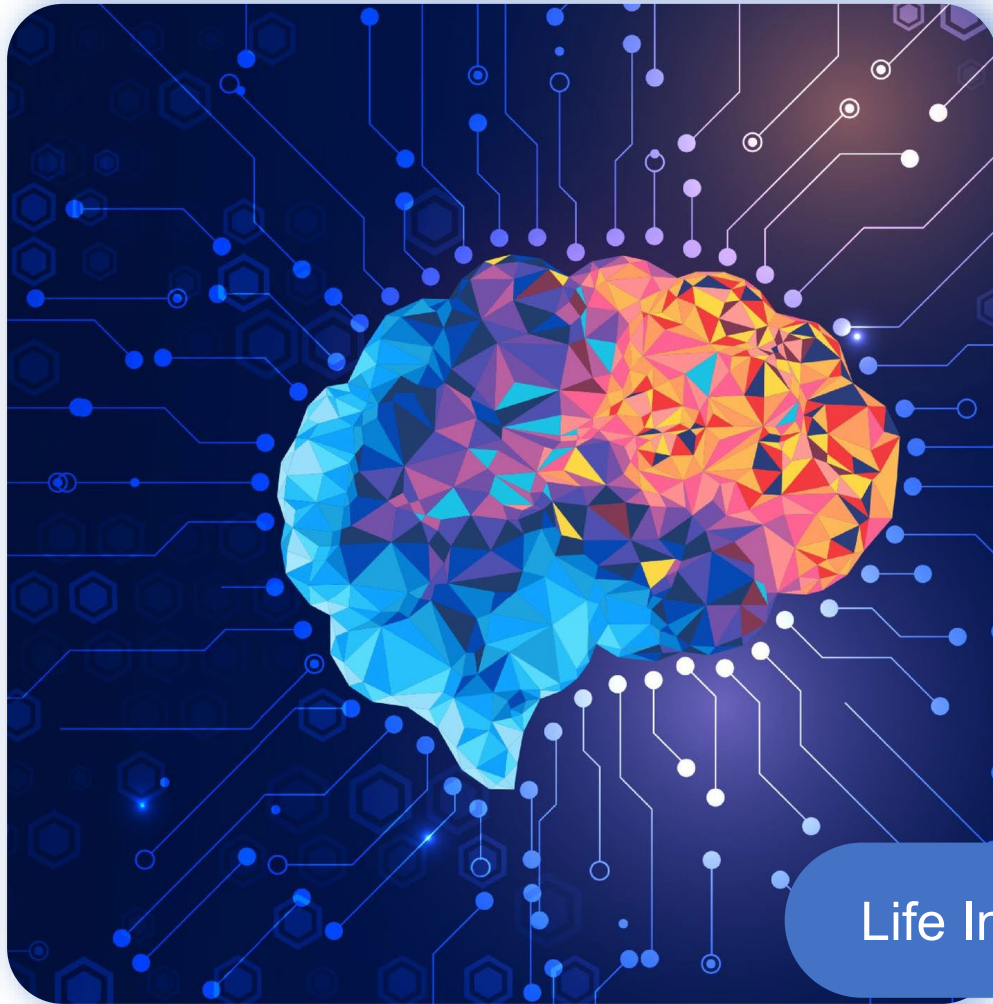




Harnessing the Potential of Behavioural Science across the Life Insurance Value Chain

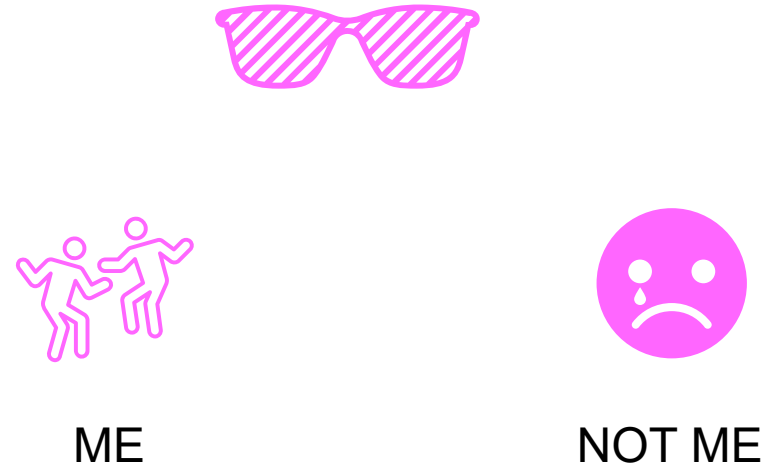
Gabriele Hollmann
Head of Israel&subregion
October, 2 2023

Life Insurance Applications

Behavioural Science

Optimism bias

Optimism bias is to overestimate the likelihood of positive events and to underestimate the likelihood of negative ones.



Behavioural Science

Agenda

- 01** What is Behavioural Science?
- 02** Time Preferences & Loss Aversion
- 03** Engagement and Health Incentive Programs
- 04** Framing & Social Norms in Underwriting
- 05** Mental Accounting
- 06** Life Insurance Application
- 07** Recent and Current Research

What is Behavioural Science?

What is Behavioural Science?

Behavioural Science is a very broad field

The study of why we do what we do¹⁾

What is Behavioural Science?

Behavioural Science is a very broad field



What is Behavioural Science?

Behavioural Science is a very broad field

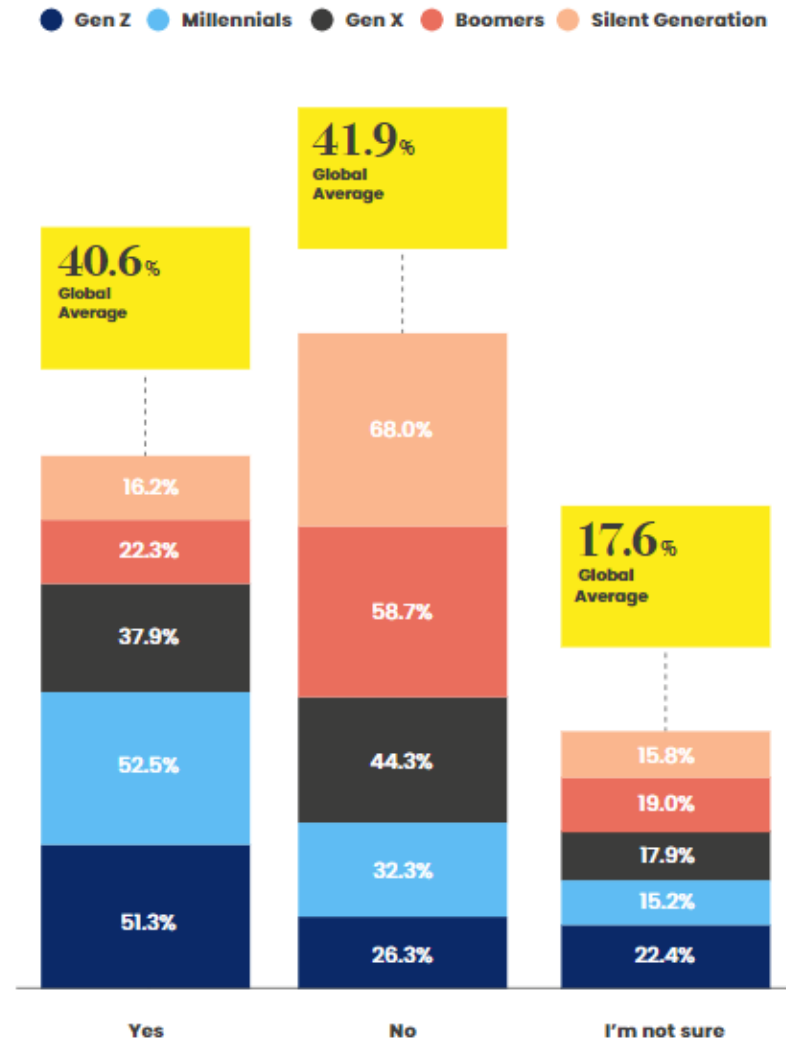


Findings of the Global Consumer Study

Availability heuristic

Availability heuristic works by prioritizing recent events based on recency and vividness.

Covid-19 has changed the perception of the need of insurance and readiness to buy insurance.



Q: Has Covid-19 (Coronavirus) changed your attitude to risk and the value of insurance?

Fig. 4: Attitude change as a result of Covid-19 by generation

Time Preferences & Loss Aversion

Preferences

Present bias

Present bias refers to the tendency of people to prefer to settle for a smaller present reward than to wait for a larger future reward, in a trade-off situation.

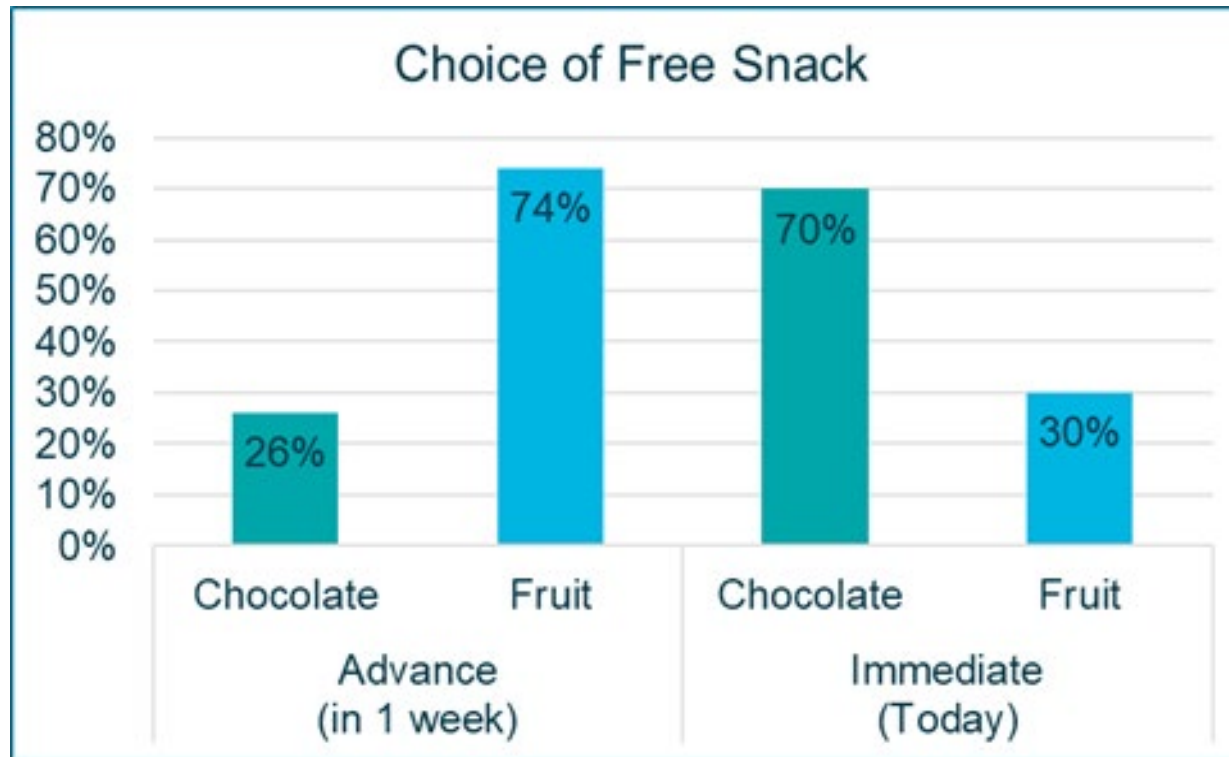
Time inconsistent preferences



Preferences

Intertemporal Choices

Intertemporal decisions are decisions made in the present that have consequences for the future.

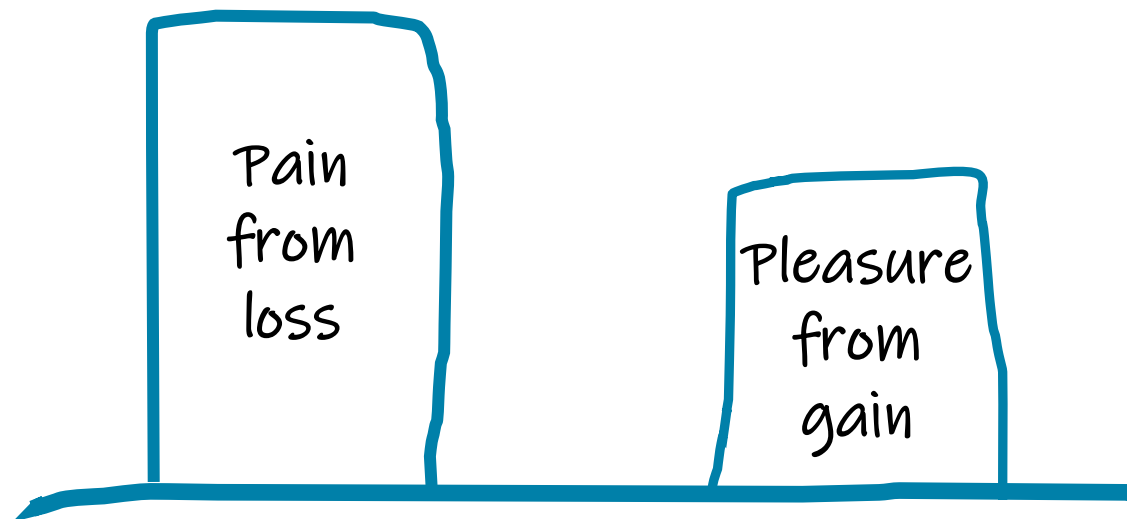


Source: Read & van Leeuwen (1998): *Predicting Hunger: The Effects of Appetite and Delay on Choice*, *Organizational Behavior and Human Decision Processes*, 1998, vol. 76, issue 2, 189-205

Aversion

Losses loom larger than gains

People are more motivated to avoid losses than achieve gains. This concept can be used in designing components of health incentive programs to encourage certain behaviors.



Aversion

Consider a coin toss

Tails You lose \$100

How much would the winning amount
need to be in order to encourage you to
play?

Most would find an amount of around
\$200 reasonable.

Human beings are **more motivated to
avoid losses than to achieve gains.**



Engagement & Health Incentive Programmes

gement and Health Incentive Programmes

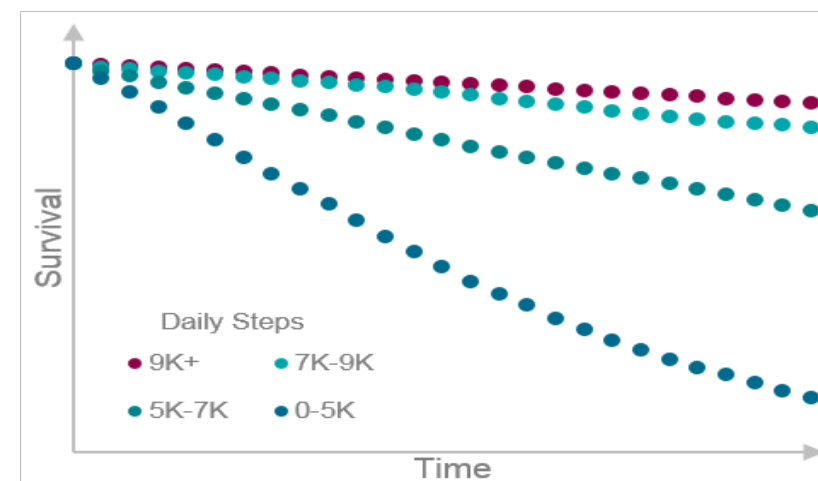
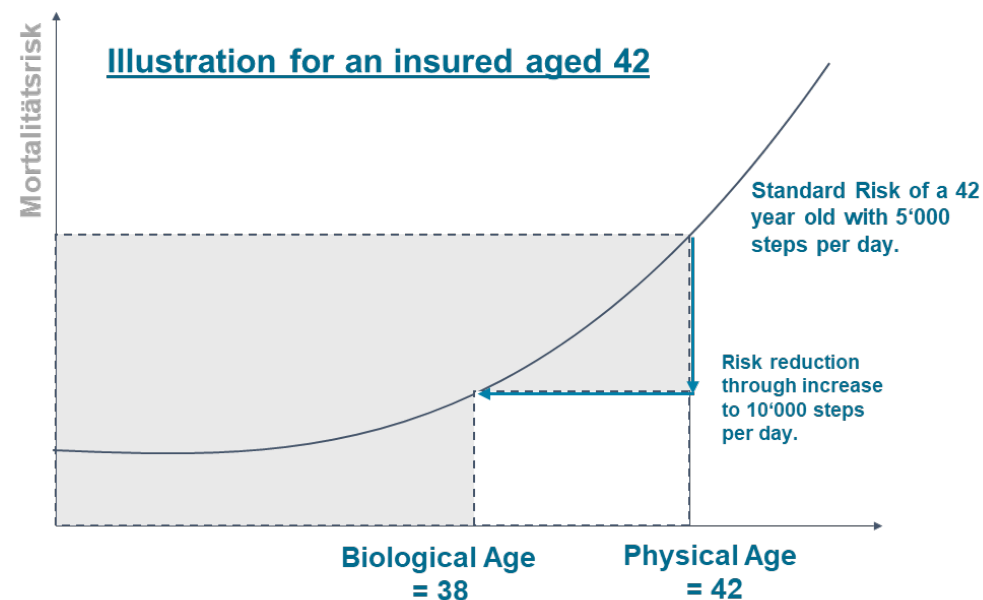
lication of time preference and loss aversion



Management and Health Incentive Programmes

Biological Age – non-financial and financial implications

Biological Age based on physical activity
over the course of a week



Quelle: SCOR Forschungsartikel „Predictive power of wearable data“ basierend auf einem Datensatz der Firma Vivametrica und wissenschaftlichen Artikeln wie z. B. Ishwara et al.: Random survival forests, The Annals of Applied Statistics, 2008.

Engagement and Health Incentive Programmes

Time preference and Bio Age

Key is to find a way to bring the long term impact **of the desired behaviours into the present**

BAM offers an insight in the present moment into long-term effects of physical activity

The goal to reduce Bio Age is something to achieve now (on a daily basis) and this feedback in the present is much more motivating than the true underlying goal of living a longer healthier life

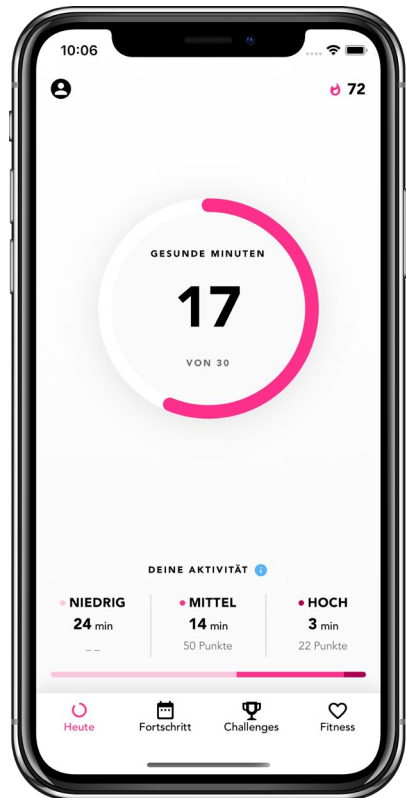


Management and Health Incentive Programmes

Example: Combine a Life Insurance with Fjuul + BAM

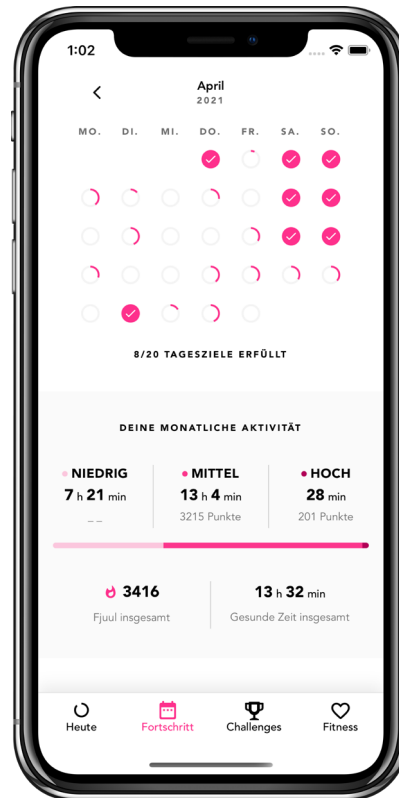
1

Daily activity



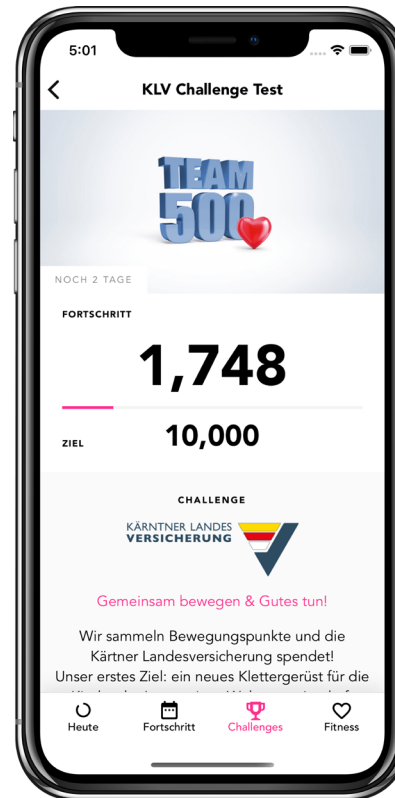
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Progress



3

Challenges



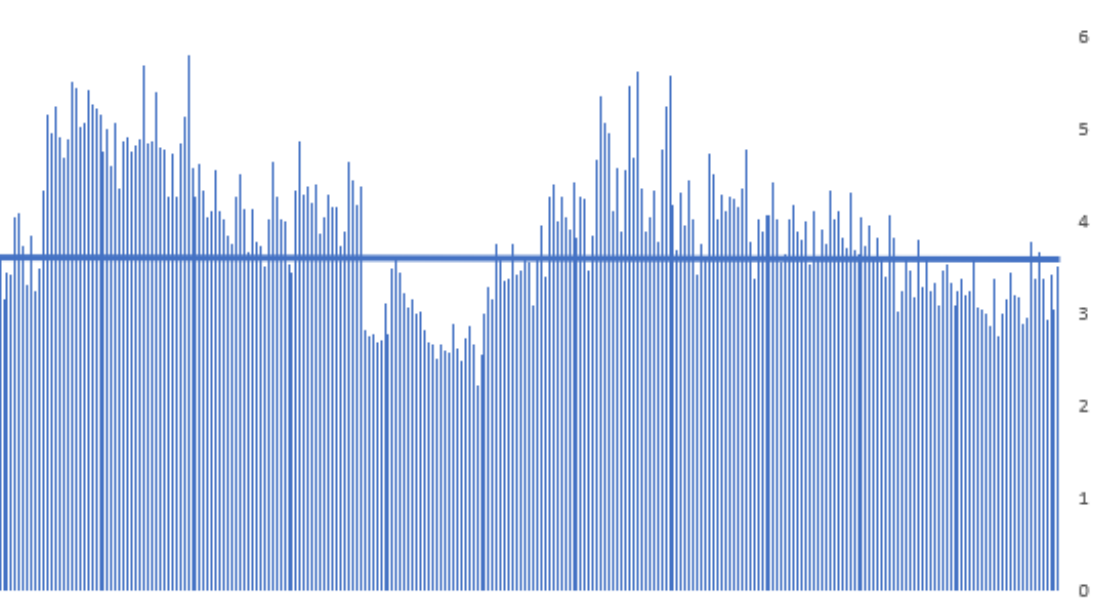
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Biological Age

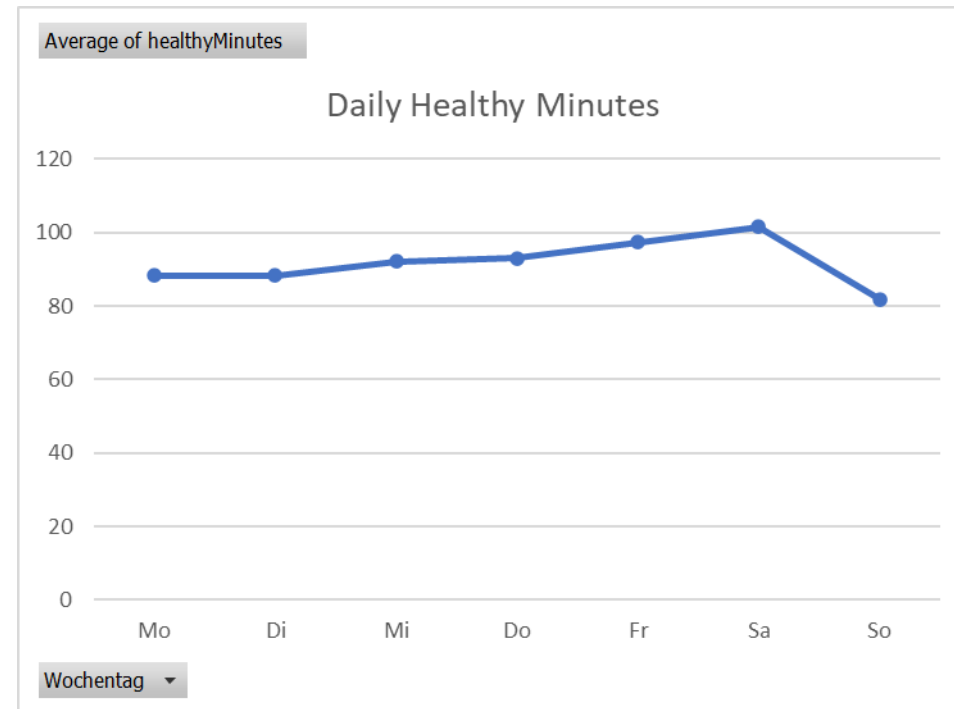


gement and Health Incentive Programmes r Behaviour

App use in average 4 times per day



Saturday is the most active day and on Sunday one relaxes



Juni 2021 – März 2022



Business Impact - Keeping high Engagement and Activity levels

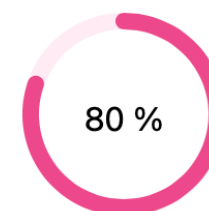
Avg. Daily Fjuul Points / User

during the last 6 months

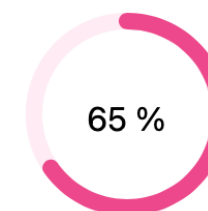


Users' Weekly Healthy Minutes

Average over the last 4 weeks



≥ 150 min



≥ 300 min

gement and Health Incentive Programmes

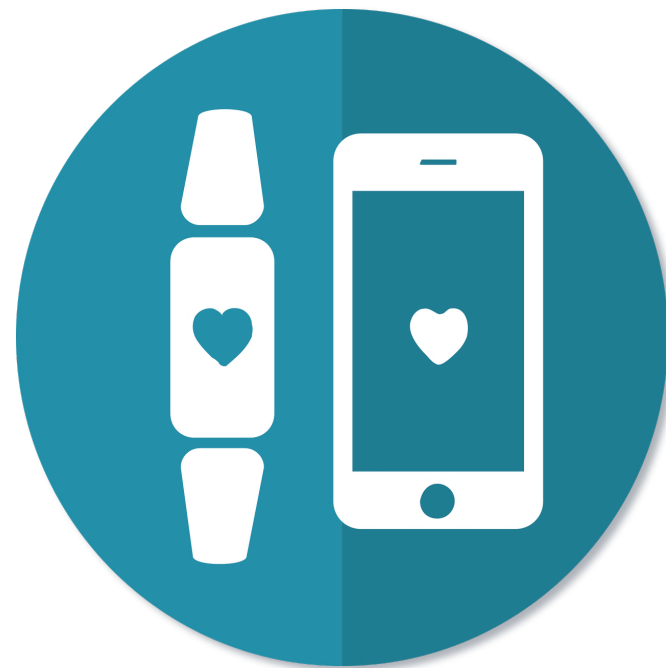
s of Opportunity for a gain¹⁾

er signing an insurance contract, the policyholder receives a smartwatch

e smartwatch tracks their physical activity and is paid via monthly
alments

he user fails to meet exercise requirements they are charged with the
nly instalment

he user reaches their monthly activity target, there is no payment needed



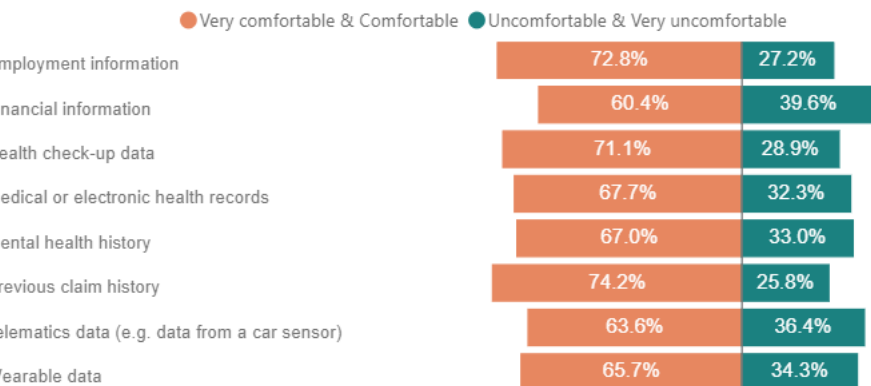
¹Marco Hafner, Jack Pollard, Christian Van Stolk: Incentives and physical activity. An assessment of the association between Vitality's Active Rewards with Apple Watch benefit and sustained physical activity improvements

Findings of the Global Consumer Study

Are people happy to share their data?

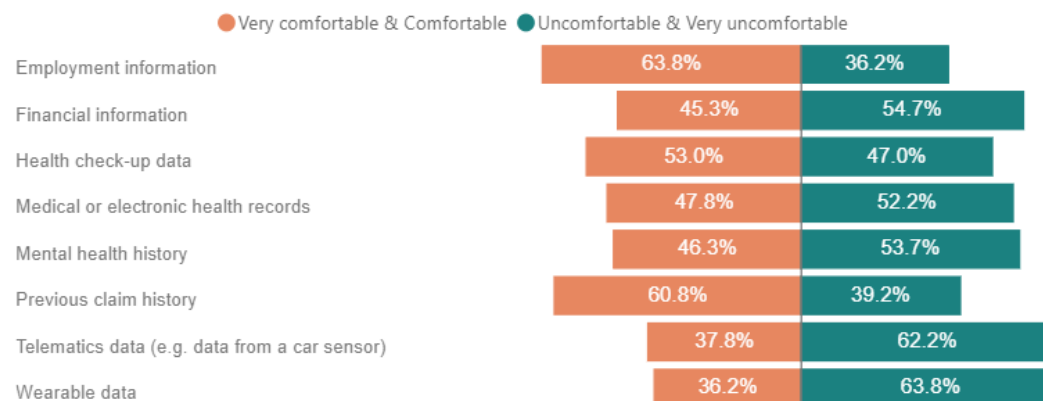
More than two thirds of respondents are happy to share their data

Bearing in mind that insurers will require certain information to assess risk and grant insurance cover, how comfortable are you in sharing the following categories of data?



In Germany respondents are more reluctant to share data

Bearing in mind that insurers will require certain information to assess risk and grant insurance cover, how comfortable are you in sharing the following categories of data?



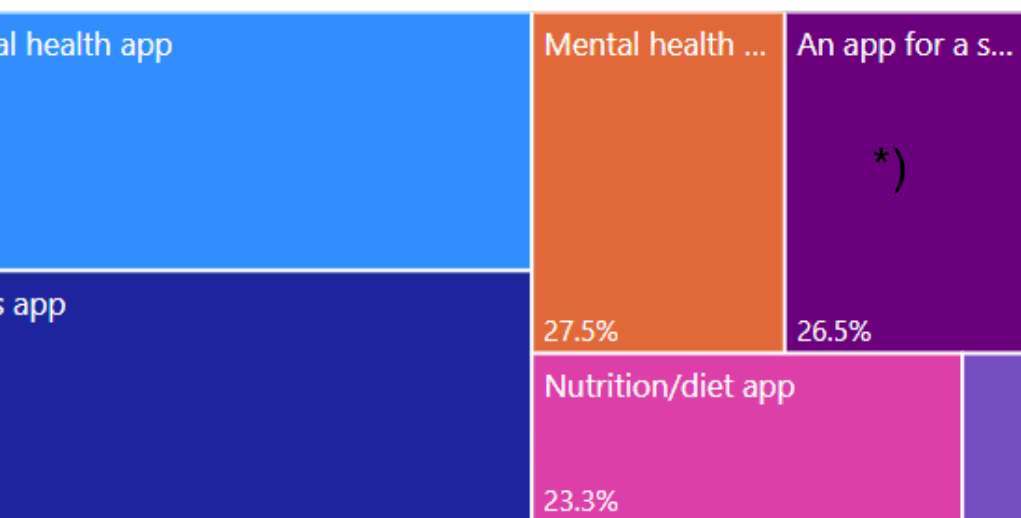
Accessing optional data requires incentives

Findings of the Global Consumer Study

How many people are using apps?

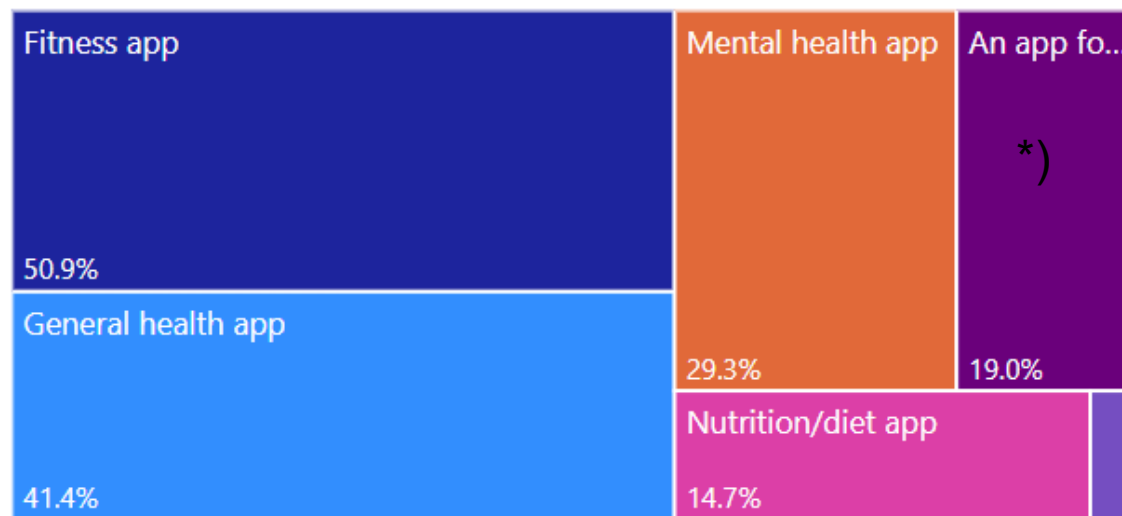
More than half of respondents use general health apps

What type of app do you have? (Health, Wellness or Fitness App)



In Germany Fitness apps are the most used ones

What type of app do you have? (Health, Wellness or Fitness App)



Results of the Global Consumer Study

Why do you use wearables or apps?

Global

Why do you have it? (Wearable Device or Health, Wellness or Fitness App)

Reasons to have	% of selected
I wanted to get healthier	65.8%
To understand my body better	43.2%
I needed extra motivation	41.9%
Influenced by family / friends	21.3%
Recommended by a health professional	13.8%
To get a cheaper insurance premium	11.4%
I don't know	3.6%
Other	2.7%

Germany

Why do you have it? (Wearable Device or Health, Wellness or Fitness App)

Reasons to have	% of selected
I wanted to get healthier	48.7%
To understand my body better	46.2%
I needed extra motivation	35.0%
Influenced by family / friends	13.1%
Recommended by a health professional	11.2%
To get a cheaper insurance premium	7.5%
Other	5.6%
I don't know	2.5%

Health is the most important value

Framing & Social Norms in Underwriting

ing & Social Norms in Underwriting

Behavioural Principles

In general people may bend the truth, omit facts or be opaque but only to the point where they can still feel good about themselves. We need to **make it easy for customers to be as honest as possible**.



To prevent **cognitive overload** resulting in customers becoming tired, defensive and inaccurate:

- stay away from language that is **ambiguous, subjective or complicated**
- avoid questions that are **too long and ask too much**

People often don't like to admit to behaviours where there is social stigma attached. **Social desirability bias** may result in them not being truthful about the existence or extent of negative behaviours. We can **frame questions in order to reduce the sense of social stigma**

ing & Social Norms in Underwriting

Insurance Application Form



Underwriter

Whose
perspective do
we have in mind
when designing
the form?



Applicant

- Needs specific information to properly assess application
- Likes information organized by ease of retrieval
- Often dictates design of application

- Has limited cognitive capacity, memory, time, willpower
- Wants to be honest, but needs help from an easy application process
- Often confused and frustrated by design of application

ing & Social Norms in Underwriting

trolling misrepresentations is key to better customer outcomes

Misrepresentation is costing insurers and claimants

12%

Weighted
misrepresentation rate
over period 2018 to
2021 weighted by
volumes

2018 **12%**
2021 **19%**

Misrepresentation rate
has been increasing,
nearly doubling since
2018

7-25%

Wide differences
between the
misrepresentation
rate of clients,
partially driven by
distributor behaviour

6-10%

Cost to customer
The use of DQM is
key to reducing this
cost

ing & Social Norms in Underwriting eriment Approach

e of Health Questions Studied : Smoker, Alcohol and Diabetes / Pre-Diabetes



vioural Principles Studied : Social Stigma, Negative behaviors, Framing, Cognitive Load, Make it Easy

Design : A/B testing is used as the methodology

Research Methodology	Anonymized A / B Testing
Platform	Online via web-based survey tool
Target Cohort	100 Respondents per set
Structure	1) Purpose of survey 2) Main questions



ing & Social Norms in Underwriting

ographic Statistics

209

Respondents

Group 1

107

Group 2

102



Males

42%



Females

58%

Married 51%

Single 45%

36

Average age of
all respondents

91%

Bachelor's Degree
& above

75%

Singaporean
Or identify themselves as one

73%

Annual Income
>SGD50,000

Smoking & Social Norms in Underwriting Social Stigma and Negative Behaviours – Redesign of Smoking question



Assumes
behaviour
exists

Question Design



Highlights
negative
behaviour

Set 1 - Question 1

When was the last time you smoked cigarettes and/or other tobacco product(s)?

In the past month
In the past 6 months
In the past 12 months
1 - 5 years ago
More than 5 years ago
Never

Time Frame Options

Set 2 - Question 1

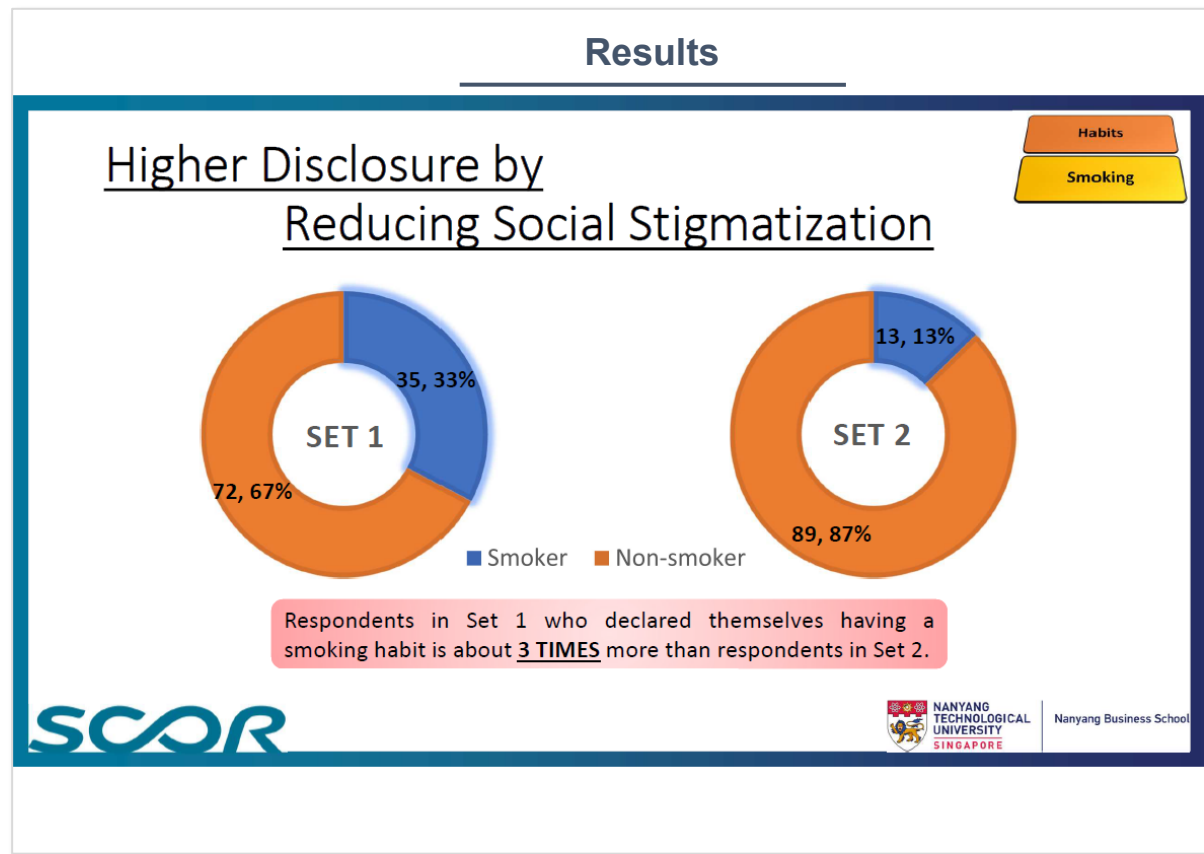
Do you smoke cigarette(s) and/or other tobacco product(s)?

☐ Yes
☐ No

- Dichotomous
- Polarizing
- Subjective
- Ambiguous



Nanyang Business School



ing & Social Norms in Underwriting

ognitive Load and Framing – Redesign of Smoking question

Closed
Question

Question Design

Open
Question

Set 1 - Question 2

How frequently do you use, or
did you smoked cigarettes
and/or other tobacco
product(s)?

0 or more per day
0 - 39 per day
- 19 per day
- 9 per day
less than 7 per week
less than once a week
less than once a month

Options

Set 2 - Question 2

If yes, please state the average
number of stick(s) of cigarette
and/or unit(s) of other
tobacco product(s) you smoke
per day.

0
stick(s) of cigarette and/or unit(s) of
other tobacco product(s) per day.

Others, please specify:

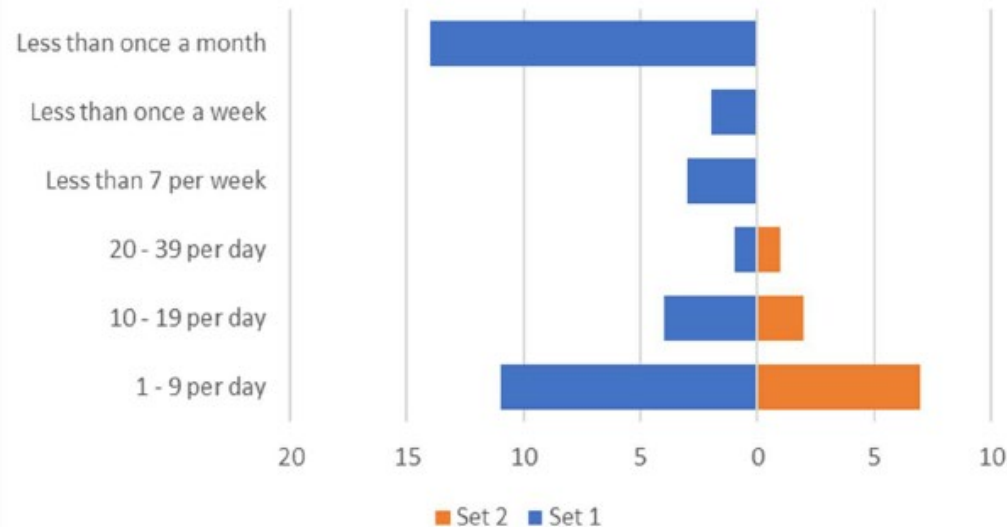


NANYANG
TECHNOLOGICAL
UNIVERSITY
SINGAPORE

Nanyang Business School

Results

of cigarette smoked comparison between Set 1 & 2



ing & Social Norms in Underwriting

erwriting Transformation continues

Applying a behavioural lens to question set design can result in:



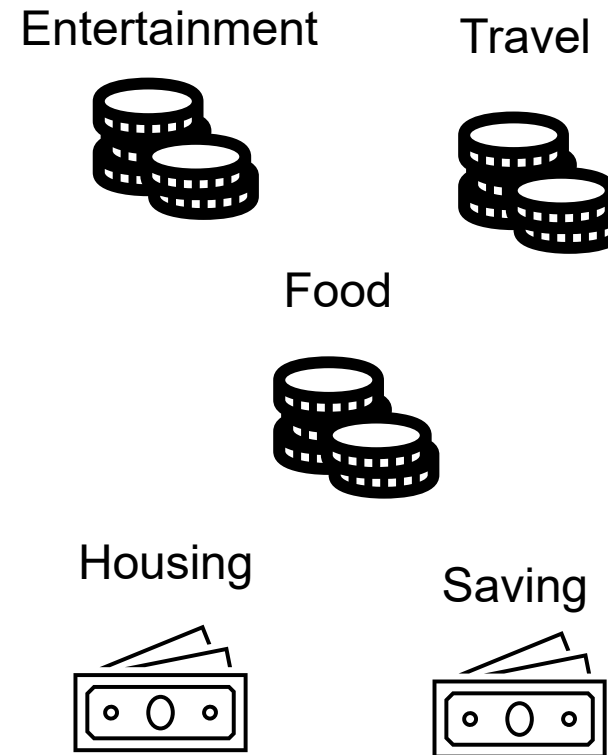
- ✓ SCOR continues to research through academic experiment
- ✓ We are helping our clients globally redesign application forms

Mental Accounting

al Accounting

mental accounting

mental accounting describes how consumers psychologically organize, evaluate and keep track of their finances (Kahneman & Tversky, 1984; Thaler 1985, 1999). People deviate from treating money as fungible, instead creating boundaries by assigning different activities to specific categories (e.g., money for entertainment, money for food, and so on). However, mental accounting can be a barrier to saving if consumers do not create a mental boundary to build and maintain savings.¹⁾



1) Timmons et al.

Financial Accounting

Save more tomorrow

Why don't people save today?

Inertia – “don't know how to start”

Procrastination – “start next year”

Loss aversion – “less to spend today”

Time preference – “money today is more than money tomorrow”

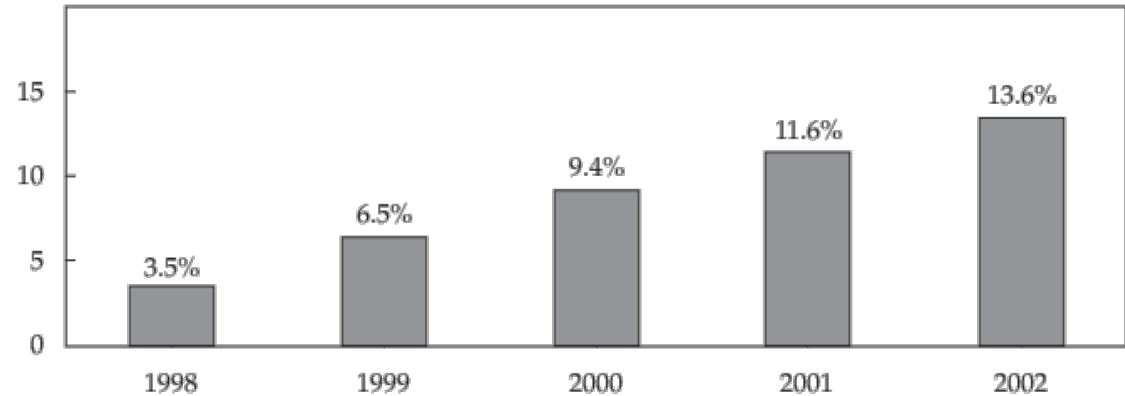
Solution

Use the salary increase amount to save and approach the employee early in advance – against loss aversion and time preference, create a mental account with boundaries

Make it automatic – against inertia and procrastination

Give a choice to opt out – gives the feeling of control

Savings Rate (%)



Source: Thaler and Benartzi (2004, Table 2, p. S174).

Life Insurance Application

Insurance Application

Disability income insurance in Austria

Why is disability cover not bought?

Optimism bias – State is providing enough

Inertia – “don’t know how to start”

Procrastination – “start next year”

Risk aversion – “less to spend today”

Time preference – “money today is more than safety tomorrow”

Solution

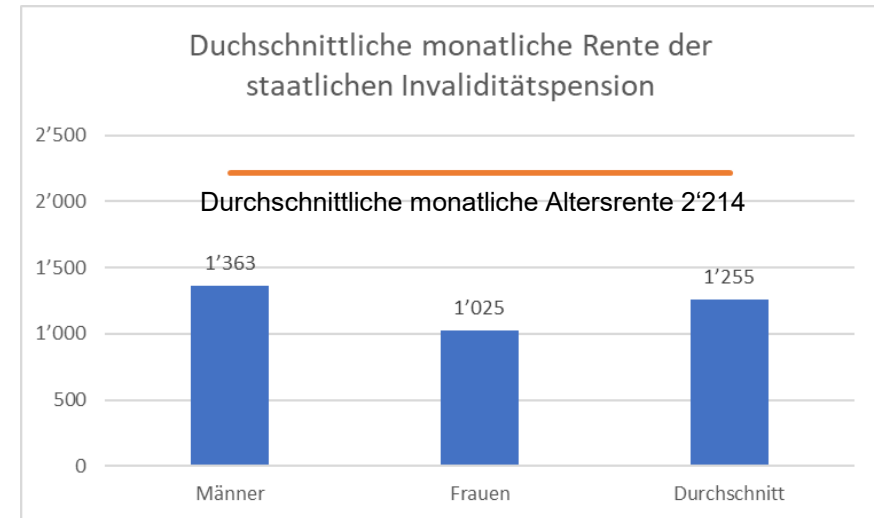
Inform about protection gap – Optimism bias

Use salary increase amount to buy protection and approach the employee early in advance – against loss aversion and time preference,

Create a mental account with boundaries

Make it automatic, digital distribution – against inertia and procrastination

Give a choice to opt out – gives the feeling of control



Insurance Applications

Where can Behavioural Science be applied?

Understanding customers' behaviour and applying that understanding ensures that a customer-centric approach to the insurance journey is prioritised at all points



Product Development & Marketing



Consider, Discover, & Select



Apply & Purchase



Monitor & Engage



Claim

Recent and Current Research

nt and Current Research

crete Choice Experiment to determine willingness to pay

Why is this study important and what do we hope to achieve?



Support Customer Centric Product Design

Gain insights into which product features appeal to customers

Test appetite for new product features



Identify segments to focus initiatives

Understand different preferences for specific sub-groups

Find opportunities for tailored products



Tackle the protection gap

Focus on those currently less likely to purchase cover, e.g. self-employed

Concrete Choice Experiment – Possible Policy Options

Benefit Payment Method

- Lump Sum
- Income

Health Information Required

- No Information
- Declarative Questionnaire
- Medical Exams and Tests

Prevention Program

- No Prevention Program
- Annual Check-Ups
- Personalized Prevention App

Additional Benefits

- No Additional Benefits
- Hospitalization Payment
- Extra Payment for Accidental Death

Survivor's Benefits

- No Survivor's Benefits
- Reimbursement of Premiums
- Payment of Funeral Expenses

Monthly Premium

- €26
- €37
- €48

Concrete Choice Experiment – Overview on Results

Benefit Payment Method

- Lump Sum preferred overall but wide variation observed
- 1 in 5 prefer Income

Health Information Required

- Negative utility when Medical Exams and Tests are required
- Indifferent to Declarative Questionnaire relative to No Information

Prevention Program

- Annual Check-Ups positively valued
- Not willing to pay for Personalized Prevention App Program

Additional Benefits

- Positive utility of Accidental Death Payment with significant willingness to pay
- Indifference toward Hospitalization Payment

Survivor's Benefits

- Both positively valued
- Higher willingness to pay for Funeral Expenses than Premium Reimbursement

Monthly Premium

- Negative utility of higher premiums

ent and Current Research

Concrete Choice Experiment – Health Information Required

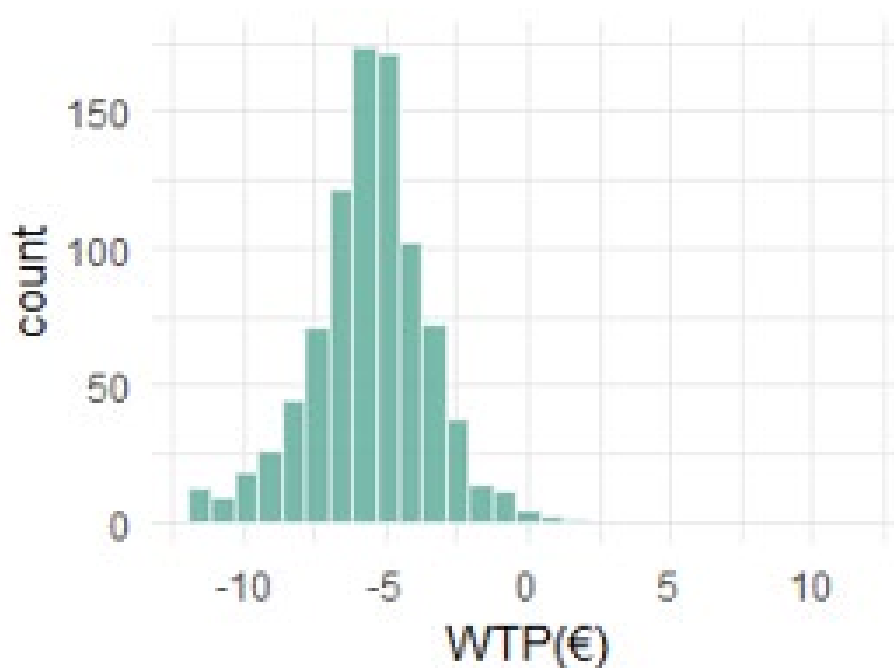
Information vs. Medical Exams and Tests

Participants are willing to pay more for a contract that does not require medical tests to be completed as part of insurance application process.

Some individuals willing to pay up to €10.

50% of individuals willing to pay up to €5 or more for a contract that does not require medical tests.

Older age groups were comparatively more averse to medical tests as part of underwriting.



Current and Current Research The Examples

Underwriting
Design

How can we implement the
learnings from the Nanterre
study in product design?

Not taken up
rates

Nanyang Business School,
Strategic Projects at
Nanyang in collaboration
with SCOR Singapore

Design questionnaires

Cooperation with Society of
Actuaries

Product
Development

What are drivers of the
not taken up rate?

The role of loadings



Thank You

Gabriele Hollmann
Head of Israel&subregion
October 2, 2023