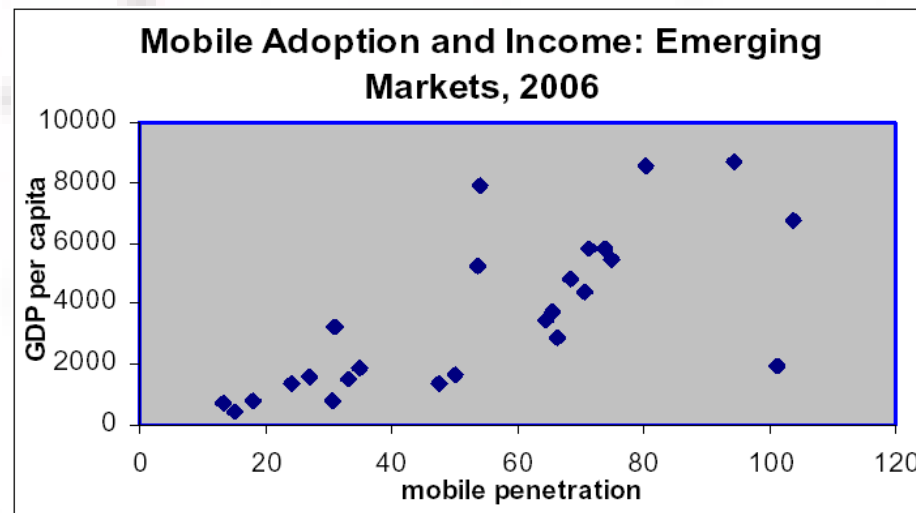


m-Commerce & m-Banking

	DRIVERS	INHIBITORS
1. ECONOMY	<ul style="list-style-type: none"> → 1. Positive relation with GDP growth → 2. Economical Competitiveness → 3. Enable traders to reach wider markets → 4. Advertising channel (potential) 	<ul style="list-style-type: none"> → 1. Regulation → 2. Uncertainty on substitution effects → 3. Low incentives for merchants → 4. Bottleneck issue: m-commerce stills a low use service by SMEs (China, UK,...)
2. TECHNOLOGY	<ul style="list-style-type: none"> → 1. Mobile penetration → 2. e-Bank mature penetration rates → 3. Convergence services: all-in-the-pocket-services (games, banking, music, maps, VOIP, TV, advertisement, photo, news,...) 	<ul style="list-style-type: none"> → 1. Complexity for applications development (# entities, protocols, operation systems, versions, devices,...): low quality of service offered → 2. Contactless payments difficult to operate (credibility and # of entities involved) → 3. Excessive emphasis on technology rather than on content
3. END-USER	<ul style="list-style-type: none"> → 1. Value, convenience, compatibility with <i>life-style</i> (USA, Korea, UK) → 2. Increase intention to use → 3. Increase use → 4. Increase willingness to pay fees 	<ul style="list-style-type: none"> → 1. Non e-bank consumers → 2. FUNCTIONAL: usage, risk, VALUE/price (consumers and SMEs: 25%), information → 3. PSYCHOLOGICAL: image, tradition, normative/cultural

→1. **POSITIVE CORRELATION WITH GDP GROWTH** (1996-2006: extra 10% mobile penetration → aprox. 0,6% higher GDP, twice as large in developing countries (Waverman, 2007)



Castells *et al.*, 2007

2. **ECONOMICAL COMPETITIVENESS**, essential for delivering sustained growth by reducing inefficiency and spectrum scarcity (Reading, 2006).

3. **ENABLES TRADERS TO REACH WIDER MARKETS**, crucial for developing countries or isolated areas, acting as a substitute of physical transport (Waverman, 2007).

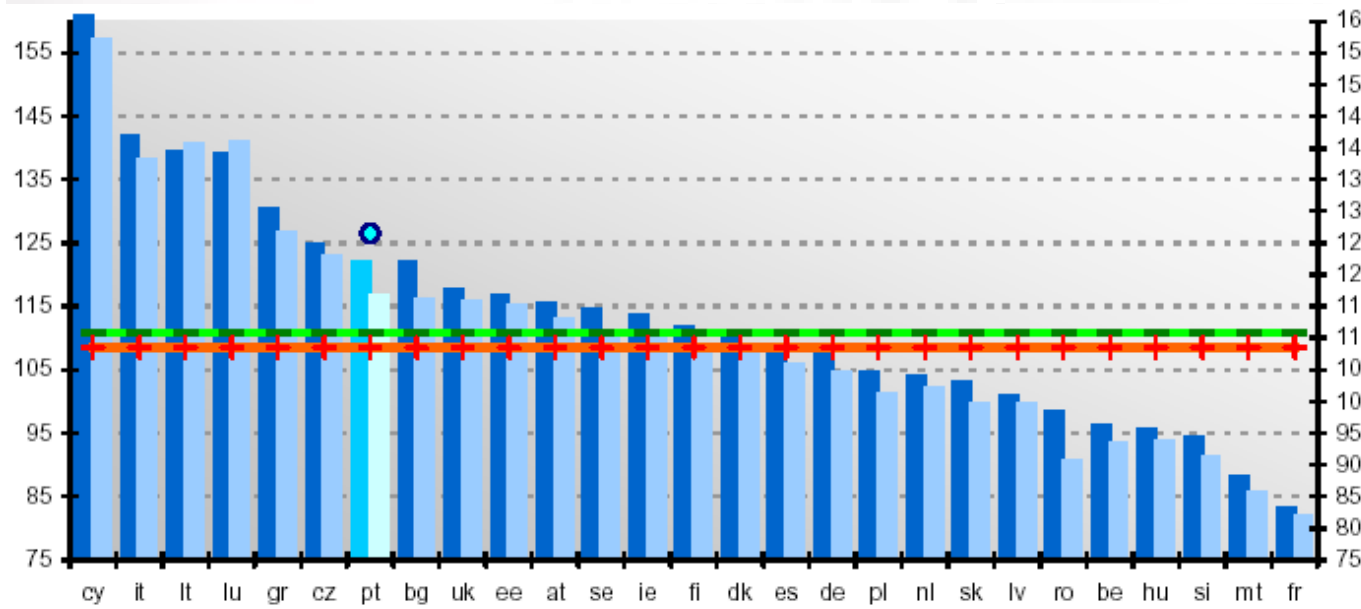
4. **REVENUE POTENTIAL** that can **disrupt** the current business models of mobile operators, web companies and handset manufacturers (Schenker, 2007). **Advertisement** (UK model: young people targeted and they accept advertising in exchange of advertising delivery and free calls and SMS).

→1. **REGULATION:** to enhance m-banking and m-payments (and simultaneously discourage fraud/laundry money)

→ 2.**UNCERTAINTY ON SUBSTITUTION EFFECTS:** e-Banking and revenue-share between market players (mostly between mobile operators and financial institutions)

→3. **LOW INCENTIVES FOR MERCHANTS:** m-payments means risks and investments

→4. **BOTTLENECK ISSUE:** m-commerce stills a low use service by SMEs (China, UK,...) (Ofcom,2007)



3.TECHN. DRIVERS

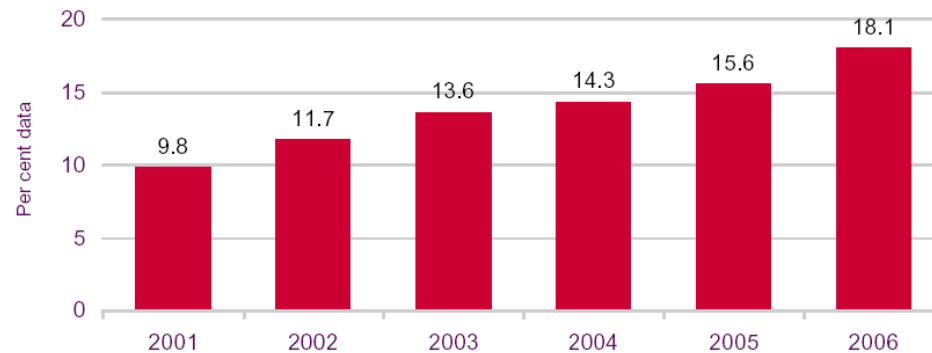
→1. **MOBILE PENETRATION**

EUROPEAN AVERAGE: 111%
WORLDWIDE: 40%
(Eurostat, 2008)

Legend: 3T07 (dark blue bar), 2T07 (light blue bar), Portugal 4T07 (blue circle), média UE27 3T07 (green line), média UE27 2T07 (red line with crosses)

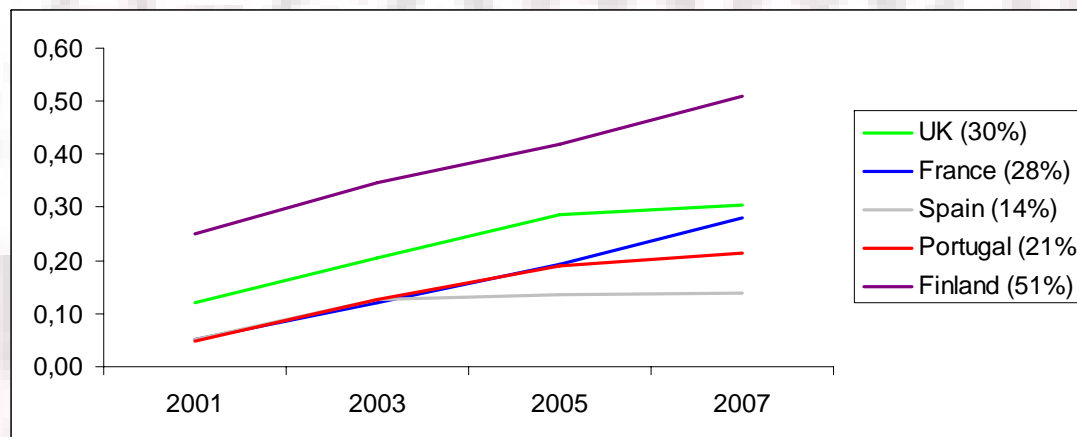
Source: ICP-ANACOM (2008)

1. MARKET EVIDENCES: % OF MOBILE DATA/TOTAL REVENUE



Source: IDATE / industry data / CRTC / Ofcom
 Note: Average for UK, FRA, GER, ITA, the US, CAN, JPN, POL, ESP, NED, SWE and IRL

2. e-BANK PENETRATION



By total population. SOURCE: Forrester (2005), Eurostat (2008), Datamonitor (2007), InternetWorldstats (2008)

Geographical Areas	Interested	Real Use (past 3 months)	Knowledge of Bank's service offering	Concerned about Security
Europe	61%	7%	49%	25%
Asia-Pacific	40%	15,4%	51%	47%
Pan-America	37%	8%	56%	44%

Source: Sybase Survey 2007 (www.sybase.com/ www.telecomasia.net)

→ The **GAP** between **INTEREST AND REAL** use reveals the infancy and potential of this channel. India is an exception: low mobile penetration (<20%) but from these, about 31.3 million are frequent mobile internet users.

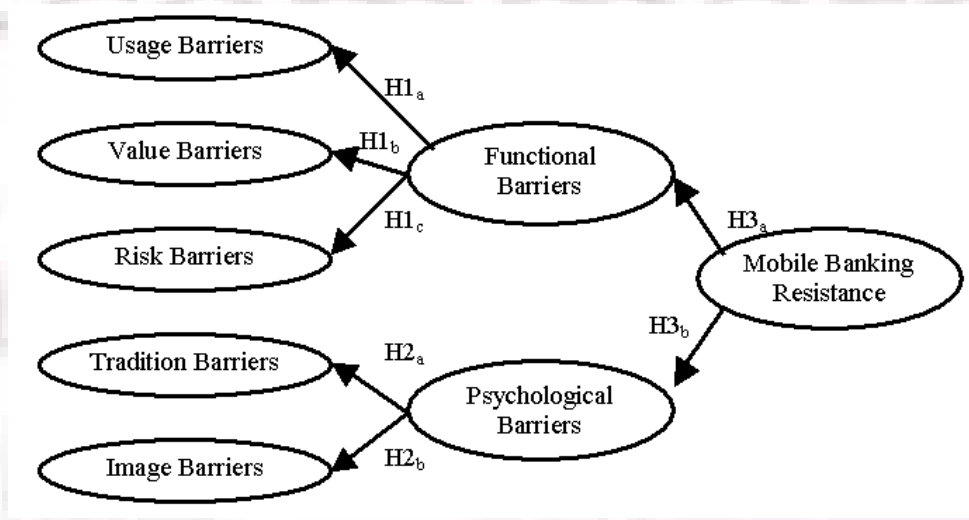
→ **LACK OF PROMOTION:** Banks need to encourage banking service and highlight the benefits of mobile (the consumers are already receptive for personal financial services)

→ > 25% (globally, consumers and firms) would consider switching banks if an alternative provider offered FREE mobile banking

→ Special Challenge: non e-Bank users

- **WHY ARE M-BANKING SERVICES RESISTED?**
- **Theory of innovation resistance** (Ram and Sheth,1989):
- **FUNCTIONAL BARRIERS:**
 - **Usage** barrier (difficult, not clear,..)
 - **Value** barrier (inability to produce value-added benefits)
 - **Risk** barrier (physical, economical, functional, social)
- **PSYCHOLOGICAL BARRIERS:**
 - **Tradition** barrier (magnitude of change caused)
 - **Image** barrier (negative image related to innovation)

Conceptual model

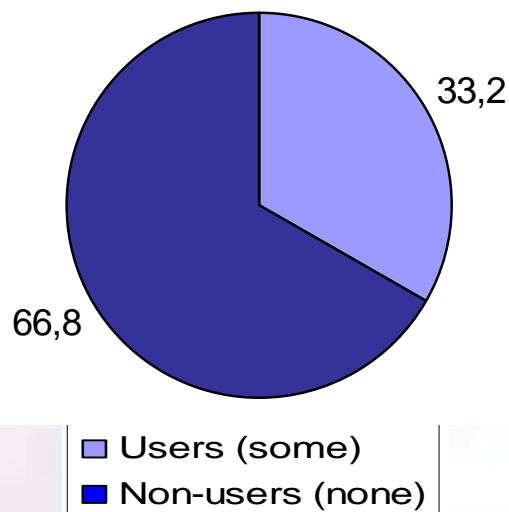


m-Banking Resistance

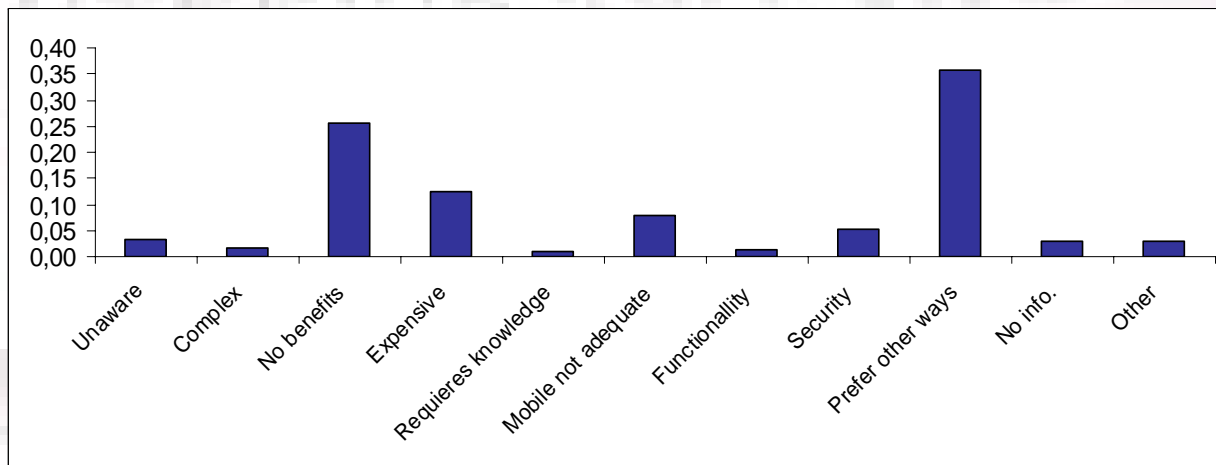
→ Internet survey (Portugal)

- July 2007
- **2334 valid responses from e-Bankers:** 39% female; 59,3% < 35 years
- **33,2% MOBILE USERS** (only 13,7% are real users)

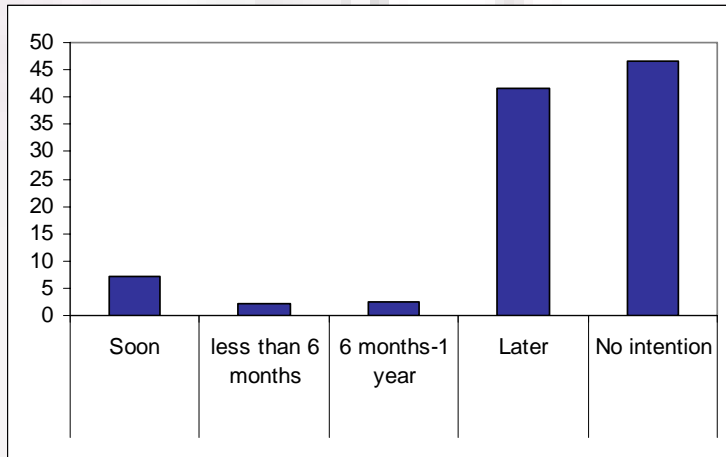
m-Bankers among e-Bankers



MOTIVE(S) TO NOT USE MOBILE-BANKING (non-users)



INTENTION TO ADOPT m-BANKING IN THE FUTURE (non-users)



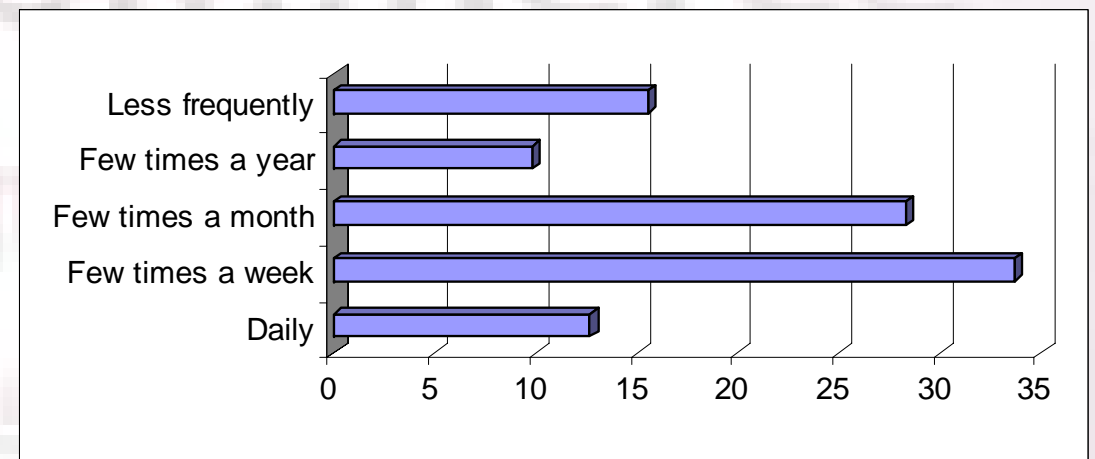
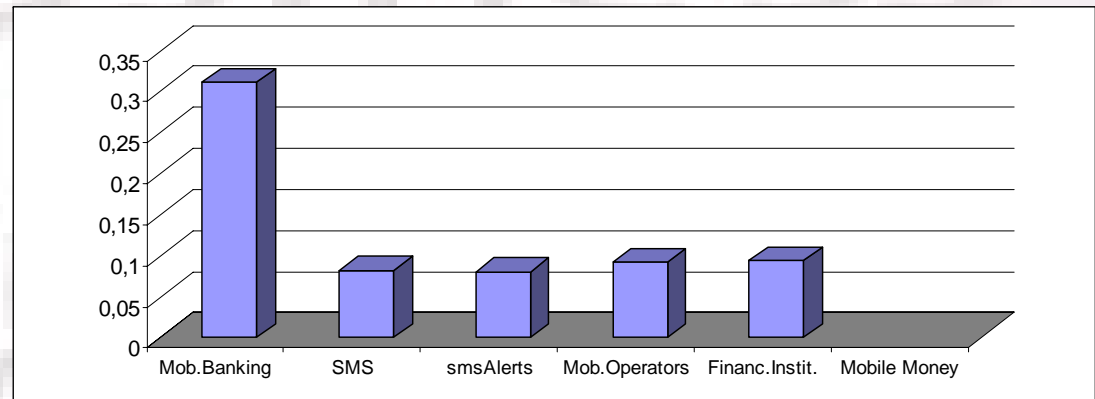
→ 7% “soon”

→ 40% “Later”

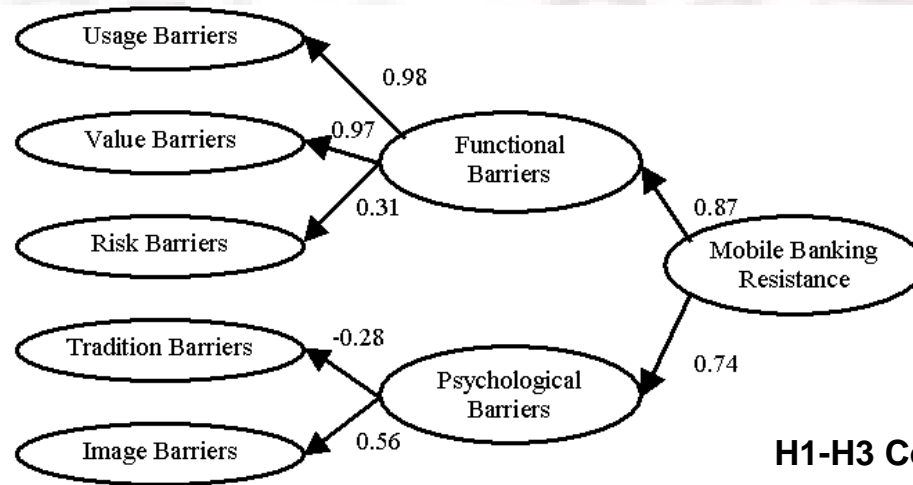
→ 45% “no”

**M-Banking
FREQUENCY OF USE
(users)**

M-BANKING SERVICES USED



Structural model



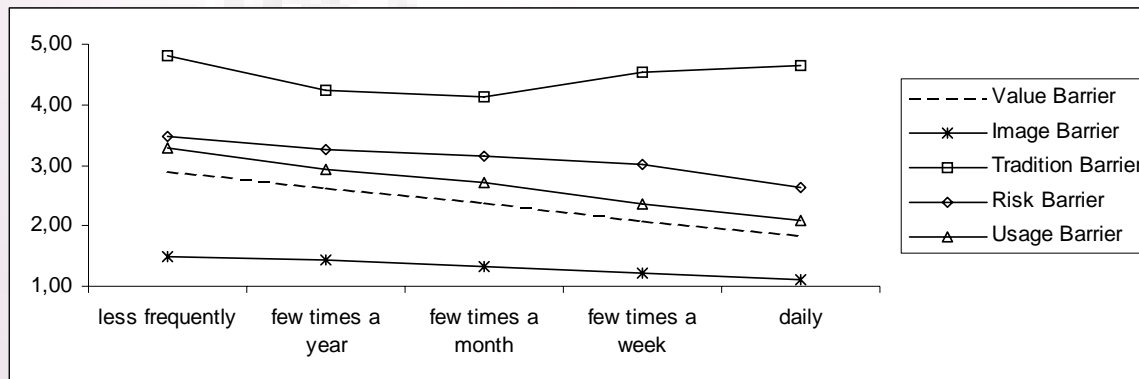
$\chi^2=2036.36$; d.f.=88; p=0.00; CFI=0.925; RMSEA=0.078; GFI=0.926; NFI=0.922

H1-H3 Corroborated (except H2_a-negative)

H₄: Resistance barriers to mobile banking services are significantly lower among consumers who have been using internet banking for a longer time.

→ Resistance not affected by variation in the duration of internet banking use (sig.>0.05 for all categories)

H₅: Resistance barriers to mobile banking services are significantly lower among consumers who use mobile banking more frequently.



→ For all barriers, except for Tradition, resistance barriers decrease sig. (<0.000) with the rise of frequency of use

H₆: Resistance barriers to mobile banking services are significantly lower among USERS.

	All N=2334	Users n=776	Non-Users n=1568	Sig.
Global Resistance	3.3905	2.7217	3.9958	0.000
Psychological Resistance	1.9717	1.9417	2.3344	0.000
Functional Resistance	2.4710	2.3807	3.3129	0.000
Usage Barrier	3.4292	2.5686	3.7813	0.000
Value Barrier	2.9797	2.2617	3.1596	0.000
Risk Barrier	3.3467	3.2035	3.6571	0.000
Tradition Barrier	4.0211	4.5009	3.8323	0.000
Image Barrier	2.0123	1.9833	2.3708	0.000

H₇: The proportion of women using mobile banking services is significantly lower than men.

	user	non-user
male	68	59
female	32	41

Sig(χ^2)=0.000

CONCLUSIONS/ IMPLICATIONS

- Campaigns highlighting the functional usability and relative advantage
- Encourage the user (resistance barriers get lower as consumers use mobile banking more frequently).
- Tradition as a negative determinant of resistance (compatibility of m-banking with established habits)
- Image is an important determinant & the lowest barrier value (portuguese consumers seem to have a positive image of technology in general and of m-banking in particular).
- Risk barrier (2nd higher mean) → effective communication strategies (periodical information about mobile applications concerning security, privacy policy and PIN codes use).
- “Basic” mobile owners with higher resistance (3.793 vs 3.274 from “3G”).

- **IMPLICATIONS**

- High penetration rate (33,2%) & low scores in resistance: low number of internet-connected computers and a high mobile penetration rate; online banking users.
- Target-groups to be considered in the implementation of communication strategies: women and consumers with “basic devices” (typically non-users of m-banking services).
- Banks should provide adequate conditions: device upgrading, commercial level (virtual demonstration, price comparison engines) and financial level (credit simulation).

- **RESEARCH DIRECTIONS**

- Deep comparison between countries concerning demographics
- To extend the study to other banks and countries
- Compare cultural constructs at cross-national level
- To achieve a global integrative model of barriers, culture, socio-demographical, technology that explains/predicts the m-Banking adoption.