Nutrigenomics: assessing public attitudes to personalised nutrition

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Nutrigenomics and individualised dietary advice
Will consumers accept personalised nutrition?

..........the study of how different foods affect someone's health by the way they react with that person's genes, for example by making them more or less likely to get heart disease or other illnesses.
Innovations (and implementation possibilities)

• DNA testing and food profiling
• Personalised ICT based “coaching” to get people to eat specific foods…
• Specific food products for people with specific gene types
Consumer Research in the Food4Me project

The overall objective

• To develop a theoretical model of the factors influencing consumer decision-making regarding personalized nutrition,
  – perceived risks and benefit
  – to identify consumers’ needs, values and preferences regarding provision of personalised nutrition information, including those related to product delivery
  – to identify differences in these preferences in terms of
    • socio-economic factors,
    • cross-cultural preferences,
    • demographic differences and other salient individual differences
      – gender
      – other genetic factors
      – health status
      – age
      – income, etc
Results of Focus Group Research

- 2 focus groups conducted in each of:
  - Germany
  - Ireland
  - Netherlands
  - Norway
  - Spain
  - Portugal
  - Sweden
  - UK

Results of focus group studies

- Personalised nutrition perceived in terms of **benefit** to health and fitness
- **Convenience** was an important driver of uptake.
- Negative attitudes associated with **internet delivery** but not with personalised nutrition per se.
- Barriers to uptake were linked to broader technological issues associated with
  - data protection
  - trust in regulator and service providers
- Services that required a fee were expected to be of **better quality** and **more secure**.
- An **efficacious, transparent and trustworthy** regulatory framework for personalised nutrition is required to alleviate consumer concern
- Developing **trust in service providers** is important if such services to be successful
Survey study: perceived risks, benefits, attitudes associated with personalised nutrition, and intention to adopt it

- 9381 participants from different EU member states were surveyed regarding their attitudes towards, and intention to adopt, personalised nutrition.
- Survey developed from focus group results and scientific literature

- Germany
- Greece
- Ireland
- Poland
- Portugal
- Spain
- The Netherlands
- The UK
- Norway
SEM – adoption of intention to adopt Personalised nutrition

- Benefit perception
- Risk perception
- Perceived efficacy control and regulation
- Health commitment
- Internal health locus of control
- Self efficacy

\[
\begin{align*}
\text{Benefit perception} & \rightarrow \text{Attitude towards PN} \\
\text{Risk perception} & \rightarrow \text{Attitude towards PN} \\
\text{Perceived efficacy control and regulation} & \rightarrow \text{Attitude towards PN} \\
\text{Health commitment} & \rightarrow \text{Attitude towards PN} \\
\text{Internal health locus of control} & \rightarrow \text{Attitude towards PN} \\
\text{Self efficacy} & \rightarrow \text{Attitude towards PN} \\
\end{align*}
\]

\[
\begin{align*}
\text{Intention to adopt PN} & = \text{Attitude towards PN} \\
\text{Intention to adopt PN} & = 0.252^* \\
\text{Intention to adopt PN} & = 0.648^* \\
\text{Intention to adopt PN} & = 0.097^* \\
\text{Intention to adopt PN} & = 0.095^* \\
\text{Intention to adopt PN} & = 0.065 \\
\text{Intention to adopt PN} & = 0.123^* \\
\text{Intention to adopt PN} & = 0.111^* \\
\end{align*}
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Key results

- **Benefit perception** is the most important determinant of
  - attitude towards personalised nutrition
  - adoption of personalised nutrition

- **Perceived self-efficacy** (i.e. Is personalised nutrition achievable?)
  - predicts attitude and adoption of personalised nutrition
WP2/4 comparison

Next steps – how do consumers in general differ from people included in the study?
Possible outcomes of being involved in a personalised nutrition trial

• Intervention successfully led to an improvement in behaviour, (the quantity and quality of peoples diets).

• Intervention successfully leads to a positive shift in attitudes towards Personalised Nutrition.

• Intervention successfully leads to a positive shift in attitudes towards being able to make healthy food choices

• Intervention fails to change attitudes towards personalised nutrition, but increases the uptake of substitute healthy behaviours.
Willingness to pay for personalised nutrition

- About 30% of the population is willing to pay more for a personalised nutrition service than for a generic nutrition service.
- If they ARE willing to pay more
  - 50% more than for generic services
  - People are not enthusiastic for paying for DNA samples or blood sampling
- People in the highest income groups are willing to pay most
  - Is there an ethical issue about access to personalised nutrition?
  - Should personalised nutrition be excluded from insurance or human resource management programs?
  - Should personalised nutrition be embedded in health service provision?
Other potential factors which will influence uptake of personalised nutrition

- **Trust in regulatory structures?**
  - This tends to reduce as one moves from north to south across Europe
- **People are particularly concerned about the “selling on” of their data**
Impacts

• Delivery of Personalised Nutrition will more closely align with consumer preferences and priorities for delivery
• Barriers to adoption in specific consumer segments identified
  – Cultural and demographic factors
• Increased uptake will have positive effects on
  – Public health
  – Development of efficacious business models
  – Improved agrifood innovation strategies
Thank you!
Any Questions or comments?