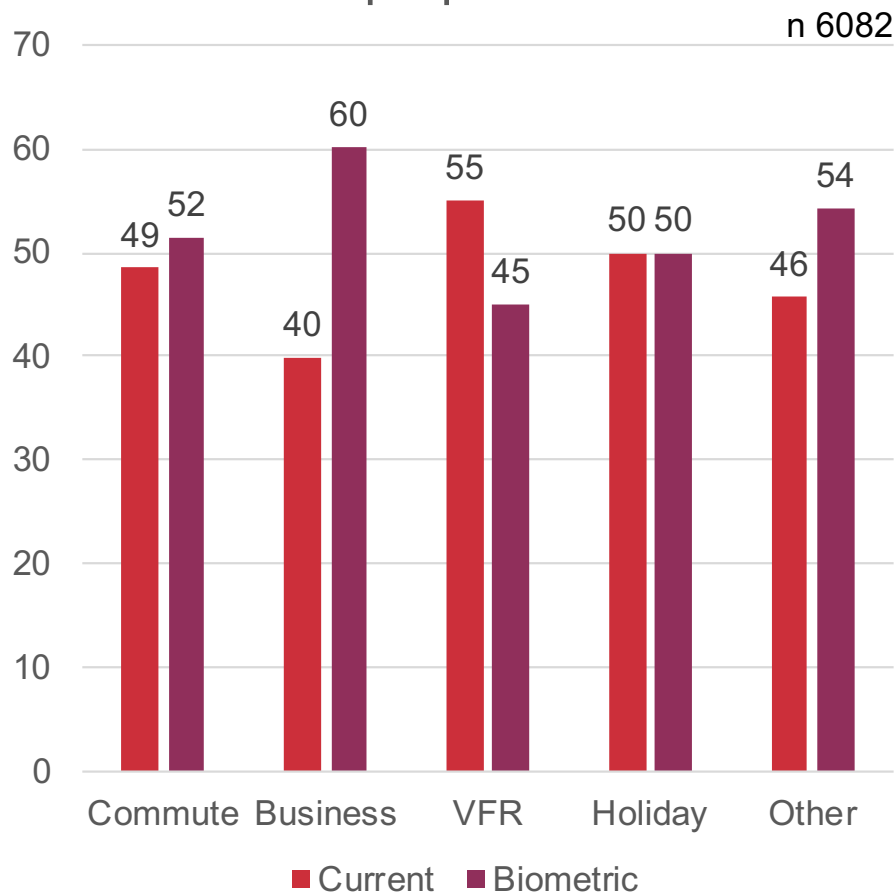
Use of infra-red cameras, facial recognition and other technologies that scan me as I move so that I can walk through security without needing to remove items for screening

Male travellers are more interested in using biometric screening compared to female travellers (the difference for gender is not seen for traditional versus biometric ID). It is the preferred option for middle-aged travellers but not the youngest and oldest age groups

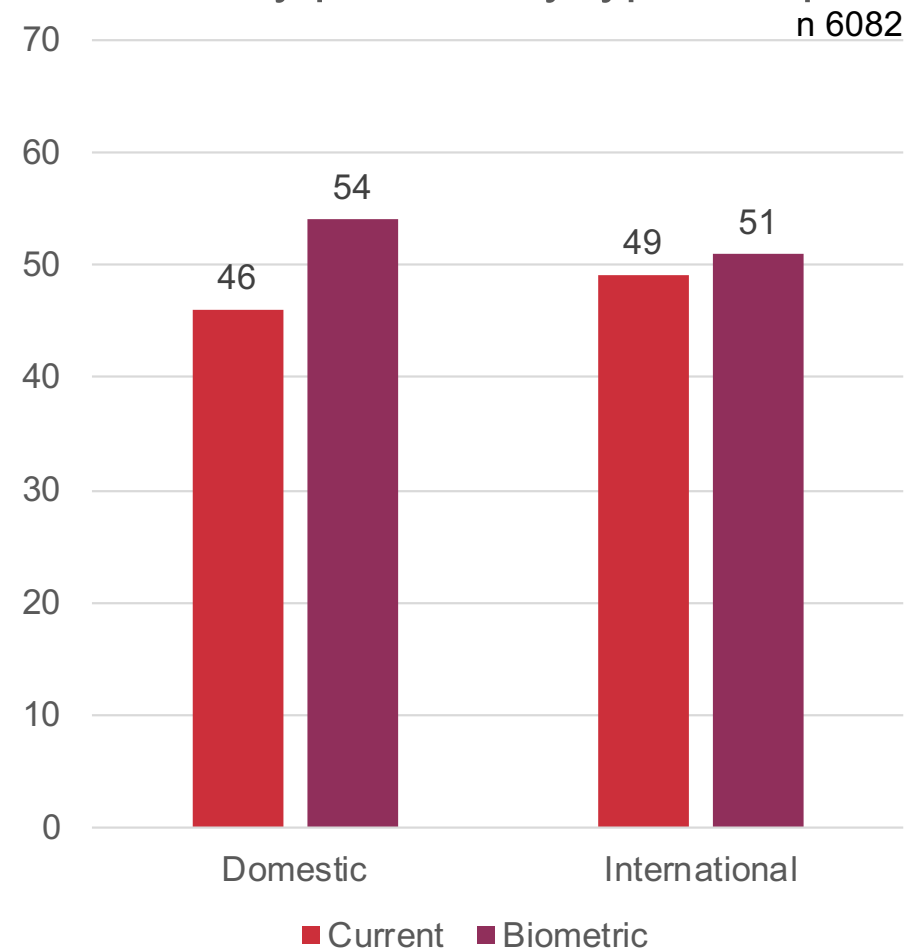


Business travellers and commuters are more interested in using biometric screening while VFR and holiday/weekend travellers prefer the current approach. Travellers on domestic trips are in more favour of biometric screening compared to those on international trips

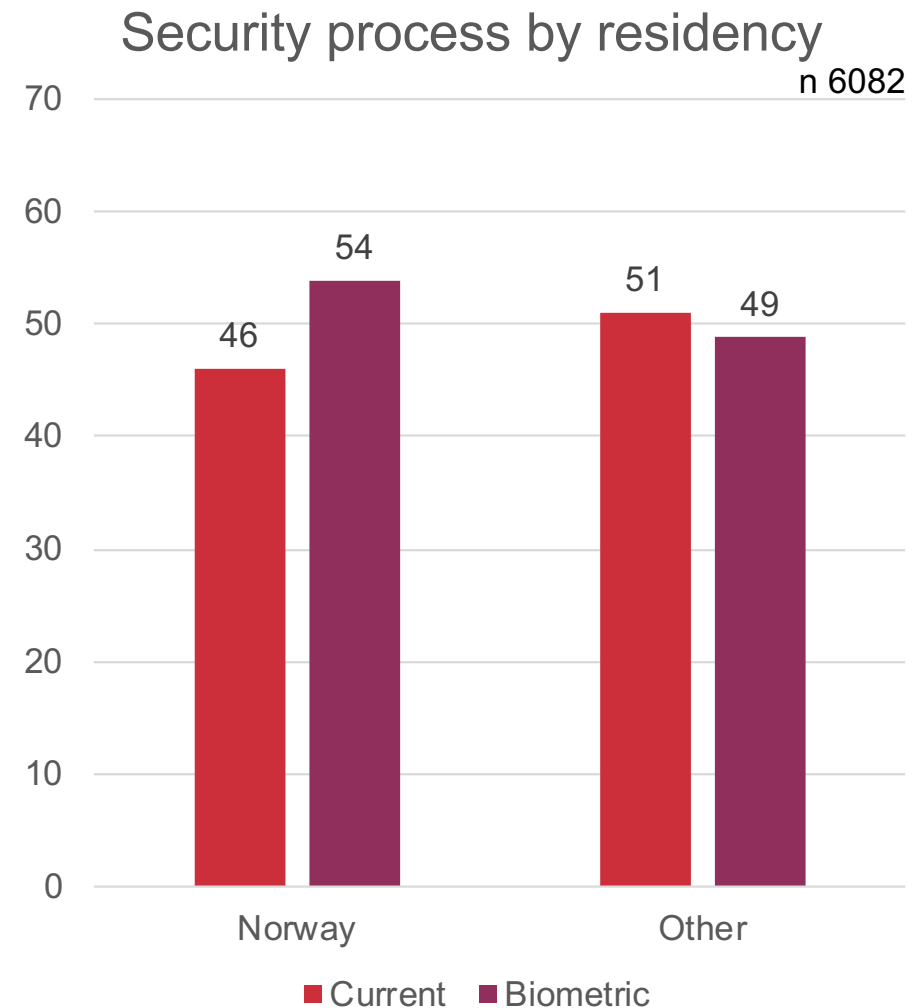
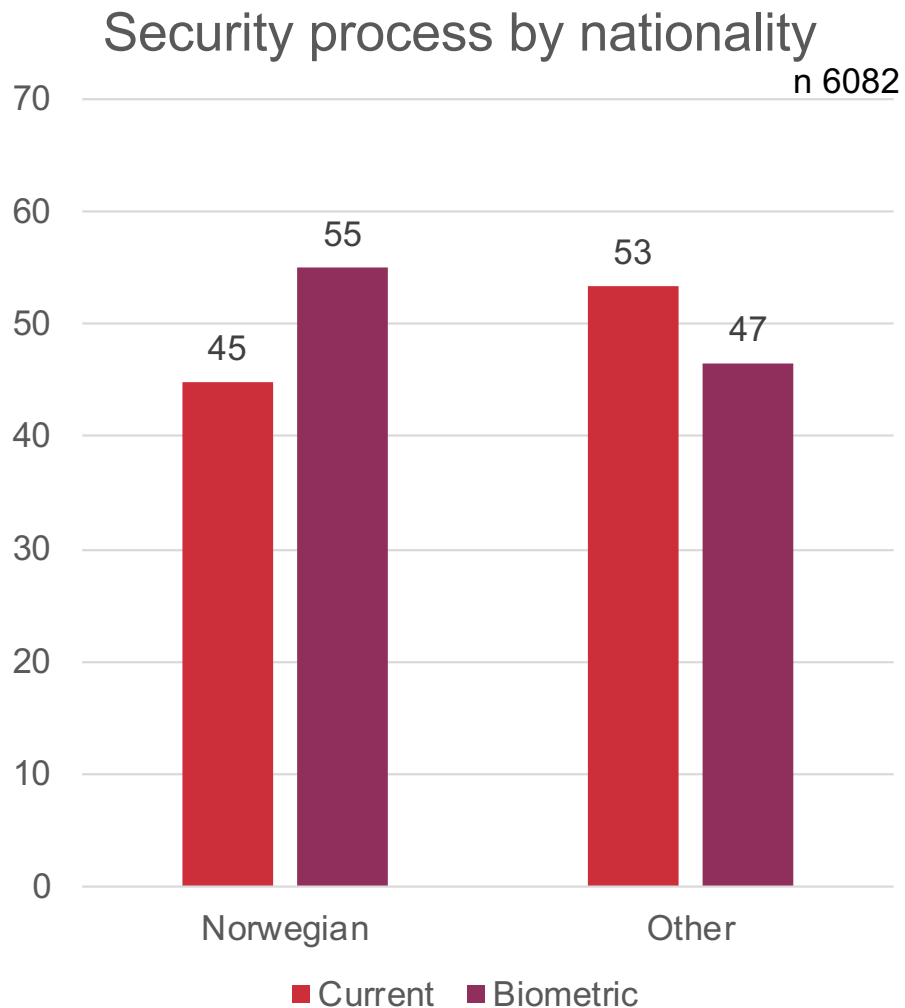
Security process by travel purpose



Security process by type of trip



Norwegian citizens or residents are more in favour of using biometric screening compared to foreign citizens or residents



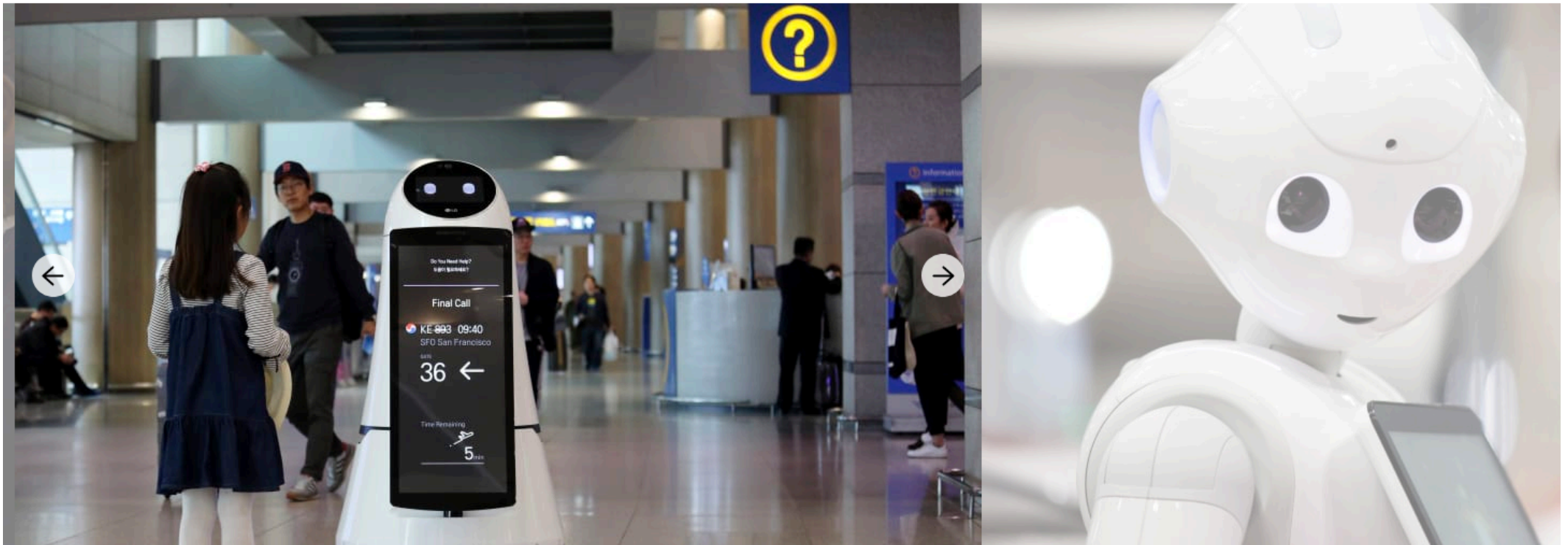
Customer services

Question: Which customer information services would you prefer to use at this airport (assuming that all of them can answer any questions that you might have)? Select up to five.

ONE SQUARE METER

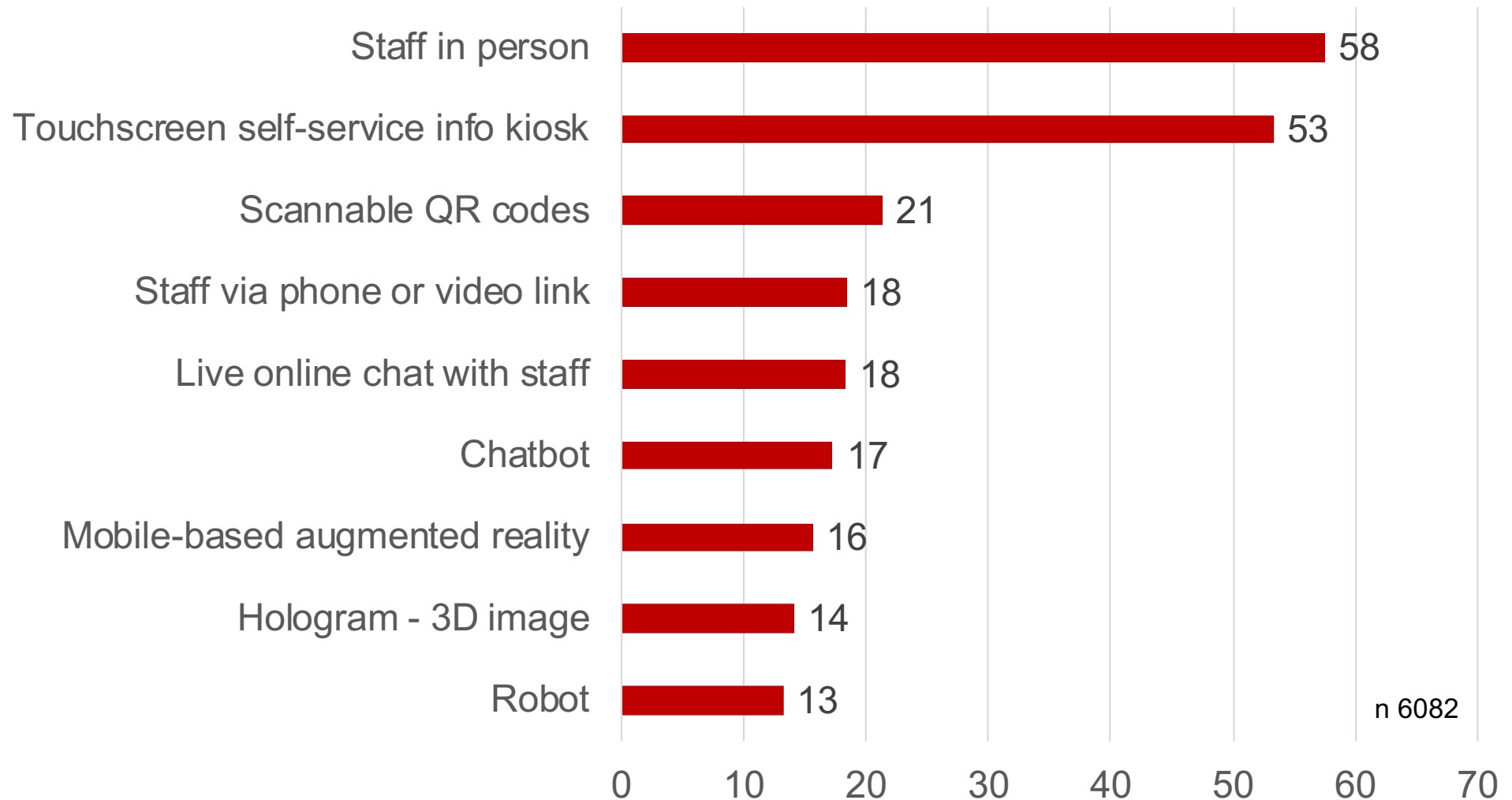
Will robots take over our airports?

Andrea Lo, CNN • Published 13th December 2018



<https://edition.cnn.com/travel/article/robots-in-airports/index.html>

A human touch is preferred for customer services. Respondents are not ready for robots just yet



Some general differences according to respondent characteristics

- Female travellers are generally more interested in dealing with staff (in person or via a live online chat service) or using self-service technologies (touchscreen or QR codes) than using augmented reality or artificial intelligence compared to male travellers
- The oldest travellers (aged 65+) are more interested in dealing with staff in person than using augmented reality or artificial intelligence compared to other age groups
- Foreign citizens or residents are more interested in dealing with staff in person compared to Norwegian citizens and residents but they are less interested in dealing with staff via phone or video link

Customised information

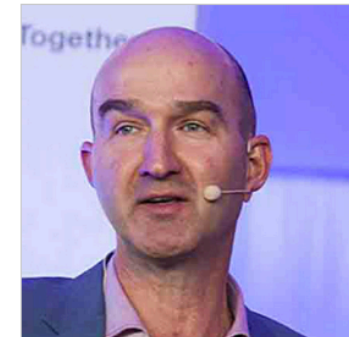
Question: What customised information would you like to receive directly to your mobile device from this airport? Select up to five.

Context-awareness revolutionising airport apps

Renaud Irminger, Director of SITA Lab explores the use of airport apps and how valuable they can be to enhance the passenger experience.



Travelling by air is viewed by some passengers as a stressful experience, full of uncertainty. Even simple things such as navigating the airport can seem daunting. An airport might have installed ample wayfinding signage, but navigating a way through the airport can still be challenging. And passengers who are stressed about time pressure are unlikely to take advantage of the ever-growing list of things on offer in the terminal, even if it's just to pause for a meal or to do some shopping. In fact, most aren't even aware of the full range of options available to them within the airport complex.



By Renaud Irminger

2 July 2017

No comments yet

SHARES

0



ISSUE

Issue 4 2017

RELATED TOPICS

New technologies, Passenger experience & seamless travel

RELATED ORGANISATIONS

SITA

92%

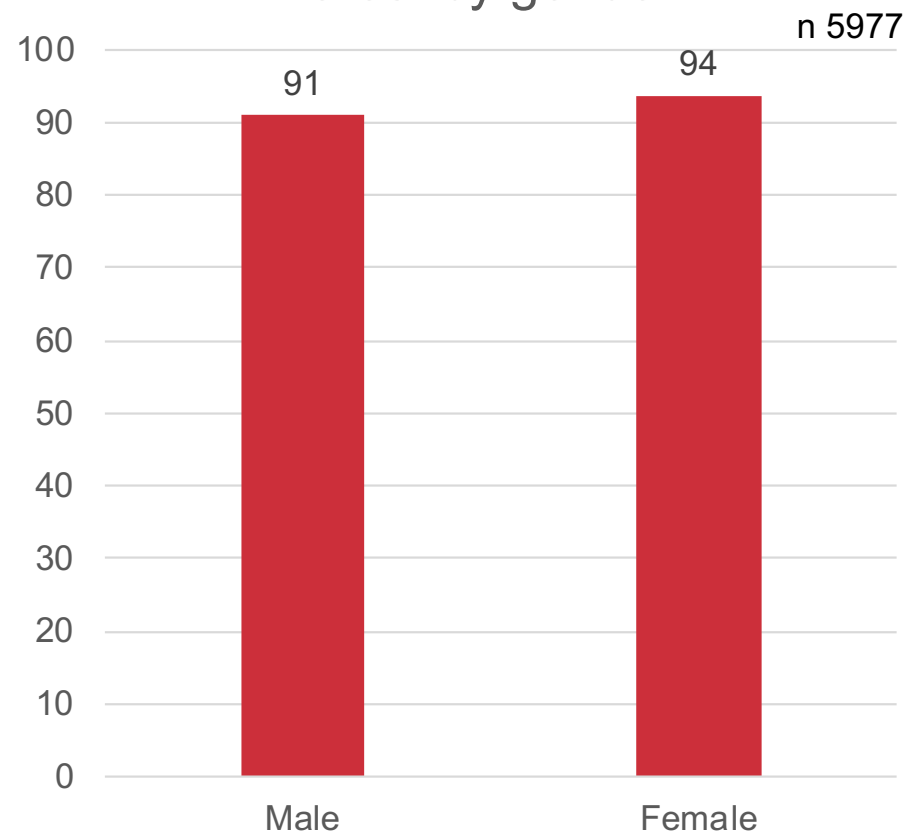
would be interested in receiving
customised information to their
mobile device from the airport

Respondents prefer «functional» versus «commercial» or «travel planning» information to their mobile device



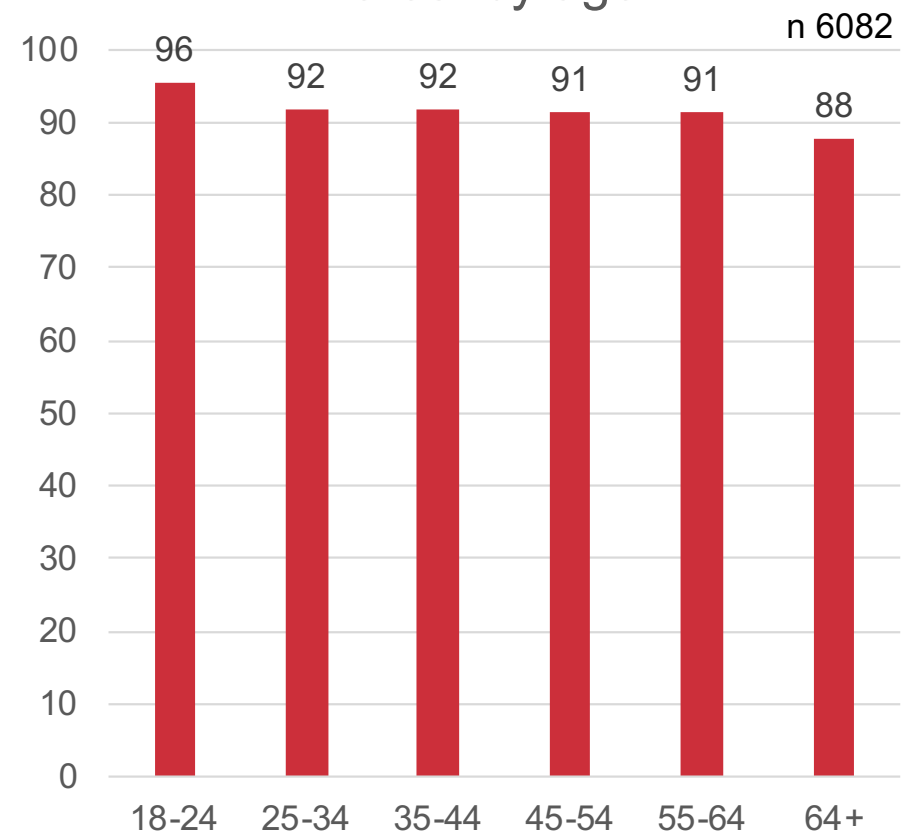
Little difference in interest for customised information by gender but most interest among the youngest age group, and least among the oldest

Customised information
interest by gender



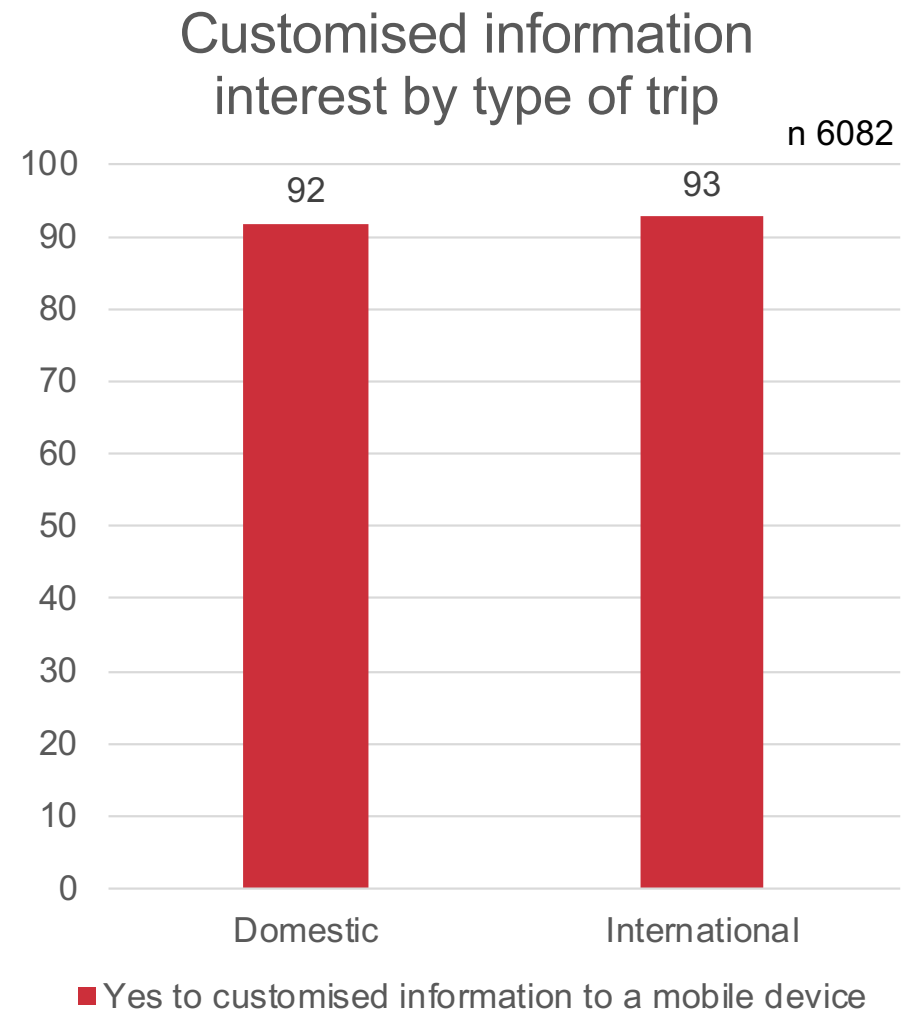
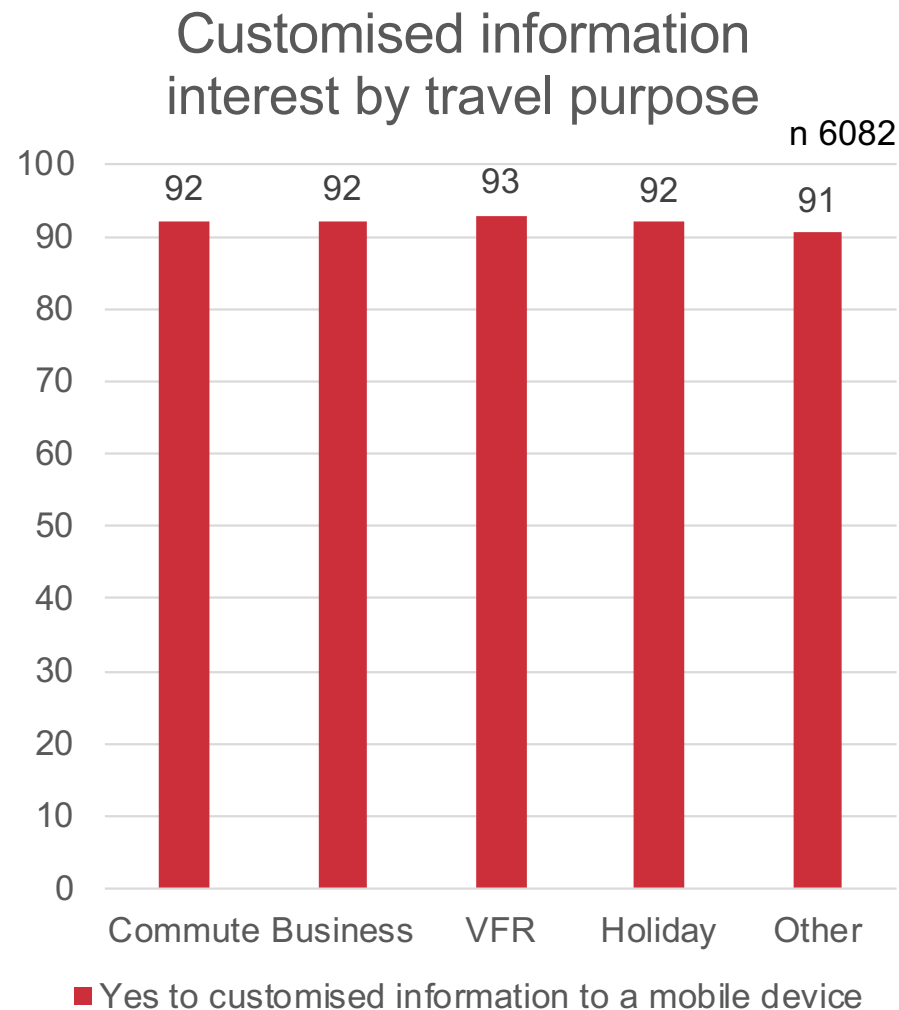
■ Yes to customised information to a mobile device

Customised information
interest by age

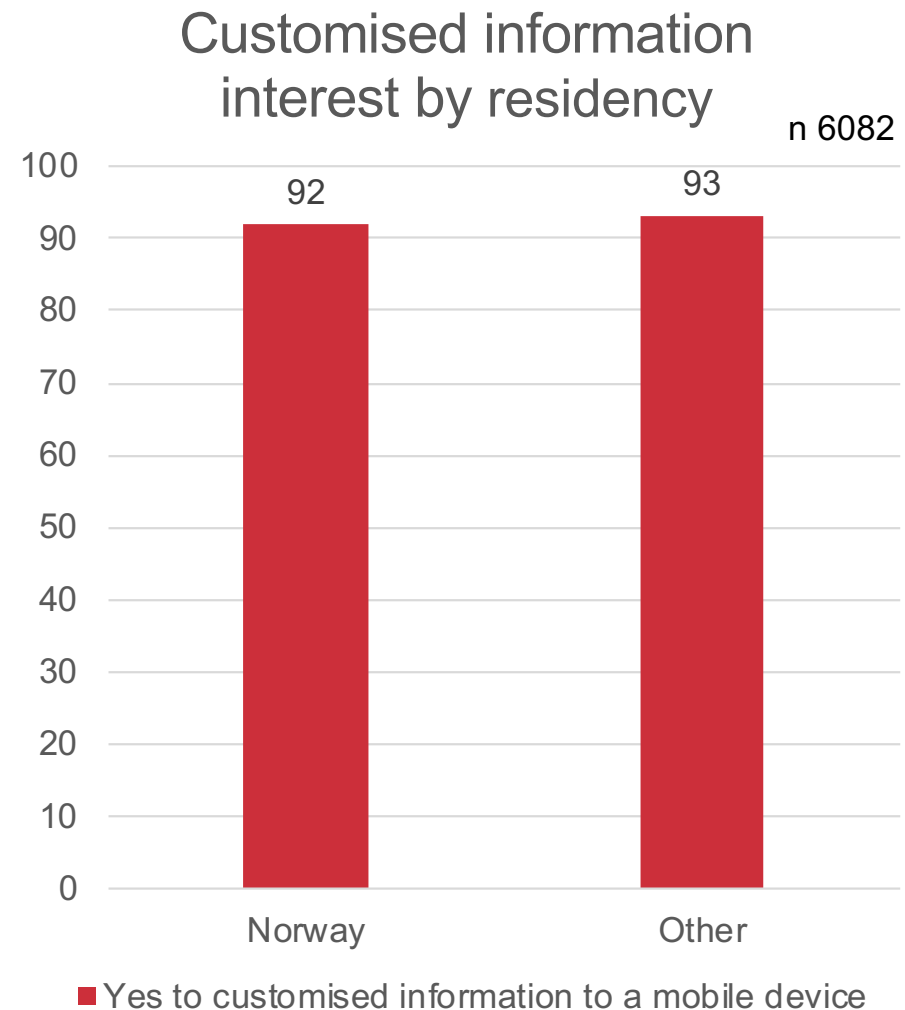
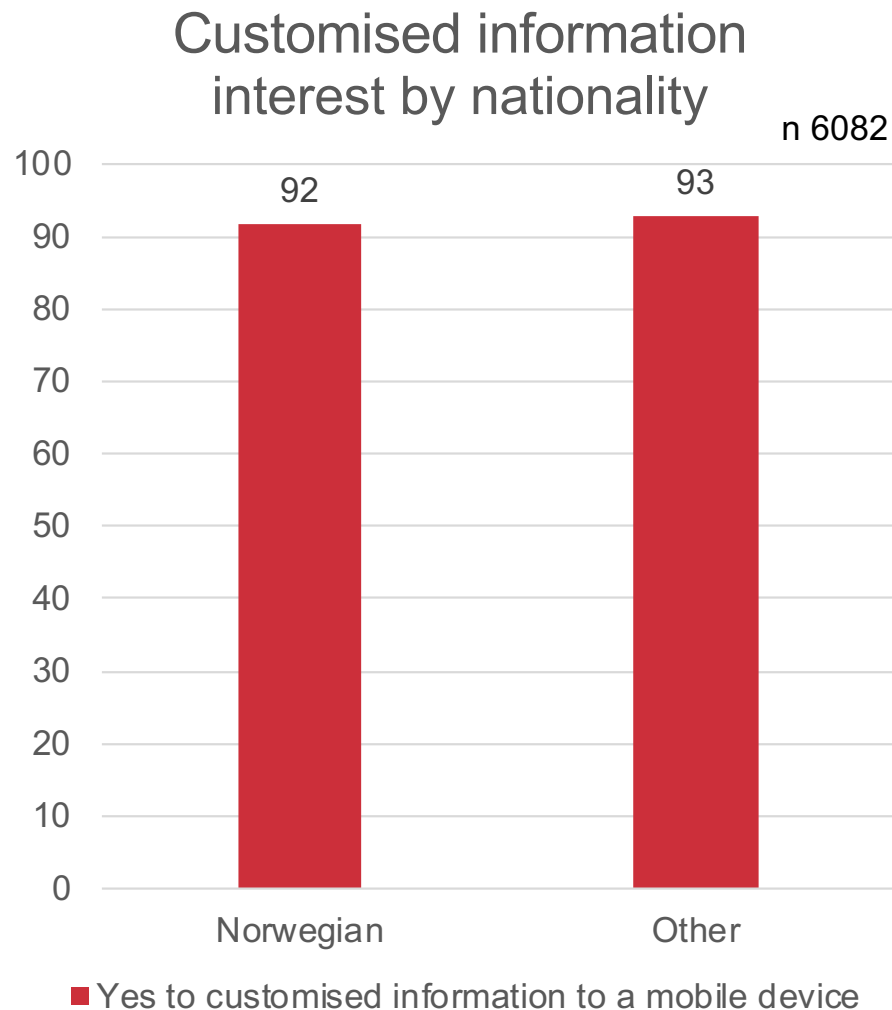


■ Yes to customised information to a mobile device

No difference in interest for customised information by travel purpose or trip type



No difference in interest for customised information by nationality or residency



«Connectedness to Avinor»

Question: Select one answer for each of the following questions.

Avinor is the operator of this airport:

Have you downloaded the Avinor application to your mobile device?

Did you enter your flight details in the Avinor application to receive notifications?

Do you have an Avinor profile (registered via their website or mobile application)?

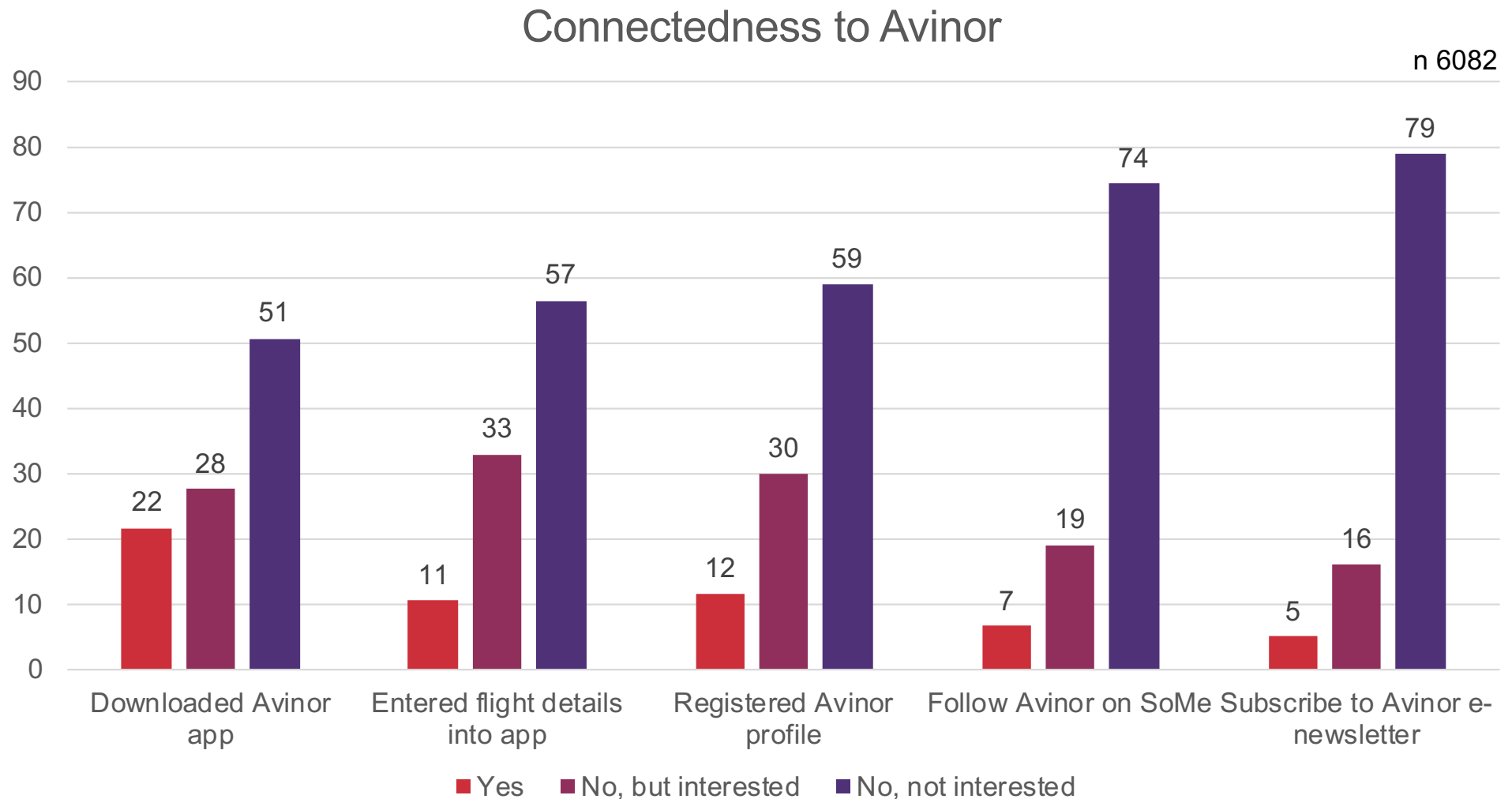
Do you follow Avinor on social media (e.g. Facebook, Twitter, Instagram, YouTube)?

Do you subscribe to the Avinor e-newsletter?

22%

have downloaded the Avinor mobile application to their mobile device BUT only 50% of those people registered their flight details in it for their current trip. These are low figures given that 92% expressed an interest in receiving customised information from the airport to their mobile device

An additional 28% have not downloaded the Avinor mobile application but are interested in doing so. There is also a very strong interest in entering flight details (33%) and registering for an Avinor profile (30%)



Norwegians are 57% more likely to have downloaded the Avinor mobile application compared to foreigners, and 13% more likely to follow Avinor on SoMe

n 6082

Norwegian nationals only	Yes	No, but interested	No, not interested
Downloaded the Avinor mobile app	25.1	29.0	45.9
Entered flight details in the Avinor mobile app	11.7	35.6	52.7
Registered Avinor profile	12.6	32.3	55.1
Follow Avinor on social media	6.8	20.7	72.5
Subscribe to the Avinor e-newsletter	5.4	17.3	77.3
Foreign nationals only	Yes	No, but interested	No, not interested
Downloaded the Avinor mobile app	10.8	22.9	66.3
Entered flight details in the Avinor mobile app	6.6	24.3	69.1
Registered Avinor profile	5.7	22.4	71.8
Follow Avinor on social media	5.9	13.9	80.2
Subscribe to the Avinor e-newsletter	3.8	12.3	84.0

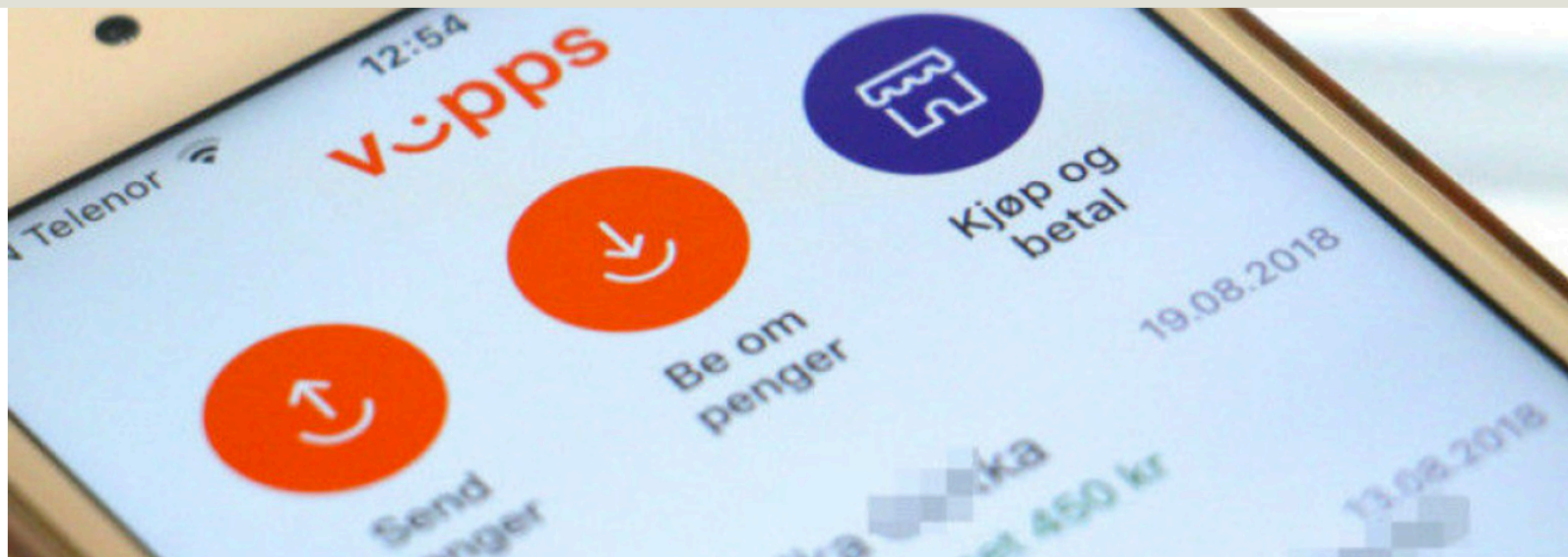
Norwegian residents are 72% more likely to have downloaded the Avinor mobile application compared to foreigners, and 47% more likely to follow Avinor on SoMe

n 6082

Norwegian residents only	Yes	No, but interested	No, not interested
Downloaded the Avinor mobile app	24.7	28.9	46.4
Entered flight details in the Avinor mobile app	11.8	35.3	52.9
Registered Avinor profile	12.5	32.1	55.4
Follow Avinor on social media	7.2	20.7	72.2
Subscribe to the Avinor e-newsletter	5.4	17.5	77.1
Foreign residents only	Yes	No, but interested	No, not interested
Downloaded the Avinor mobile app	6.9	21.0	72.1
Entered flight details in the Avinor mobile app	3.9	21.3	74.7
Registered Avinor profile	3.3	19.6	77.1
Follow Avinor on social media	3.8	11.3	84.9
Subscribe to the Avinor e-newsletter	2.8	9.4	87.9

Payment options

Question: If you need to purchase something while at this airport, how would you prefer to pay? Select one.



VIPPS I UTLANDET: Snart kan du betale med Vipps i mange europeiske land. Sverige og Spania er høyt oppe på prioriteringslisten. Foto: Kristin Sørdal

3 MÅNEDER

Av



[Kristin Sørdal](#)

Vi har Vipps i Norge, svenskene har «Swish», danskene og finnene har MobilePay og det er andre liknende systemer for mobilbetaling i andre land.



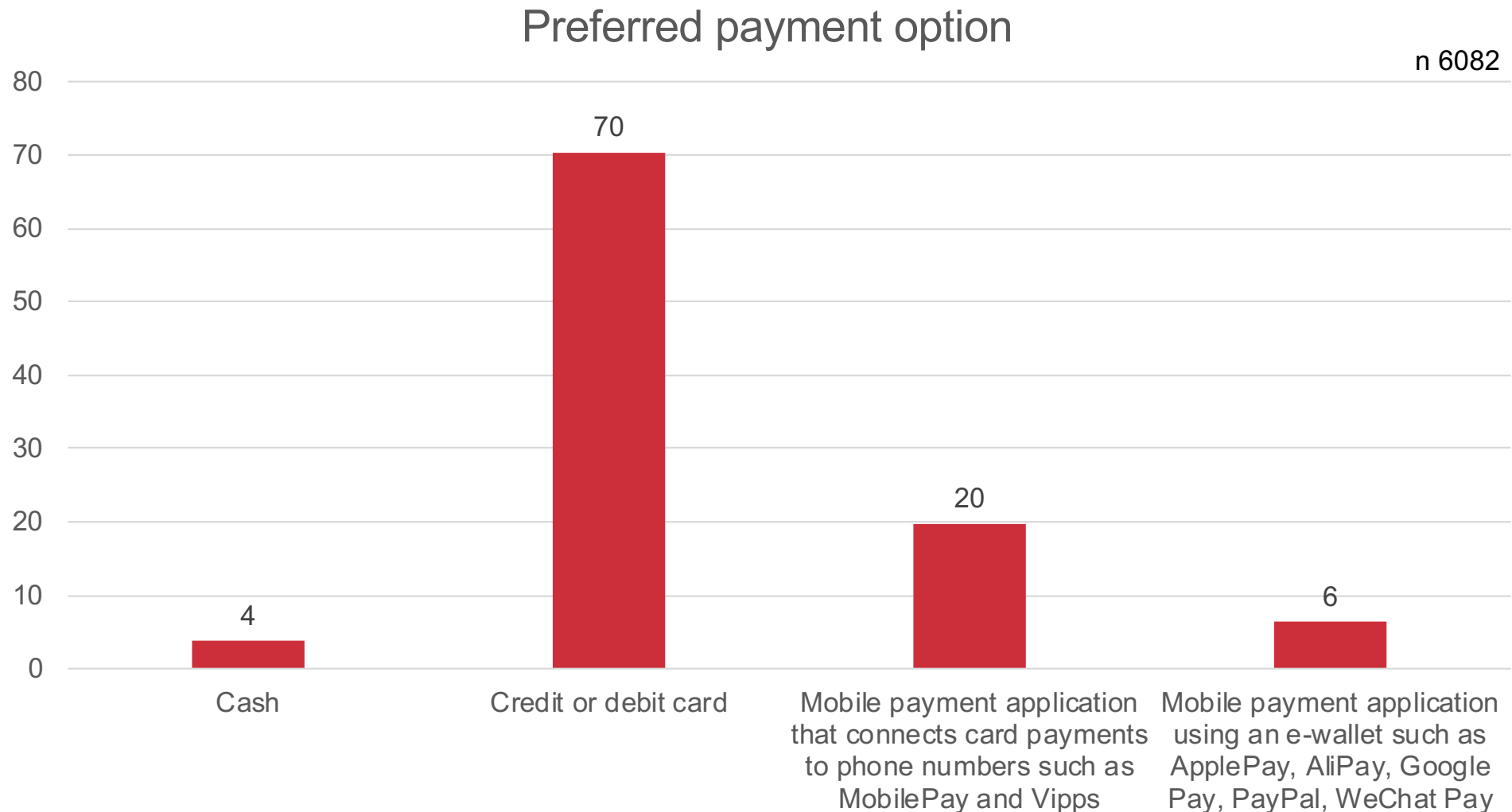
ANNONSE

Nye IONIQ electric.

26%

prefer to use mobile payments if
they need to purchase something at
the airport

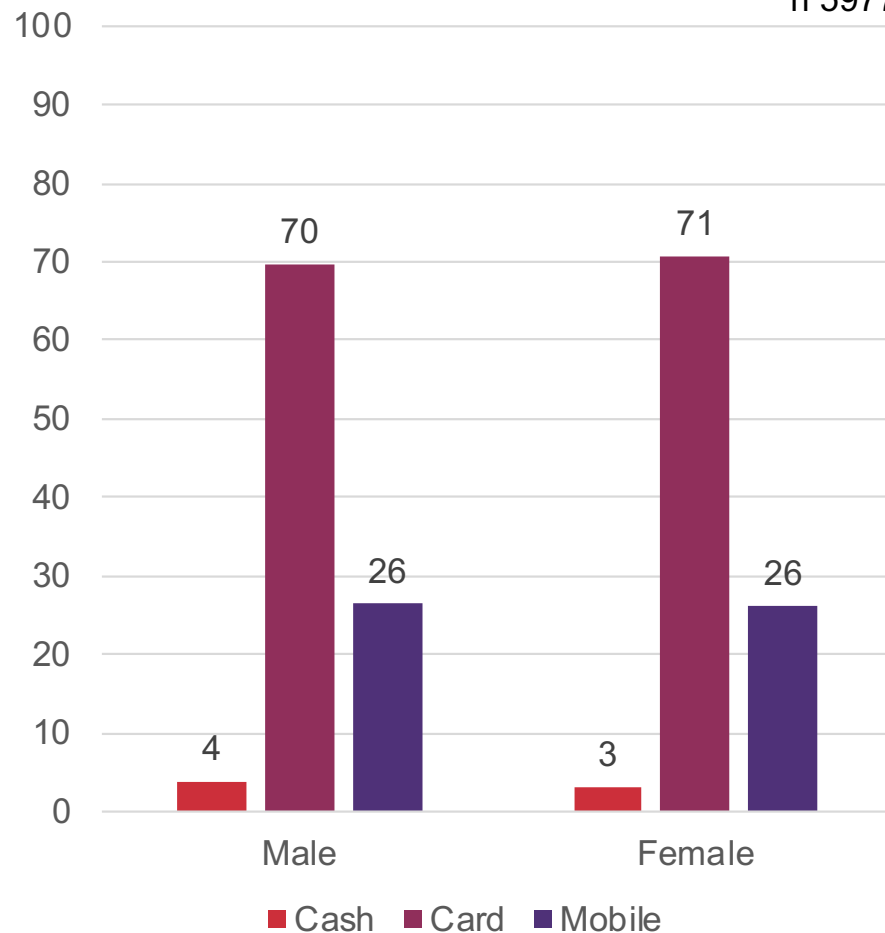
Card payments are by far the most preferred option BUT over a quarter of all respondents now prefer mobile payments



No difference in preference for mobile payments by gender but significantly lower preference among older travellers

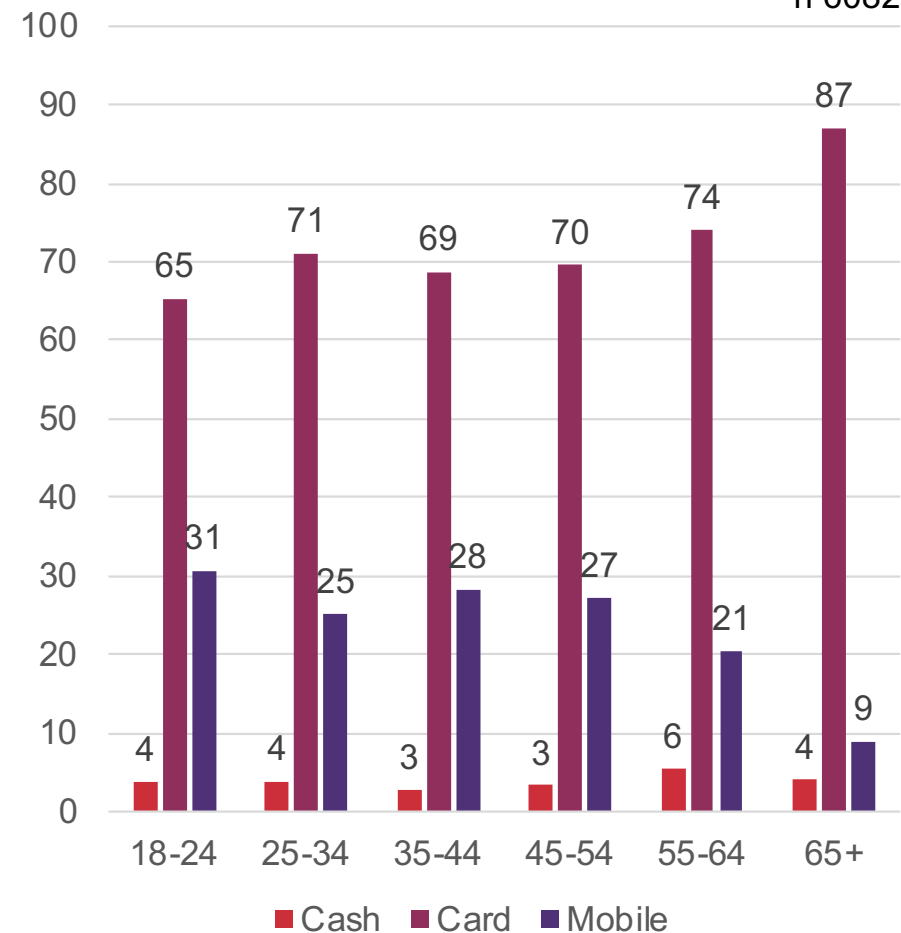
Payment by gender

n 5977



Payment by age

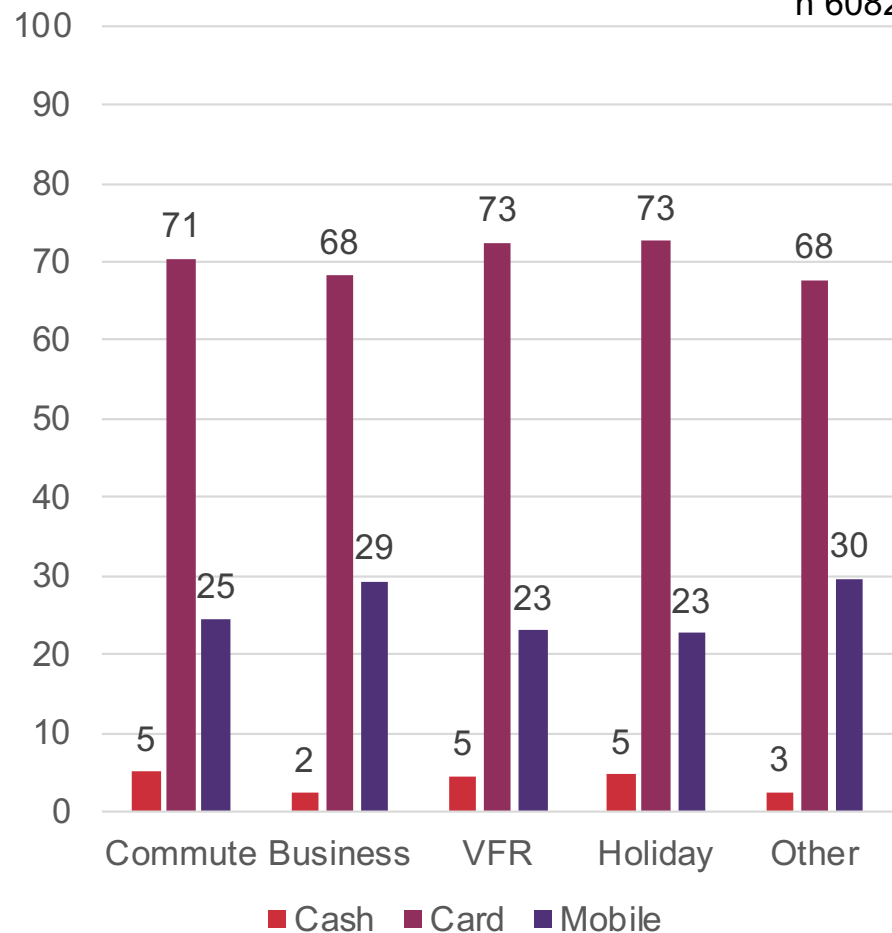
n 6082



Higher preference for mobile payments by business and domestic travellers

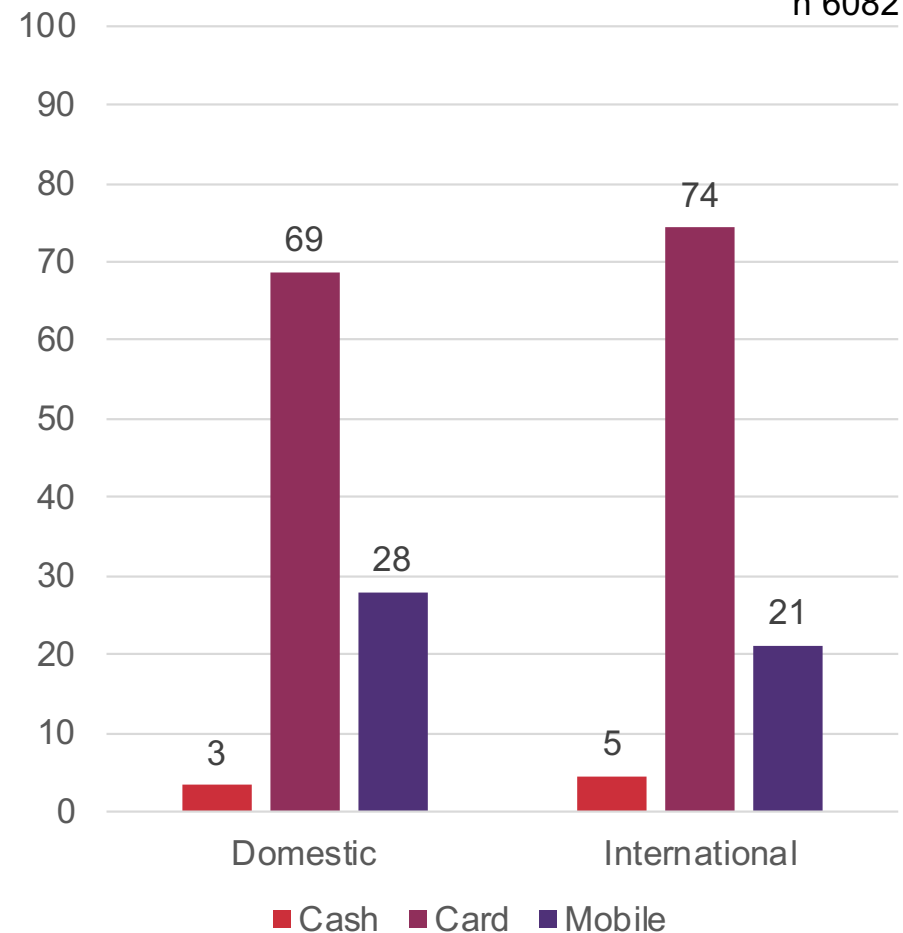
Payment by travel purpose

n 6082

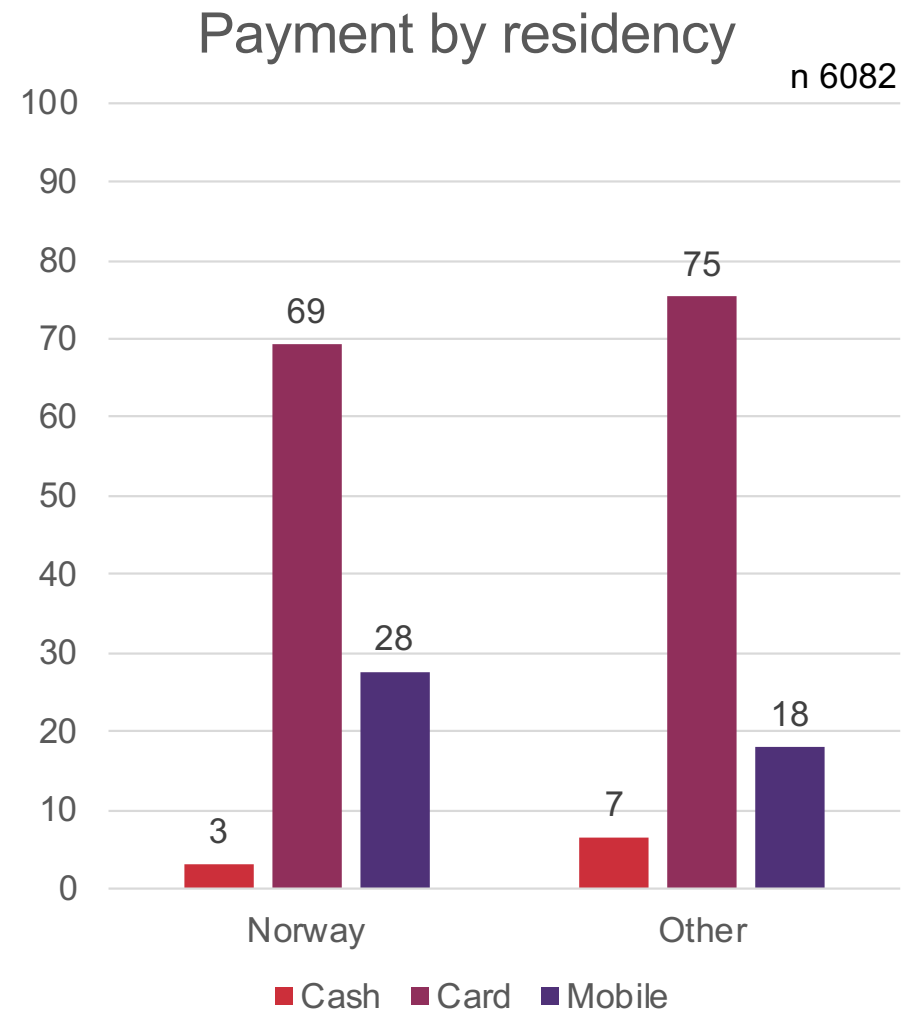
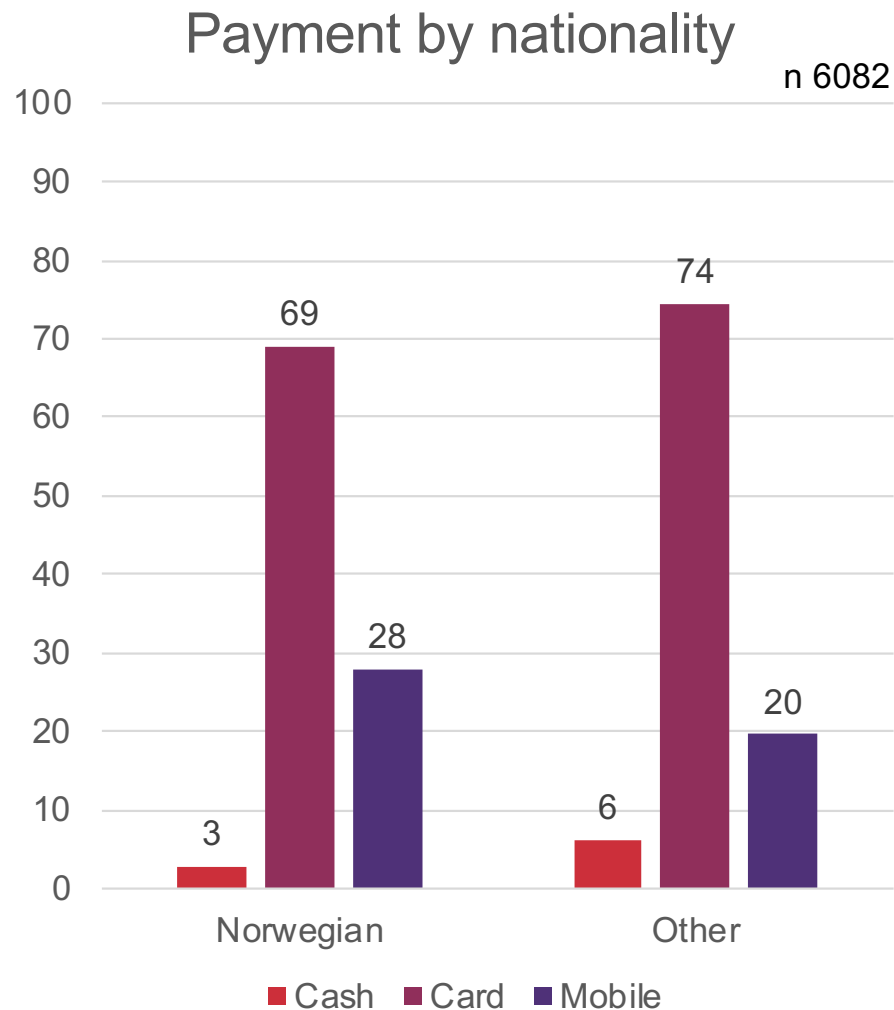


Payment by type of trip

n 6082



Higher preference for mobile payments by Norwegian citizens and residents



Social and ethical issues

Technology vs. privacy: Washington looks to regulate facial recognition tools in 2020

Sea-Tac Airport recently halted use of the technology. Now, lawmakers in Olympia are looking to adopt statewide rules.

by [Melissa Santos](#) / January 3, 2020

The high-tech cameras were set to go live at Seattle-Tacoma International Airport by the end of December. In a first among private airlines at the busy travel hub, Delta Airlines planned to start using facial recognition technology to identify passengers boarding at international gates.

The scan of someone's facial features was intended to replace the traditional process of presenting a passport and boarding pass to get on a plane.

But with questions swirling about the technology's accuracy — as well as its potential to be used for mass surveillance — the Port of Seattle, which runs Sea-Tac Airport, halted Delta's plans. The port commission voted last month to enact a moratorium on new uses of facial recognition technology at port facilities — at least for the next few months, until the port can decide on new, comprehensive regulations.

In terms of personal privacy, respondents are «Not so concerned» about the potential use of digital technologies at the airport

2.4

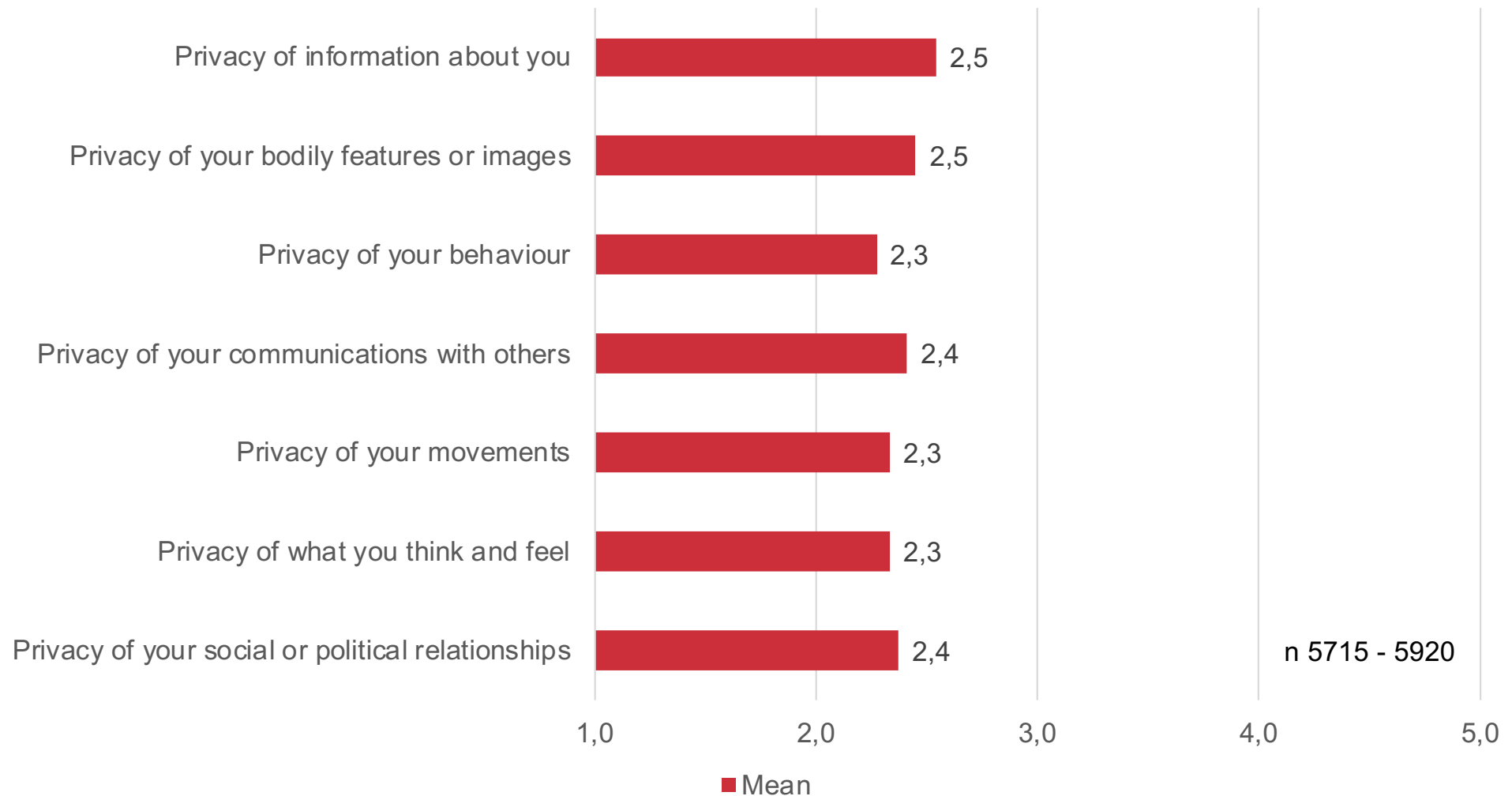
*On a scale of 1 (not at all concerned) to 5 (very concerned)

n 5433

Question: How concerned are you about the potential use of digital technologies at this airport regarding the following issues? Select one answer for each issue.



Little variation in the level of concern for different aspects of personal privacy, although concern is highest regarding «information about you» and «your bodily features or images»



In terms of trust,
respondents are
«Moderately
concerned» about the
potential use of digital
technologies at the
airport

2.6

*On a scale of 1 (not at all
concerned) to 5 (very
concerned)

n 5620



Question: How concerned are you about the potential use of digital technologies at this airport regarding the following issues? Select one answer for each issue.

Little variation in the level of concern for different aspects of trust, although concern is highest for «transparency» and lowest for «prejudice» and «independence»

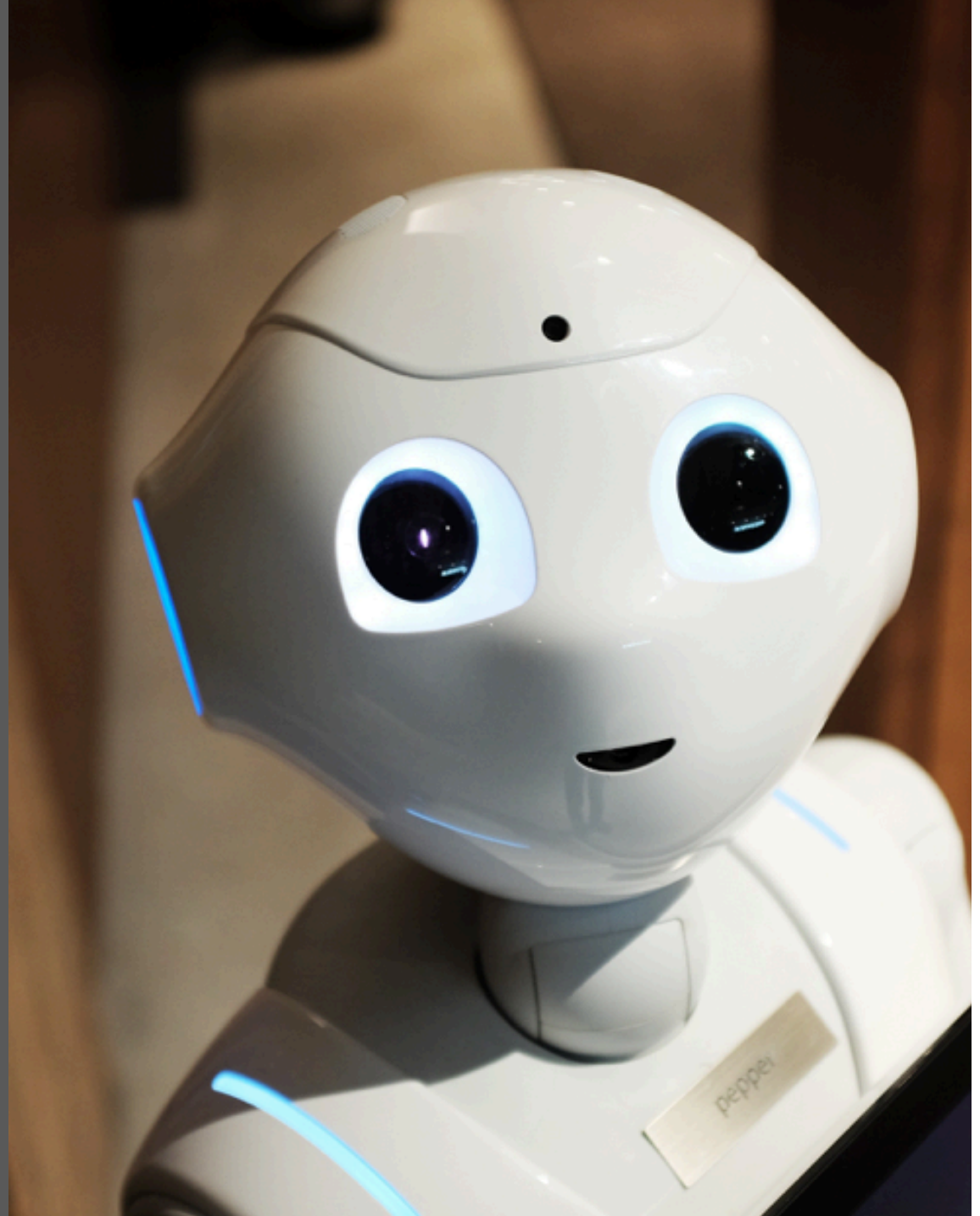


In terms of
standardisation,
respondents are
«Moderately
concerned» about the
potential use of digital
technologies at the
airport

2.6

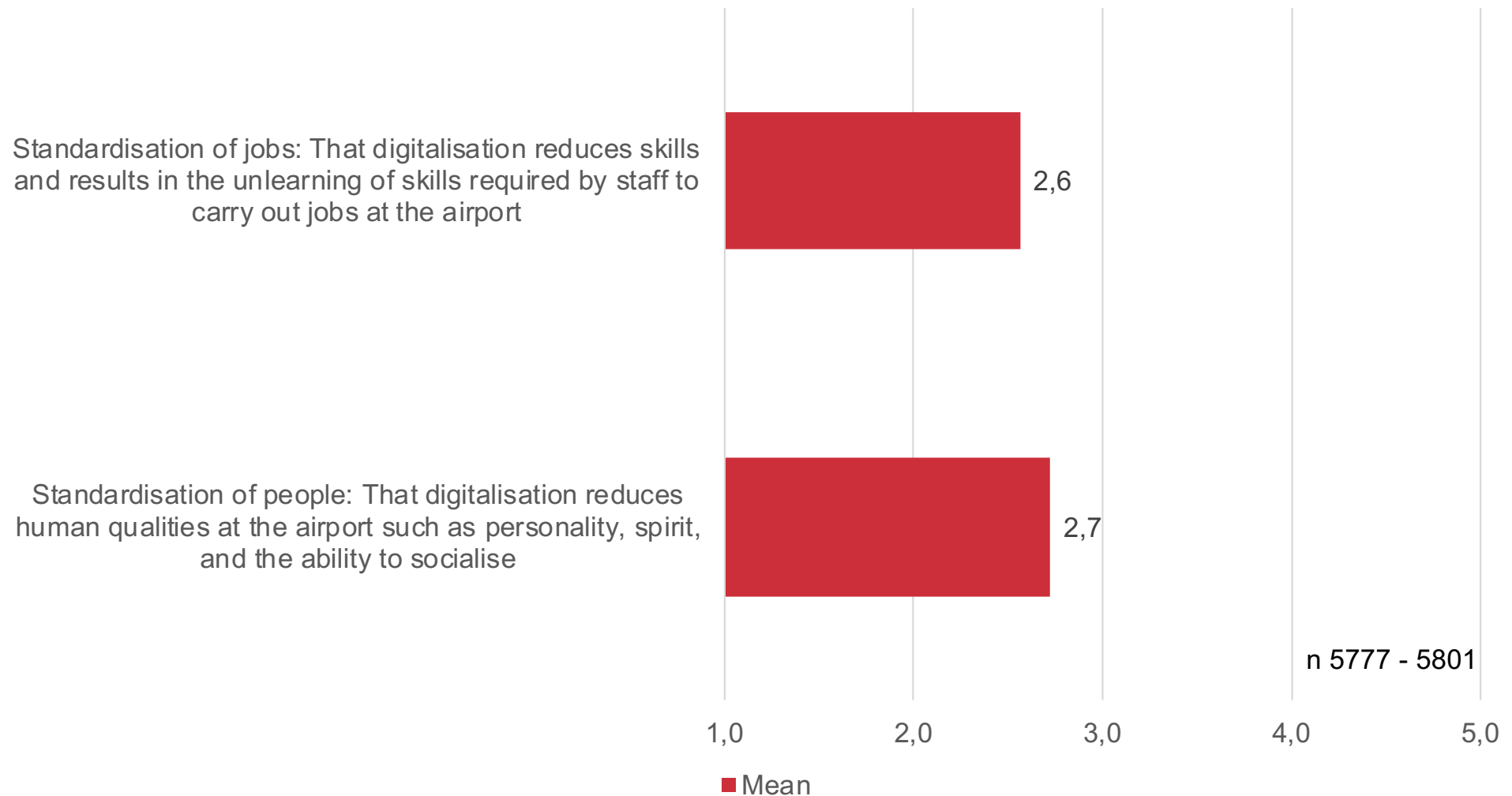
*On a scale of 1 (not at all
concerned) to 5 (very
concerned)

n 5714



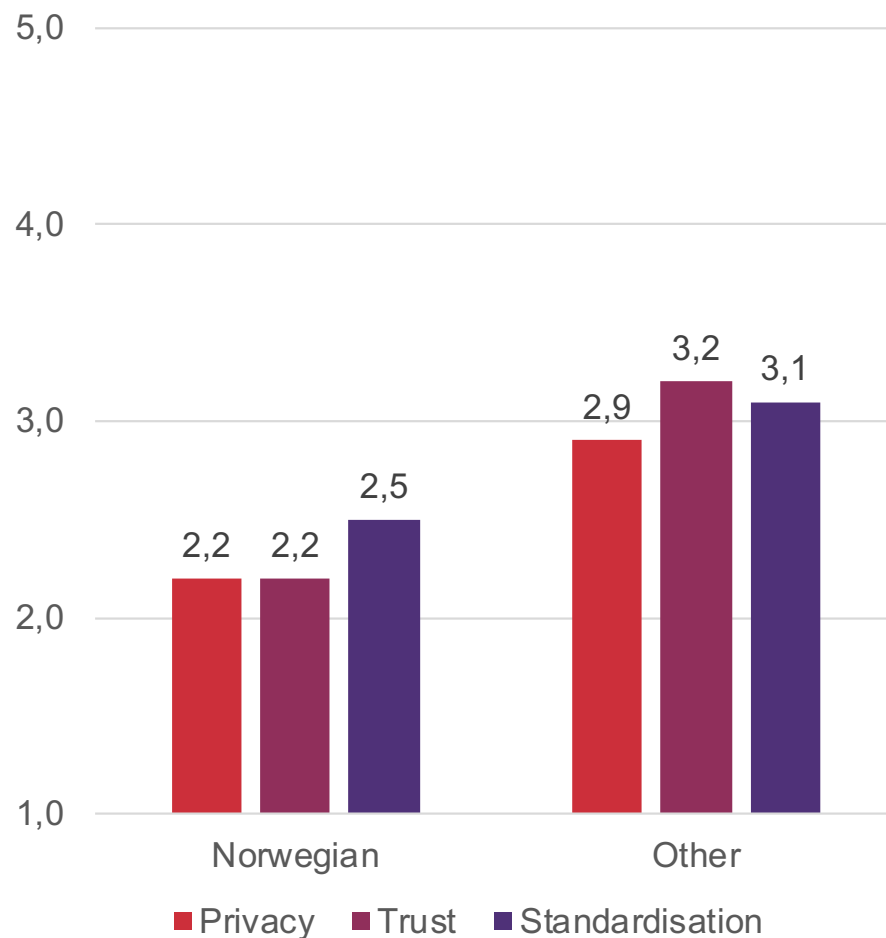
Question: How concerned are you about the potential use of digital technologies at this airport regarding the following issues? Select one answer for each issue.

Little variation in the level of concern for different aspects of standardisation, although concern is highest for the potential to reduce human qualities (standardisation of people)

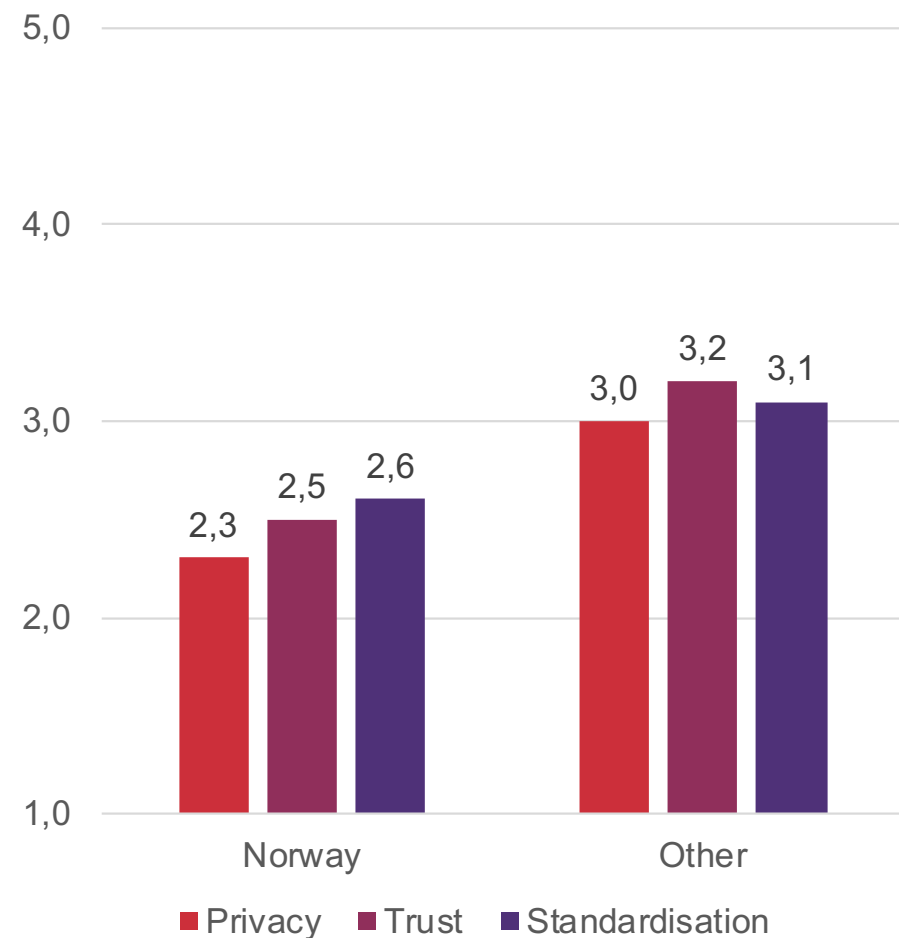


Greater concern regarding privacy, trust and standardisation among foreign versus Norwegian citizens or residents

Concerns by nationality

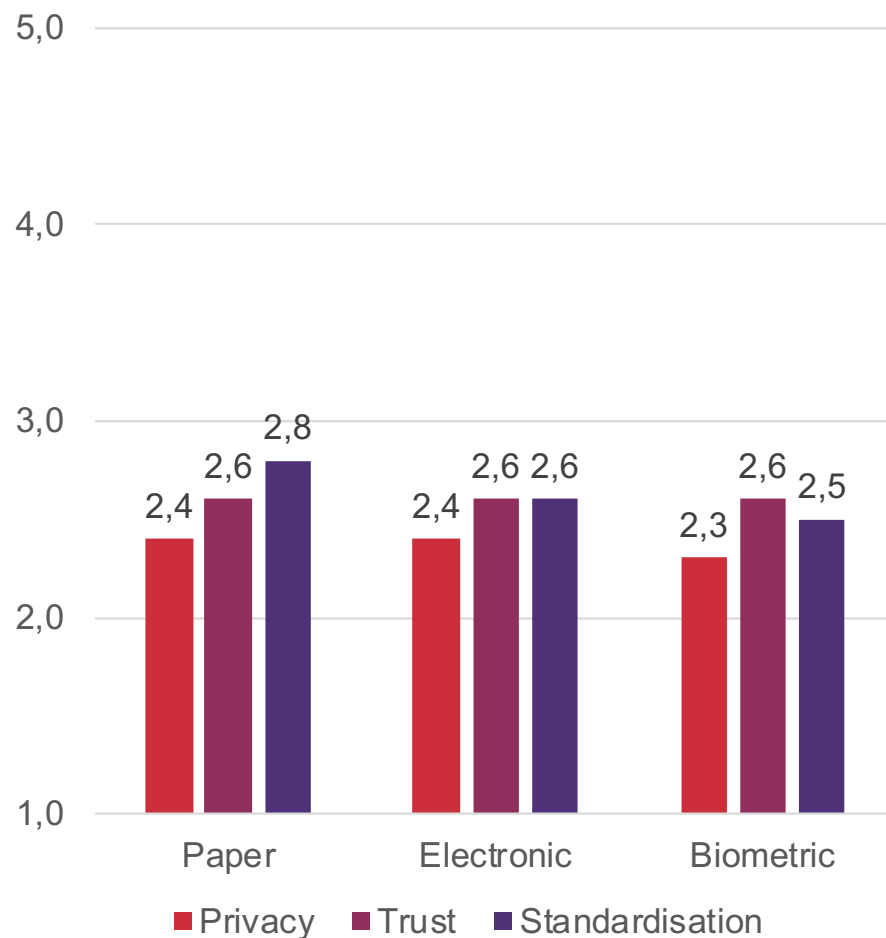


Concerns by residency



Those that prefer biometric options are generally less concerned about social and ethical issues, especially regarding security process

ID by level of concern



Security process by level of concern



PART IV

Further comments from respondents

An open question at the end of the survey asks respondents to «tell us if you have any suggestions on how this airport can use digital technologies to improve the passenger experience, or any concerns that you have about the use of digital technologies at airports»

Categories of further comments

Category	n	Category	n	Category	n
Good/OK as it is	47	Wifi	11	Biometrics (positive)	4
Standardisation of people	33	Food and drink	9	Biometrics (negative)	3
Privacy	28	Transparency	8	People with disabilities	3
Better/customised information	21	Independence	7	Information desk/kiosks	3
Standardisation of jobs	20	Personal ID	7	Boarding gate	3
Efficiency/queue management	18	Check-in	6	Wayfinding	2
Mobile application	15	Seating	6	WC and cleanliness	2
Security control	14	The elderly	4	Accountability and prejudice	1
Safety and security	13	Charging points	4	Health	1
Enough technology already	13	Transfers/connections	4	Other	11

**Social and ethical issues
dominate in the «further
comments» of respondents,
especially regarding
standardisation (of people
and jobs) and privacy**

Respondents are «generally» interested in the use of digital technologies, but they also worry about issues relating to standardisation of people – mainly in terms of reduced «human contact»

- Digital teknologi is ok but i will also see staff around
- Digital teknologi er bra, men jeg syns ikke det skal erstatte personale. Det er bedre at en kan velge hva en ønsker å bruke på flyplassen, enn å ta vekk muligheter for passasjerer til å kunne enten bruke personalet eller digital teknologi, det er opp til hver enkelt hva de foretrekker. Det beste man kan gjør for passasjerer er å gi de valg
- Digitalisering er fremtiden, men ikke alt erstatter mennesker og den service disse kan yte
- En trenger noen ansatte mennesker dersom uforutsette ting oppstår
- At maskiner skal overta menneskers jobb, og vanskeligere å kommunisere om man trenger hjelp!
- Det er meir ein nok teknologi allereie, det er mykje betre å forholde seg til menneske enn maskiner/ robotar. Eg føler vi er på veg inn i eit kaldare samfunn. All denne teknologien, å måtte forholde seg til robotar i det daglige, enten ein skal bestille legetime og må snakke med ei maskin eller ein skal på butikken og handle, trur eg er med og bidreg til at det følest slik
- Enklere kontakt med kunde servis til individuelle flyselskaper i stedet for chatrobot
- Er redd at det blir færre arbeidsplasser, og mindre smidighet med for mye digitalisering av flyplasser
- Er redd det vil bli mer datamaskiner, og mindre personale på flyplassen. Eneste, men stor ulempe
- Fint med modernisering og effektivitet, men ikke glem den den personlige delen av reisen. Et «hei» et smil, og hjelp av noen som er glad og stolt av jobben di gjør
- Generelt bekymret for denne utviklingen, både med tanke på sosiale og private aspekter, men også knyttet til helse grunnet økte nivåer av elektromagnetisk stråling knyttet til bruken av nye scannere
- Ha et alternativ til oss som gjerne vil møte sørvismennesker
- It is very good to go employees at airport thanks all
- Jeg liker menneskelig kontakt
- Kombiner teknologi med menneskelighet det e det som e viktigst
- Liker bedre å prate med folk, enn datamaskiner ??
- Mindre digital, mer folk

- Technology should be our friend but the human element is important too and should not be taken away. Sometimes after a long flight, i am too tired to figure out a new tech or operating system no matter how easy it is and i just want to ask a question and recieve an answer (eg where is the bathroom) . For this reason i think staff still need to be present and visible to commuters but technology can be used to supplement the experience and help staff as well as commuters. Tech should be an additional resource - not replace humans
- Jeg er glad for personlig betjening og hvis der blot er stikkontakter til at lade min mobiltelefon op, så finder jeg ud af de fleste ting selv
- Mye mer Manuel betjening og mindre teknologi
- Må fortsatt være personell som kan hjelpe viss en har spørsmål. Mye lettere enn å snakke med en robot. Ellers, kjør på??
- None, but human contact is vital if/ when needed
- Personlig assistanse vil alltid være bedre enn "live chat" og roboter
- Roboter vil aldri kunne overta det mellommenneskelige møtet med noen som kan hjelpe, veilede og rådgi, eller ta imot frustrasjon og forvirring ved uforutsette opplevelser og hendelser
- Setter pris på å se mennesker på flyplassen
- Spesielt bekymret for personvern brukes til kommersiell utnyttelse og mangel på sosialisering
- Synes det er viktig å kunne henvende seg til mennesker om det oppstår problem. Viktig med nok personale og at de har kunnskap og kompetanse til å svare. Det er OK med skjermer og digital info i kombinasjon med dette, så man ikke trenger å spørre noen om alt. Men ved forsinkelser, helseproblem og kanselleringer o.l. er det greit å kunne spørre en person. Begge deler er viktig
- Syns det er bra med bemannet informasjon
- Teknologi er effektivt og konsekvent, men det trengs også menneskelig assistanse
- Tydelig navneskilt på de ansatte. Det hadde gjort reisen mer personlig og ikke så maskinelt
- Viktig å ikke bare bruke AI, komplekse utfordringer og særtilfeller skjer og da må man kunne snakke med mennesker
- We nede to retning human engagement as part of personal experience when travelling
- Would prefer human interaction, keep jobs for everybody, the current digital methods on phones are good enough, personally think it is not necessary to further advance technologies at airports

Privacy is a concern and often overlaps with other social and ethical issues such as safety and security, independence, transparency, prejudice and accountability. However, there is often a willingness to accept some trade-offs on privacy for more efficient processes as long as data is not stored or used for commercial purposes

- Generelt bekymret for denne utviklingen, både med tanke på sosiale og private aspekter, men også knyttet til helse grunnet økte nivåer av elektromagnetisk stråling knyttet til bruken av nye scannere
- I think digital transformation and automation is impossible to try and prevent - it can add a lot of value in the ease of user experience and speed of service i think that there needs to be caution around using such technology to monitor and profile ordinary citizens but realise this is inevitable as criminals and etc also have access to such technology and may use it for bad reasons. If there is such technology to be implemented, it needs to be done correctly and sensitively so that public perception will remain positive.....
- Jeg ønsker heller ikke at Avinor skal kunne innhente og bruke mine personopplysninger i større grad enn nå. Det fører til økt kontroll og mindre frihet, og det fører til at en pusher reklame. Nei takk til mer markedsliberalisme og markedstenking. Folk bruker flyplassen for å kunne dra videre. Å fly er å dra fra en destinasjon til en annen på kortest mulig tid. Det er et nødvendig onde
- Spesielt bekymret for personvern brukes til kommersiell utnyttelse og mangel på sosialisering
- All bruk av digital teknologi kan føre til fare for økt overvåking og det er en bekymring
- All private must rensing private, and all face or print recognition Will be missused at some point
- Any way that technologies can be used to increase efficiency at security check in as well as increase security in general is great, however i feel concerned about the collection of personal data, the security and potential for abuse of such data
- Bruk av digital teknologi må ikke gå på bekostning av sikkerhet og personlig oppfølging av passasjerene. Men det er flott når det kan redusere ventetid og kø
- Controll of hand luggage without taking things out, waive limit of liquids in the hand luggage, delete any digital or visual information within short time (e.g. one day)
- Er generelt litt bekymret for utviklingen ang. personvern. Det bør lagres minimalt med data om personer, og den bør slettes med jevne mellomrom
- er generelt skeptisk til innsamling av informasjon for personvernets vern
- Facial regocnition is an anti-human mission
- Jeg er bekymret for all informasjon som blir lagret og sentralisert. Er det mye nok info blir det et interessant mål for hackere, og garantert sikkerhet mot digitale innbrudd finnes ikke. Mulighet for ENKELT innsyn i all data som blir lagret er avgjørende
- Følg datasikkerhetsloven for personvern og sørg for at informasjon personlig eller adferd ikke blir bruk for profittering

.....continued

- Heavy use of digital technologies are not very apparent for customers at this airport. Presumably information is stored or used in line with data protection laws which should minimise concern for customers. If the technology is used to improve experience well thats fine, but using it for security or marketing is a different matter. I would expect there to be little need of storing images and information.
- Hovedbekymringen er knyttet til lagring og utilsiktet bruk av personlige data og adferdsdata av flyplassen, 3.part eller uvedkommende
- Ikke bruk ansiks gjenkjenning, gdpr er en ting
- Information for the traveller, not about the traveller
- Improve digitalization but must considered privacy of individual
- Jeg er svært skeptisk til skanning av ansikt, kropp og fingeravtrykk. Føler dette fjerner noe av min frie vilje og personvern
- Om bruken av digital teknologi fortsetter til drt stadiet der informasjon samles og lagres om personer, hvertfall vær påpasselig med å oppbevare den trygt og informere godt og grundig om hvorfor og hvordan det gjøres
- Personlig har jeg ikke lyst på at noen skal ha informasjon om meg som jeg har ikke tillat bare for at jeg skal reise. Jeg må reise for jobben min så er det ikke noe jeg kan gjøre noe om. Jeg vil ikke ha det som jeg tenker på bli en del av sikkerhetskontroll i flyplassen fordi det er ikke noe som skulle gjøre en forskjell
- Privacy is a concern, but i welcome any technology to speed Up any waiting time or help with moving about
- Privacy issues should be taken into consideration
- Serve, not save data
- Some level of privacy needs to be preserved
- The fight to be for gotten after a journey
- Jeg er personlig opptatt av best mulig overvåking da det også gjelder min sikkerhet. Så lenge en ikke har noe å skjule burde det være greit å bli fulgt med på en flyplass. Men selvsagt må sikkerhetsrutinene følges, det mener gjøres i dag

In addition to concerns about reduced «human contact», respondents are concerned about potential job losses (standardisation of jobs)

- Er ikke imot dagens bruk men synest det ikke er nødvendig med mer digital støy. Er også viktig med menneskelig arbeidskraft i fremtiden
- Digital teknologi er bra, men jeg syns ikke det skal erstatte personale
- Digitalisering er fremtiden, men ikke alt erstatter mennesker og den service disse kan yte
- At maskiner skal overta menneskers jobb, og vanskeligere å kommunisere om man trenger hjelp!
- Er redd at det blir færre arbeidsplasser, og mindre smidighet med for mye digitalisering av flyplasser
- Er redd det vil bli mer datamaskiner, og mindre personale på flyplassen. Eneste, men stor ulempe
- Synes det er viktig å kunne henvende seg til mennesker om det oppstår problem. Viktig med nok personale og at de har kunnskap og kompetanse til å svare. Det er OK med skjermer og digital info i kombinasjon med dette, så man ikke trenger å spørre noen om alt. Men ved forsinkelser, helseproblem og kanselleringer o.l. er det greit å kunne spørre en person. Begge deler er viktig
- Would prefer human interaction, keep jobs for everybody, the current digital methods on phones are good enough, personally think it is not necessary to further advance technologies at airports
- Dette kan bli interessant, ville være synd om arbeidsplasser går tapt vel og merke
- Not at expense of Jobs,digital in moderation
- Så lenge teknologi kan brukes til effektivisering uten at det går på bekostning av pasasjerene er det en god ting. Men teknologi fungerer ikke alltid og flyplassen ville blitt relativt tom om ikke de ansatte jobbet her. I tillegg ser jeg ikke behovet for mer drastisk digitalisering MGP at det er greit som det er
- Bekymret at det blir mindre bemanning på flyplasser i framtiden
- Bekymret for at arbeidsplasser vil gå tapt med digitalisering av flyplasser
- Don't use robot when you can give work to somebody
- Employment opportunities might reduce
- I Am ambivalent.... but concerned digital technology puts people out of work and will cause inequality and disorder
- Leser gjennom linjene på denne undersøkelse, at det fort kan bli mindre arbeidsplasser på flyplasser i framtiden. Dette er i så fall skremmende med tanke på sikkerhet blant annet
- Pay tariffwages to people working at the airport!
- Sku gjerne ønske at ting ikke ble helt og altfor teknologisk, slik at det står i fare for å måtte redusere menneskelig arbeidskraft!
- The digitalisation should not steal peoples jobs. It wont solve any of our problrms for example regarding security

Safety and security is an additional social and ethical issue that is often commented on by respondents

- Leser gjennom linjene på denne undersøkelse, at det fort kan bli mindre arbeidsplasser på flyplasser i framtiden. Dette er i så fall skremmende med tanke på sikkerhet blant annet
- I think digital transformation and automation is impossible to try and prevent - it can add a lot of value in the ease of user experience and speed of service i think that there needs to be caution around using such technology to monitor and profile ordinary citizens but realise this is inevitable as criminals and etc also have access to such technology and may use it for bad reasons. If there is such technology to be implemented, it needs to be done correctly and sensitively so that public perception will remain positive
- All private must reusing private, and all face or print recognition Will be misused at some point
- Any way that technologies can be used to increase efficiency at security check in as well as increase security in general is great, however i feel concerned about the collection of personal data, the security and potential for abuse of such data
- Bruk av digital teknologi må ikke gå på bekostning av sikkerhet og personlig oppfølging av passasjerene. Men det er flott når det kan redusere ventetid og kø
- Jeg er bekymret for all informasjon som blir lagret og sentralisert. Er det mye nok info blir det et interessant mål for hackere, og garantert sikkerhet mot digitale innbrudd finnes ikke
- Hovedbekymringen er knyttet til lagring og utilsiktet bruk av personlige data og adferdsdata av flyplassen, 3.part eller uvedkommende
- Jeg er personlig opptatt av best mulig overvåking da det også gjelder min sikkerhet. Så lenge en ikke har noe å skjule burde det være greit å bli fulgt med på en flyplass. Men selvsagt må sikkerhetsrutinene følges, det mener gjøres i dag
- Biometrics has a very dangerous potential, I am okay with digitalisation that can smooth out the process but gathering information to predict what people do is wrong and influential. It skews what people think they need, and has already proved very dangerous in the hands of government and large corporations
- Facial recognition and body scans can fail to recognise a transgender person correctly and possibly put them in danger of prejudice/ embarrassment
- For mye digitalisering gjør at det er større sjangse for at den kan misbrukes!
- Jeg syns sikkerheten er det viktigste. Så lenge de som jobber med informasjon om meg har et skikkelig system og opererer proffisjonnelt så har jeg ingen problem med at informasjonen om meg blir brukt til å øke sikkerheten
- WiFi hacking and weak encryption usedvanlig for data at rest and data in-flight

Independence, transparency and prejudice are additional social and ethical issues commented on by respondents

Independence

- Jeg ønsker heller ikke at Avinor skal kunne innhente og bruke mine personopplysninger i større grad enn nå. Det fører til økt kontroll og mindre frihet, og det fører til at en pusher reklame. Nei takk til mer markedsliberalisme og markedstenking. Folk bruker flyplassen for å kunne dra videre. Å fly er å dra fra en destinasjon til en annen på kortest mulig tid. Det er et nødvendig onde
- Spesielt bekymret for personvern brukes til kommersiell utnyttelse og mangel på sosialisering
- Følg datasikkerhetsloven for personvern og sørg for at informasjon personlig eller adferd ikke blir bruk for profittering
- Heavy use of digital technologies are not very apparent for customers at this airport. Presumably information is stored or used in line with data protection laws which should minimise concern for customers. If the technology is used to improve experience well thats fine, but using it for security or marketing is a different matter. I would expect there to be little need of storing images and information
- Jeg er svært skeptisk til skanning av ansikt, kropp og fingeravtrykk. Føler dette fjerner noe av min frie vilje og personvern
- Alt som ikke brukes til reklame er fint
- Jeg er beskymret for at digital teknologi kan føre til at folk begynner å kontrollere og mishandle andre grovt

Transparency

-If there is such technology to be implemented, it needs to be done correctly and sensitively so that public perception will remain positive
- Mulighet for ENKELT innsyn i all data som blir lagret er avgjørende
- Om bruken av digital teknologi fortsetter til drt stadiet der informasjon samles og lagres om personer, hvertfall vær påpasselig med å oppbevare den trygt og informere godt og grundig om hvorfor og hvordan det gjøres
- I am unaware of what happens to the information collected about me, after I have used the airport
- I grunn er all grunn jeg har til bekymring knyttet til mangel på innsikt inn i hvordan informasjon om meg samles inn og blir benyttet. Jeg personlig hadde kjent meg lettet og mye roligere hvis bare den prosessen var litt mer transparent for meg
- In a time when tech is being used against certain populations, a service in which travellers are alerted to when their info is accessed and the reason why
- Informere folk om hvordan informasjon skal være brukt
- Transparency in the use of digitalization

Accountability and prejudice

-It (tech) can also be used to help keep people accountable for their actions and hopefully reduce prejudice (where present) :)

The largest category of comments is from respondents that are (sometimes cautiously) positive about the use of digital technologies i.e. commenting on how good the airport is or that it is «good enough as it is» – the latter emphasises a common reluctance for change. However, there are also comments that emphasise a desire for change

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> • Alt bra! • Alt er greit • Alt går fint • Alt ser greit ut • Bra som det er • Challenge traditional thinking and let the ideal fly. Success of tomorrow is created here and now • Dette kan bli interessant • Digital teknologi is ok men.... • Digital teknologi er bra, men.... • Digitalisering er fremtiden, men.... • Everything is perfekt! • Everything ok • Fantastisk • Fornoeyd slik det er i dag • Fornøyd med dagens system • Fortsett med det gode arbeidet • Fungerer veldig bra, men løsningene her er fine | <ul style="list-style-type: none"> • Good • Hei, Veldig bra å utvikle takk • Hi everybody Airport Oslo digital system very good • Hi here very good digital tv and screen for time for flight very good than you • Hi, electronically very good thank you • Hi here very good digital tv and screen for time for flight very good than you • Highly recommended • I have no concerns and believe the use og digital technologies Will be positive for thr future • I have no concerns, I can really enjoy this airport • I think it is running smoothly • Ikkje bekymra i det heile tatt, stoler på de • It just can be how is it now • Its gold enaugh får now • La det være som det er • No really. I think is OK like this • None. Happy about the services given | <ul style="list-style-type: none"> • Ok • Nothing needs to be changed, this is the nicest airport ive been in • OSL er meget en meget effektiv flyplass, det elsker vi! • Synes Bodø flyplass fungerer bra som den er • Så lenge teknologi kan brukes til effektivisering uten at det går på bekostning av pasasjerene er det en god ting • The AirPort is already pretty digitalisert • The airport is small and there arent that many flights so not much is needed, i think the airport is fine in its current state • I relly like airports in Norway, they are amazingly clean • This airport is great. No complaints or improvment needed • Veldig bra • Very beautiful airport • Very good • Working fine • You have good services |
|---|--|---|

The role that digital technologies can play on queue management and for airport efficiency in general is sometimes commented on by respondents.....

- Any way that technologies can be used to increase efficiency at security check in as well as increase security in general is great.....
- Bare gjør ting lettere og raskere
- I think digital transformation and automation is impossible to try and prevent - it can add a lot of value in the ease of user experience and speed of service
- I am okay with digitalisation that can smooth out the process but gathering information to predict what people do is wrong and influential.....
- If the technology is used to improve experience well thats fine.....
- Så lenge teknologi kan brukes til effektivisering uten at det går på bekostning av pasasjerene er det en god ting
- Improve digitalization but must considered privacy of individual
- Privacy is a concern, but i welcome any technology to speed Up any waiting time or help with moving about
- Fint med modernisering og effektivitet, men ikke glem den den persolige delen av reisen.....
- Teknologi er effektivt og konsekvent, men det trengs også menneskelig assistanse
- Fungerer veldig bra, men løsningene her er fine
- Effective, and reduce quing time
- Im in support of anything that safely and securely værested efficiency in the airport
- Så lite intervensjon som mulig. Kun avvik på reisen. Brikker reisen
- Bruk av digital teknologi må ikke gå på bekostning av sikkerhet og personlig oppfølging av passasjerene. Men det er flott når det kan redusere ventetid og kø
- Bemanning relatert til kø som oppdsges via netværket
- Tilpasning av bemanning i sikkerhetskontrollen slik at den harmonerer med behovet
- Varsle kø og anbefalt oppmøtetid

.....but some comments are rather negative towards the use of digital technologies at airports, and believe there is already enough or too much use of digital technologies

- Ha fokus på ordentlige fysiske tilbud. Jeg trenger ikke og vil ikke at Avinor skal ha en rolle i mitt liv. Avinor skal være helt usynlige. Hold kjeft og gi meg friheten til å velge hvordan jeg vil løse de oppgavene jeg må gjøre. Trenger virkelig ikke noen hologram drit for å vise veien. Lag bra wayfinding og en fin skandinavisk flyplass som er ren i sin minimalisme
- Er ikke imot dagens bruk men synest det ikke er nødvendig med mer digital støy.....
- the current digital methods on phones are good enough, personally think it is not necessary to further advance technologies at airports
- Det er meir ein nok teknologi allereie, det er mykje betre å forholde seg til menneske enn maskiner/ robotar. Eg føler vi er på veg inn i eit kaldare samfunn. All denne teknologien, å måtte forholde seg til robotar i det daglige, enten ein skal bestille legetime og må snakke med ei maskin eller ein skal på butikken og handle, trur eg er med og bidreg til at det følest slik
- Det er nok som det er. Det meste er overflødig for min del
- Dette var for mye for meg å ta inn, grusomt om alt dette blir gjennomført
- Negativ til for mye digital teknologi
- Ser ikke hensikten med å utvikle flyplassen sine tjenester til noe digitalt
- Synes teknologien er skremmende og veldig sårbar, mye fordi det ikke er alternativer
- Tviler på at teknologi kan forbedre passasjeropplevelsen
- Enkelt og greit å bruker digital teknologi... ??
- Jeg har inntrykk at alle ønsket å kaste seg på teknologibølgen uten å samkjøre med andre applikasjoner/selskaper med oppdateringsvarsler o.l. Som gjør det hele masete og irriterene - istedenfor nyttig ved å skape et Helhetlig integrert system
- Ringvirkningen av digital teknologi er vanskelige å forutse. Det er i mine øyne viktig å være obs på dette

The need for better or more customised information is often commented on by respondents

- Beacons I form av varslingen
- Bedre informasjon om eventuelle forsinkelser og lignende
-info om forsinkelser, vær og utfordringer flyselskapene ikke informerer kundene sine om kunne vært bra
- Det med køtider på bagasje og sikkerhetskontroll var lurt. Også et estimat på hva det pleier å være den gitte dagen den gitte tiden
- Flight status notifications
- Gi beskjed om forsinkelser, gi beskjed om sitteplasser og hvor det er ledig
- Hi on tv information explain good
- Hi, it is very good to do modern technologies sign
- Hi, very nice to see timing om screen time to time before 3 hrs thank YouTube
- I frankfurt hade de en TV-Skærm der man kunde ringa på kundservice, da de svarte kom de opp på skærmen og man kunde da få den hjelp man trente, det var lurt og modernt syns jeg
- Info om lounge
- Informasjon hele tiden på flyets posisjon
- Informasjon og forenkling
- Informasjons tavle. Med kart og oversikt Over flyplassen og hvor lang tid det vil ta meg og gå dit. Annenhver farge på skjerm der det står hvilken gate som er din
- Information about gate nummer / changes, train or bus delays is always welcome
- Mer informasjon om reise status,bagasje tid osv
- More information about how to use them
- Show Security Wait times AS enter AirPort
- Vite hvilken buss jeg skal ta til å ha nok tid til fly til trondheim
- Værinfo på destinasjonene
- Det må være et telefonnummer skrevet på synlige plasser på flyplassen for å ringe den i tilfelle vi lurer på noe

Security control is often commented on by respondents

- Bruk av mer digitalisering for å gjøre sikkerhetskontrollen mer smidig.....
- Any way that technologies can be used to increase efficiency at security check in as well as increase security in general is great.....
- Controll of hand luggage without taking things out, waive limit of liquids in the hand luggage, delete any digital or visual information within short time (e.g. one day)
- Alt går ganske sakte på sikkerhetskontroll. Infrarøde kameraer hadde sikkert gjort en stor forskjell
- Bare gjør ting lettere og raskere. Spesifikt sikkerhetskontroll
- Enklere security og innsjekking
- Faster security check
- Forenkle sikkerhetskontroll
- Gjøre sikkerhetskontroll mere effektiv gjennom digitalisering
- Kjappere sikkerhetskontroll ved scanning. Flere billettlesere ved gate for raskere boarding
- Overveiktsgebyr og betaling for dette er utrolig knotete på Bodø flyplass. Vet ikke hvordan det er på andre flyplasser. Gardermoen har utrolig treig bagasjelevering. Norwegians sin sikkerhetskontroll er betraktelig bedre enn SAS på OSL. Burde bli standard. Bergen sin syns jeg ikke er like vellykket. Ting som gjør at sikkerhetskontrollen går raskere og smidigere er det som vil gi meg mest økt tilfredshet Raskere sikkerhetskontroll
- Rett gjennom sikkerhetskontrollen er bra
- Scann istedet for manuell sikkerhetssjekk
- The thing that bothers me the most is the security check. Very inconvenient way having to take off belts remove liquids and etc

Respondents also comment on several other key processes at airports such as check-in, boarding, transfer/connections and wayfinding

Check-in

- Easy to online check in and baggage
- En trivelig stemme som leser opp det som står når man skriver ut boardingkortet??
- Få større kasser ved innsjekk
- Hadde vært kjekt med digitalisert innsjekk og skanning av gjenstander. Tiden man bruker her kan fort ta lang tid
- Tviler på at teknologi kan forbedre passasjeropplevelsen. Flyplassen trenger bedre renhold (toaletter) og bedre effektivitet ved innsjekking
- Electronic tag for baggage

Boarding and/or automated gates

- Flere billettlesere ved gate for raskere boarding
- Reduce the time spending to depart
- Satse mere på skannesystemmer

Transfer/connections

- Få ordnet connecting flights. Katastrofe at vi som reiser med håndbagasje må heilt ut for å sjekke inn igjen
- Information at connection flight
- It should be clearer how to change gates without going through security again. I flew from Copenhagen to Stavanger with a transfer in Bergen and no signs were shown
- Sende bagasje gjennom til regional flyplass også fra andre flyselskap enn sas og norwegian

Wayfinding

- Alt er greit, avstander korte. Tidligere har det vært handikap parkering på P2., rett over nye parkeringshus. Kan ikke finne den igjen
- More English wayfinding

Respondents have mixed feelings about the use of digital forms of personal ID and biometrics

Personal ID

- Er beskymret for digital ID og at det digitale skal bli for avansert for eldre
- Digital legitimasjon
- Digitalising passports so they can be combined with boarding passes so only one item is needed
- I større grad må eksisterende tilbud benyttes, feks digitale boardingkort
- Oslo Airport had actually been a great experience with immigration med boarding pass scans compared to other countries ive visited including the US. The only other place i find tech friendly is Hong Kong. If you have a HK ID csrd you can scan this to pass through security quickly
- Scan smart gate passports for countries outside EU for faster transit
- Oslo Airport had actually been a great experience with immigration med boarding pass scans compared to other countries ive visited including the US. The only other place i find tech friendly is Hong Kong. If you have a HK ID csrd you can scan this to pass through security quickly.

Biometrics (positive)

- Alt går ganske sakte på sikkerhetskontroll. Infrarøde kameraer hadde sikkert gjort en stor forskjell
- Biometriske greier hadde vært naist
- Infrarøde kameraer som i Amsterdam burde brukes her

Biometrics (negative)

- Biometrics has a very dangerous potential, I am okay with digitalisation that can smooth out the process but gathering information to predict what people do is wrong and influential. It skews what people think they need, and has already proved very dangerous in the hands of government and large corporations
- Jeg er svært skeptisk til skanning av ansikt, kropp og fingeravtrykk. Føler dette fjerner noe av min frie vilje og personvern
- Facial recognition and body scans can fail to recognise a transgender person correctly and possibly put them in danger of prejudice/ embarrassment
- Ser ingen grunn til å bruke ansiktsgjenkjenning istedet for pass/førererkort

Several respondents comment on the provision and use of (airport) mobile applications

- Det har skjedd litt for ofte at på Avinor appen ikke står hvilken bånd bagasjen kommer på. Jeg vil helst ha det at gate nummer også står på Avinor appen
- Forbedre varsling i Avinor app. Må gå an å skru av etter du har kommet ombordstigning flyet
- App med informasjon, mulig det er fra før
-Også beksymret for at det skal bli brukt 100 forskjellige apper på en flyplass.. som Avinor, sas, wiss, osv
- Enkle, oversiktlige og ryddige mobiltjenester
- Gate oversikt lengere frem fx på app eller Google
- Hadde vært fint om man kunne få info om flyvning osv på mobilen eller en egen app. Og at man kunne sjekke et sted, type en app hvor lang ventetid det er i sikkerhetskontrollen for å planlegge reisen til flyplassen bedre hvis man reiser uten bagasje
- Ikke finn på kruttet på nytt. Bruk de appene som ligger på folk telefoner fra før. Wallet etc.....
-Parkingsapp er veldig dårlig
- Kople Avinor appen opp mot tinder. Da hadde det blitt liv her!!
- Mer informasjon angående bruken av apper
- Skulle gjerne hatt en app som viser kart over hele flyplassen og viser ting som hvilke butikker/resturanter man finner ved de ulike delene av flyplassen, hvor toalettene ligger, og hvor man kan fylle vann, ta ut kontanter osv. Evr kunne man også brukt appen til å finne gaten sin og hvor lang tid det tar å gå til den
- Som hørselshemmet er visuell informasjon veldig positivt. Det å få nødvendig informasjon om reisen på mobil er nyttig
- To install a particular application in tour device for everything is not a good idea
- Ville vurdert å laste ned app etc om den kommenterte sikkerhetskontroll kø, reisetid vær og flyforhold, anbefalt tid å være på flyplassen, kø dit etc

Wifi and food and beverage is also commented on by respondents

Wifi

- WiFi fungerer fint
- WiFi hacking and weak encryption usedvanlig for data at rest and data in-flight
- The Wi-Fi-basestasjoner kind of slow. So maby faster wifi
- Bedre nett
- Bedre wifi som man eventuelt kan betale for
- Forbedre nettilgang for passasjer vedrushtider på flyplassene
- Gratis WiFi burde være tilgjengelig for alle
- I found it hard to connect to the free wifi at this AirPort
- Internet dekning er veldig dårleg. Ønsker blir bedre
- Maintain high speed of internet. Easy access
- Tilby tydeligere gratis sikker wifi som er rask

Food & beverage

- Digital matbestilling?
- Selvstendig digitalisert kjøp av mat og drikke
- Bestille mat og øl på bordet man sitter ved
- Mer glutenfri mat
- Maten, nudler og biff er elendig. Smaker seigt
- Provide more food options in the domestic departementet area
- Selvbetaling på kiosk
- Billigere priser
- Lower the price of alchohol

There are a selection of other services that respondents comment on such as information desks/kiosks, toilet facilities and cleanliness, charging stations and seating areas. Also, concern about the health implications of new scanning equipment

Information desks/kiosks

- An information Desk after security check-in
- More help kiosks
- Need an information desk in The airport to assist passengers for any concerns

WC and cleanliness

- Flyplassen trenger bedre renhold (toaletter)
- Toilets need to be improved in usability. And cleanliness

Charging stations

- Hadde vært kjekt med et kart over ledige sitte plasser og stikkontakter/laddestasjoner
- Please do not shut airport to night, provide some dormitory for long transit. Provide charging points
- We need more mobile charging stations
- You need more plugs

Seating areas

- Hadde vært kjekt med et kart over ledige sitte plasser og stikkontakter/laddestasjoner
-gi beskjed om sitteplasser og hvor det er ledig
- Bedre områder man kan sitte
- Bedre plasser å sitte
- Flere sitte-områder
- Mer behagelige sitteplasser

Health

- Generelt bekymret for denne utviklingen, både med tanke på sosiale og private aspekter, men også knyttet til helse grunnet økte nivåer av elektromagnetisk stråling knyttet til bruken av nye scannere

Some respondents express concern or opportunities that digital technologies might have for elderly travellers or PwD. There are also a selection of «Other» comments

Elderly

- Er beskymret for digital ID og at det digitale skal bli for avansert for eldre
- Not everybody knows how it Works like elderly
- Sørge for at eldre folk forstår digitale teknologien på flyplassen
- Under utviklingen sørgefor eldre som ikke klarer

People with disabilities (PwD)

- Som hørselshemmet er visuell informasjon veldig positivt. Det å få nødvendig informasjon om reisen på mobil er nyttig
- Make hearing assistance easier to obtain
- Rullefortaug for handikappede

«Other»

- En video som alle kan se på nettsiden deres, som gir en liten "opplæring" på digitaliseringen av flyplassene
- En kortfilm som viser digitaliseringen av flyplassen når dette blir gjort så at alle blir oppdatert
- Bingo
- Help mothers to manage the pains of babies during the flight
- 3d hologram hadde vært kult
- Make more travelators
- Meir miljø venlige ting
- Please do not shut airport to night, provide some dormitory for long transit
- There is no baggage lockers at Bergen airport which looks like a new airport but not having lockers there shocked me. I had to carry my baggages to city center and find a locker there
- Why are you taking services tales when passengers want to Get back cash tax free??
- You should do smoking areal arter the terminal

PART V

Summary of key findings

Pre-purchase online

- 60% would be interested in pre-ordering something online from their airport, especially foreign travellers or residents
- Top 6: transport to/from the airport (25%), fast track security (24%), airport lounge access (21%), food or drink to collect at the airport (17%), car parking at the airport (13%), tax free shopping to collect at the airport (13%)

Boarding pass

- 39% would prefer to access their boarding pass via a mobile application, especially business travellers, Norwegian citizens and residents, and those travelling domestically
- 27% would prefer to access their boarding pass via a self-service kiosk. Only 15% with staff at a check-in desk
- An exception is with those aged 65+ who prefer to use a self-service kiosk (42%) or staff at a check-in desk (21%)
- 46% still prefer to access their boarding pass via paper-based sources. However, most passengers (55%) now prefer to have an electronic pass on their mobile device

- 52% would prefer to use electronic forms of ID at each airport check-point (i.e. mobile-based boarding pass combined with a passport). 32% would prefer to use paper ID. 16% would prefer to pre-register and use biometric ID
- Older travellers aged 65+ are more in favour of using paper forms of ID and in less favour of using biometrics. Business travellers and international travellers are in most favour of using biometric ID
- Note that this is contradicted by responses regarding security screening because 53% would prefer to use biometrics for a walk-through experience versus 47% that would prefer the current situation where items need to be removed. Travellers may therefore be interested in trading-off concerns regarding biometrics if it can simplify security screening

Checked-in baggage

- 69% would travel with baggage. 7% with outsize &/or more than one item
- Self-service kiosks are the preferred option for «tagging» bags (40%). However, there is also strong demand for using permanent digital bag tags to check baggage in from a mobile device (32%), which is a high % given that the product is not widely available or known about
- Travellers aged 65+ are least interested in using permanent digital bag tags (15%) while business travellers are most interested (43%) and are the only «travel purpose» category that would prefer them to other options
- A quarter of all respondents (25%) would prefer to get their baggage «tagged» by staff at a check-in desk
- There is little interest in the use of off-site «bag-drop» options. Instead, respondents would prefer to drop their baggage at a self-service bag drop (66%) or with staff at a check-in desk (25%)
- Demand for off-site options increases by 82% for travellers with additional or outsize items but is still a fairly small proportion of all respondents (15%)

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- Self-service bag drop is the preferred option for travellers of all age groups, although older travellers are more interested in dropping their baggage with staff at a check-in desk (32% of those aged 65+) than younger travellers (20% of those aged 18-24)
- Holiday/weekend travellers, those travelling abroad, and foreign citizens or residents are also more interested in dropping their baggage with staff at a check-in desk (31% of holiday travellers, 31% of international travellers, 34% of foreign citizens, and 37% of foreign residents)
- This is to be expected given that they are more likely to travel with greater loads of baggage. For instance, international travellers are 29% more likely to travel with baggage and 33% more likely to travel with outsize or additional items than domestic passengers

Security screening

- Over half of all respondents (53%) would be interested in using biometric and other technologies for a walk-through security screening experience compared to the current process that involves removing items for screening. However, only 16% would prefer to use biometric forms of ID
- Male travellers (57%) are more interested in using the biometric option versus female travellers (49%). Travellers aged 65+ are least interested (37%)
- There is a greater interest for the biometric option among business travellers (60%), for instance, compared to VFR that are least interested (45%). There is also more interest among Norwegian versus foreign citizens and residents (55% Norwegians versus 47% foreign, and 54% that live in Norway versus 49% that live abroad)

- Respondents could select several options so percentages do not equal 100
- A human touch is the preferred option for customer services (58% would prefer to deal with staff in person and an additional 18% with staff via phone or a video link and 18% with staff via an online chat service)
- However, there is also strong demand for touchscreen self-service information kiosks (53%) and scannable QR-codes (21%)
- Respondents are least interested in chatbots (17%), mobile-based augmented reality (16%), holograms (14%) and robots (13%). However, much of this could be down to a lack of awareness for such digital approaches, and a lack of understanding for how they work in practice

Customised information

- Respondents could select several options so percentages do not equal 100
- 92% would be interested in receiving customised information to their mobile device from the airport
- Respondents prefer «functional» information versus «commercial» or «travel planning» information. For instance, the top 3 are: flight status information (selected by 68%), queuing times (42%) and information regarding time/distance to my gate (36%). Only 10% would be interested in information about airport products and services to buy including offers and competitions, and 9% would be interested in travel tips
- Younger travellers are more interested than older travellers with 96% of those aged 18-24 being interested compared to 88% of those aged 65+

«Connectedness» to Avinor

- 22% have downloaded the Avinor mobile application to their mobile device but only 50% of those people registered their flight details in it for their current trip, which is interesting given that 92% expressed an interest in receiving customised information from the airport to their mobile device, especially regarding flight status, queuing times and gate information
- Norwegians are 57% more likely to have downloaded the Avinor mobile application compared to foreigners, and 13% more likely to follow Avinor on SoMe. In addition, Norwegian residents are 72% more likely to have downloaded the Avinor mobile application compared to foreign residents, and 47% more likely to follow Avinor on SoMe

Payment options

- Airport travellers are a «cashless community»
- 70% prefer to use a credit or debit card if they need to purchase something at the airport. Only 4% prefer to use cash – meaning it is difficult to eradicate that option altogether but that it is perhaps the way things are going
- Over a quarter of all respondents (26%) prefer to use mobile payments – the majority of those preferring to use mobile payment applications that connect card payments to phone numbers such as Vipps and Mobile Pay (20%) versus e-wallets such as ApplePay, Ali Pay, Google Pay, PayPal and WeChat Pay (6%)
- There is a greater preference for mobile payments among younger versus older travellers, for instance, 31% aged 18-24 compared to 9% for those aged 65+. Also, higher for business travellers (29%) compared to 23% for VFR and holiday/weekend, and Norwegian citizens and residents (28%) compared to foreign citizens (20%) and residents (18%)

Social and ethical issues

- In terms of personal privacy, respondents are «not so concerned» about the potential use of digital technologies at the airport (score of 2.4 on a scale of 1 «not at all concerned» to 5 «very concerned»)
- In terms of trust, respondents are «moderately concerned» (score of 2.6), especially for issues relating to transparency, safety and security, exploitation and accountability. Less so for issues relating to independence and prejudice
- In terms of standardisation, respondents are «moderately concerned» (score of 2.6). Concerns are slightly greater regarding «people» issues such as reduced human contact compared to «job» issues such as reduced employment. However, both are scored as a moderate concern

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- Norwegian citizens and residents are significantly less concerned about social and ethical issues compared to foreign citizens and residents, especially regarding privacy and trust where Norwegian citizens are «not so concerned» compared to foreign citizens that are «moderately concerned». Similar differences exist regarding standardisation of people and jobs but respondents are «moderately concerned» when values are rounded up. The differences no doubt reflect the greater brand awareness and confidence that «home travellers» have for Avinor
- Respondents that prefer biometric options regarding personal ID and security processes at the airport are generally less concerned about social and ethical issues. This emphasises the need for airports to encourage confidence among passengers when seeking to introduce such initiatives. Travellers seem more willing to adopt such technologies as long as they have confidence that their personal privacy will be protected, along with safety and security, and that Avinor is transparent and accountable for its actions, and acts without prejudice or exploitation



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