EuroTrak I: A Consumer Survey About Hearing Aids in Germany, France, and the UK

First global comparative study of hearing, hearing loss, and hearing aids

BY SØREN HOUGAARD AND STEFAN RUF

EuroTrak I, which looks at consumers' self-reported hearing loss and hearing aid use, reveals many correlates with MarkeTrak VIII data. However, important differences emerge, including slightly higher levels of hearing aid adoption and fewer "in the drawer" hearing aids. Europeans' overall satisfaction with hearing aids is relatively high (72% to 86%, depending on country) and comparable to figures in North America (74%). Overall satisfaction with newer generation devices (77% to 91%) is even higher, and hearing aids are shown to have a positive impact on the quality of life of hearing-impaired individuals.

In 2009, the European Hearing Instrument Manufacturers Association (EHIMA aisbl) initiated a comprehensive study on hearing impairment, as well as the prevalence and use of hearing aids, in three of Europe's largest countries: Germany, France, and the UK. The study, called EuroTrak, was designed and carried out by the Switzerland-based market research company Anovum, and is based (where practical) on the consumer questionnaires found in the North American MarkeTrak studies[1,2]—more than 20 years of data that can be accessed from the Better Hearing Institute (www.betterhearing.org).

The findings in the following article show many correlations between EuroTrak and MarkeTrak data. Nevertheless, demographic differences and divergent health care systems appear to impact hearing loss awareness, ownership of hearing aids (adoption), and other factors related to hearing aid use, including customer satisfaction.

Importantly, the study shows that hearing aid owners are highly satisfied with their hearing care professionals, and that those who own a newer hearing aid (≤4 years of age) are significantly more satisfied with their devices. These improvements are evident for sound quality and signal processing criteria, and indicate that users benefit from new-generation hearing aid technology.

Nevertheless, the results also show challenges and opportunities for improvement in hearing aid design and delivery, particularly for improving performance in difficult listening situations.

Søren Hougaard is the executive director of the European Hearing Instrument Manufacturers Assn (EHIMA aisbl), Bagsvaerd, Denmark, and **Stefan Ruf** is the executive partner and co-founder of Anovum, a marketing research firm located in Zürich, Switzerland. Correspondence can be addressed to *HR* or Søren Hougaard at sh@ehima.com.

Toward a Global View of Hearing Aid Use and Customer Satisfaction

For more than 20 years, the hearing industry has studied and benefitted from MarkeTrak research in the United States.[1-4] With EuroTrak, EHIMA aims to establish a European equivalent to MarkeTrak. EHIMA represents the six major European hearing instrument manufacturers—GN ReSound, Oticon, Phonak, Siemens, Starkey, and Widex—that produce up to 90% of hearing aids made in Europe. Even though the EuroTrak survey is not as extensive as its American prototype, it does offer a comprehensive look into three of the key European markets—Germany (DE), France (FR), and the United Kingdom (UK)—and, in combination with MarkeTrak, produces a set of core data that can be used globally.

It is EHIMA's intention to repeat the surveys in the three countries on a regular basis. This will deliver longitudinal data and the opportunity to study trends in the European markets—trends that can be compared with related US trends. It is the ambition to develop EuroTrak to become a point of reference for different stakeholders. The combined EuroTrak/MarkeTrak data provide a solid background for this endeavor.

This article reports on populations with hearing impairment in the UK, Germany, and France, and compares US data, for:

- Hearing loss prevalence and hearing aid adoption rates;
- Hearing loss characteristics;
- Hearing loss population demography;
- Factors influencing the purchase of a hearing aid;
- Third-party payment;
- Customer satisfaction of hearing aid owners and impact on quality of life; and
- Reasons for non-adoption of hearing aids.

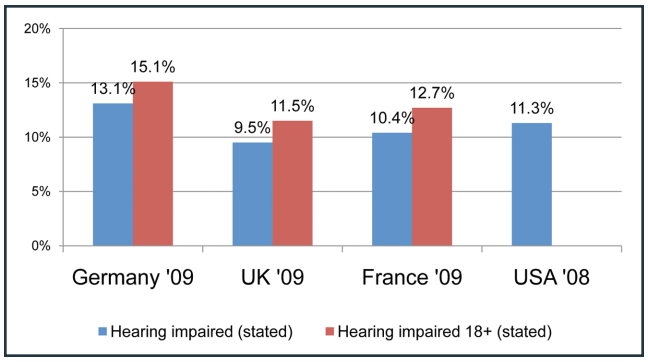

FIGURE 1. Hearing loss prevalence in percentage of the entire population and of the population 18 years or older. Data based on screening surveys.

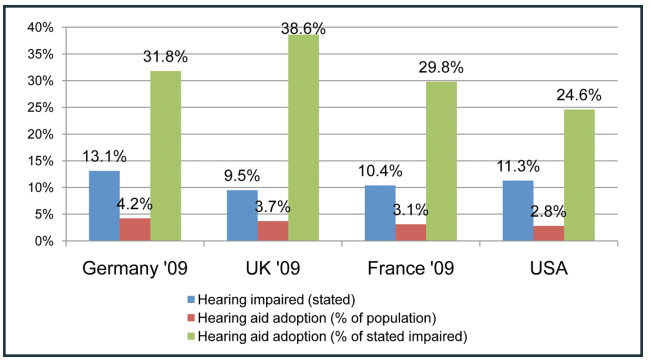

FIGURE 2. Hearing loss prevalence and hearing aid adoption rates, based on stated hearing loss on the screening survey.

Survey Method

A questionnaire was developed with the goal of compiling important data in the European countries, with maximum correlation to the North American MarkeTrak surveys. This correlation allows us not only to study similarities and differences between the markets, but also to draw conclusions for European markets based on the more extensive survey material in MarkeTrak.

During June and July 2009 (Germany) and December 2009 (France and UK), a short survey was mailed to online panel members in the three countries. The samples were balanced based on census information with respect to age and gender, as well as region. The short survey included questions about:

- Detailed household demographics;
- People with hearing difficulty in one or both ears; and
- People with hearing aid(s) in one or both ears.

This short screening survey helped to collect data about hearing difficulties and hearing aid ownership for 44,710 people (DE 14,185; FR 15,545; UK 14,980). It also helped to recruit 3,947 people with hearing loss (DE 1,308; FR 1,304; UK 1,335) for the more extensive interviews. A total of 1,517 (DE 503; FR 501; UK 513) hearing aid owners were asked about customer satisfaction and 2,430 (DE 805; FR 803; UK 822) hearing-impaired non-owners about their reasons for non-adoption. (Authors' Note: Sample sizes are denoted in each table by "n=".)

The data compare the EuroTrak surveys (2009) in Germany, France, and the UK, where feasible, with the BHI's MarkeTrak survey (2008) of the US population with hearing impairment.[1-2] It should be acknowledged that the field methodology of the two surveys differs. Notably, MarkeTrak relies on a *mailed questionnaire*, while EuroTrak relies on an *online questionnaire*. (To reduce the effect of older people being less likely to use the Internet, all results were balanced according to population data.) Additionally, MarkeTrak VIII had a screening sample of 46,843 households, with 4,339 total hearing-impaired non-owners and 3,174 total hearing aid owners. However, it is the authors' belief that the general conclusions, based on the comparison of the studies, remain unaffected.

The reader should keep in mind that the data presented in this article are based on *stated (self-reported) hearing loss,* and thus will most likely differ from studies using objective measures of hearing loss.

Hearing Loss Prevalence and Hearing Aid Adoption Rates

Figure 1 shows that the percentage of the population reporting hearing loss varies from 9.5% in the UK to 13.1% in Germany. While there are many potential reasons why stated hearing loss prevalence differs from one country to another (eg, different health care systems, cultural differences, etc), the structure of the aging population pyramid may best explain the higher figure for Germany. In Europe, the relative proportion of elderly people is highest in Germany, and much has been made of that country's zero or even negative population growth. Since hearing loss is associated with aging (presbycusis), a higher prevalence of hearing loss would be expected there.

Figure 2 shows hearing aid adoption rates of the entire population, as well as based on people who say they have a hearing loss in one or both ears. As perhaps expected, the UK has the highest percentage of hearing aid owners relative to those who report having a hearing loss (38.6%) due to the free provision of hearing aids by the National Health Service (NHS).

EuroTrak indicates that one-half (47%) of hearing aid owners in the UK have binaural fittings, while 58% and 60% in France and Germany have binaural fittings, respectively (Figure 3). These rates are comparable to US MarkeTrak figures from the 1990s (51% in 1991, 52% in 1994, and 60% in 1997),[1] but are *significantly lower* than the 74% binaural fittings measured in MarkeTrak VIII (2008). The benefits of binaural amplification have been proven in myriad

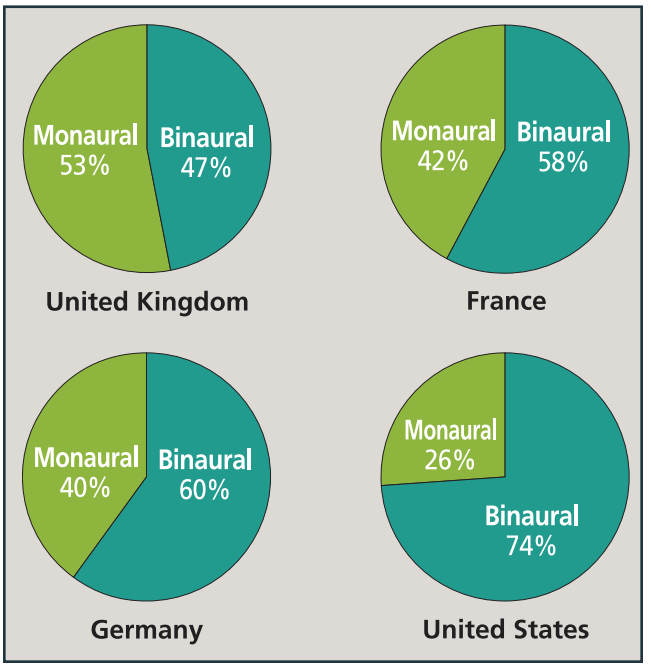

FIGURE 3. Binaural hearing aid use, as found in EuroTrak 2009 (all owned hearing aids) and the US MarkeTrak VIII for 2008 (current year only).

	GER '09			UK '09			FRA '09			USA '08		
	%HA-Non-owner (n=805)	% HA Owner (n=503)	Hearing Aid Adoption (%)	%HA-Non-owner (n=822)	% HA Owner (n=513)	Hearing Aid Adoption (%)	%HA-Non-owner (n=803)	% HA Owner (n=501)	Hearing Aid Adoption (%)	%HA-Non-owner (n=4'209	% HA Owner (n=3'109)	Hearing Aid Adoption (%)
Ears impaired (stated)												
Unilateral loss	43%	25%	22%	46%	33%	32%	39%	29%	25%	39%	13%	10%
Bilateral loss	57%	75%	39%	54%	67%	45%	61%	71%	33%	61%	87%	32%
Perceived loss												
Mild	31%	6%	8%	42%	11%	14%	26%	6%	9%	41%	8%	6%
Moderate	50%	31%	22%	50%	57%	42%	50%	46%	28%	46%	52%	27%
Severe	15%	43%	58%	5%	29%	73%**	19%	36%	45%	10%	36%	55%
Profound	4%	21%	70%	2%	3%		5%	12%	51%	2%	4%	38%

** combined "severe" and "profound" because n is too small

TABLE 1. Hearing loss population by ears impaired and perceived loss: hearing aid owners versus non-owners.

studies, and EuroTrak data demonstrate that one goal for European dispensers might be a concerted push for parity in this regard.

Figure 4 illustrates hearing aid adoption rates by age and country based on those who state they have a hearing loss. Not surprising, the adoption rate for those over age 74 is generally the highest. It declines with decreasing age, but increases again for the younger segments, especially in Europe.

In the United States, adoption rates within the younger segments are considerably lower.[1] Kochkin et al[4] detailed reasons why as many as 1.2 million US children ages 0 to 17 are reported by their parents to have hearing difficulties but do not use amplification. Thus, in this case, one goal for US dispensers and related organizations might be a concerted push for parity with their European counterparts in this regard.

A comparison of the European countries shows that adoption rates are highest in the UK for nearly all age groups. While aggregate adoption rate in France is similar to that in Germany, there is a tendency of higher adoption rates within the older age groups in Germany relative to France, and vice versa for the younger segments.

Hearing Loss Characteristics

Table 1 shows the degree of hearing loss for hearing aid owners and non-owners. In all countries analyzed, hearing aid owners are more likely to have a bilateral loss than non-owners (eg, 75% versus 57% in Germany) and are more likely to have a perceived severe-to-profound hearing loss (eg, 64% versus 19% in Germany).

Hearing Loss Population Demography

Table 2 (page 23) presents hearing aid adoption rates in the first column (percentage hearing aid owners of all people with stated hearing loss) by different demographics. Except in the United States, women tend to have a higher adoption rate than men. The size of the metro area did not appear to influence adoption rates. As might be expected, retired people have the highest adoption rate, which is doubtlessly correlated with their age (for a comparison of age groups, see the above discussion relating to Figure 3).

Table 2 also shows demography expressed as percentages for both the hearing aid owner and non-owner populations. In the United States, there are relatively more male hearing aid owners compared to the three European countries. Some trends can be observed in all countries. Similar to the US data, non-owners are significantly younger than owners. Furthermore, non-owners are more often employed compared to hearing aid owners, who are more often retired.

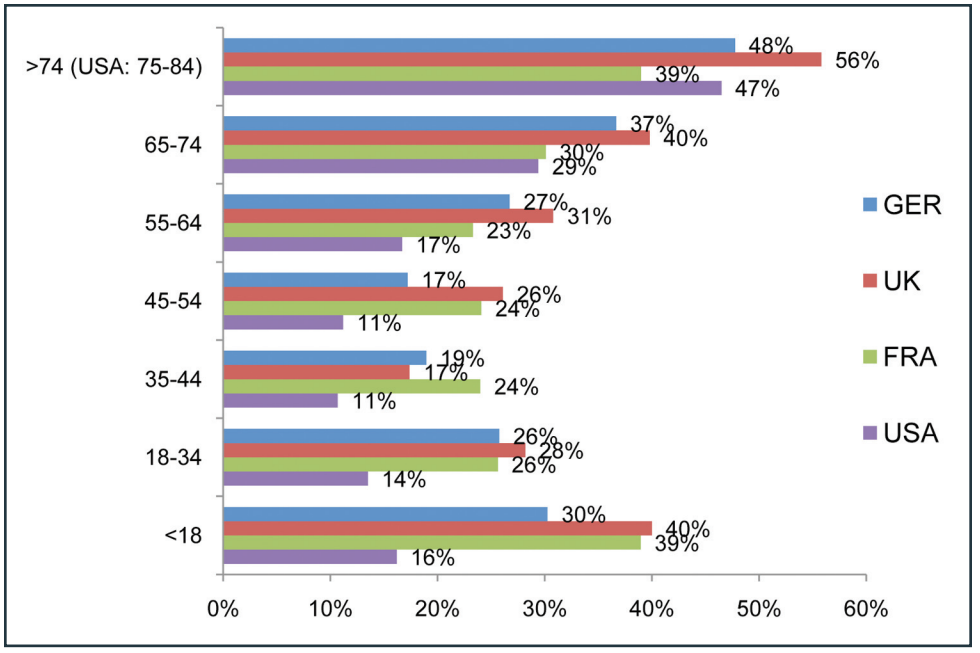

FIGURE 4. Hearing aid adoption rates by age and country, based on stated hearing loss on screening surveys. Note: In US, there was one group for the 75-84 years old and one for >84 years; in Europe, all above 74 years were analyzed in the same group.

HA-Owner	GER '09 n=503	UK '09 n=513	France '09 n=501	USA '08 (first time purchasers only) n=293
Hearing loss got worse	59%	48%	51%	55%
ENT/ Ear Doctor	59%	23%	57%	18%
Hearing aid dispenser / Audiologist (US:+ specialist)	45%	41%	40%	35%
Spouse, relative, child, friend	39%	34%	41%	51%
GP /Family doctor	26%	36%	16%	7%
Free (Insurance, hearing aid free of charge)	10%	15%	5%	9%
Safety concerns	10%	6%	12%	5%
Another hearing aid owner (word of mouth)	9%	7%	11%	7%
Price of hearing aid	9%	4%	11%	6%
Financial Situation improved	3%	3%	4%	4%
Co-worker or boss	3%	2%	4%	4%
Hearing loss article or literature	3%	2%	5%	2%
Internet	3%	3%	3%	1%
Newspaper advertisement	2%	4%	2%	3%
TV advertisement	2%	2%	3%	2%
Direct mail piece	2%	2%	0%	4%
Magazine advertisement	2%	1%	2%	1%
Telemarketing phone call	1%	1%	1%	0%
Radio advertisement	0%	1%	0%	0%
Celebrity or public personality	1%	0%	1%	0%
Rounded values; limited comparability USA (fist time purchasers only)				

TABLE 3. Key reasons for purchasing a hearing aid, in descending order for the three European countries. Note that the US data applies to first-time purchasers only, while the EuroTrak data applies to all hearing aid owners.

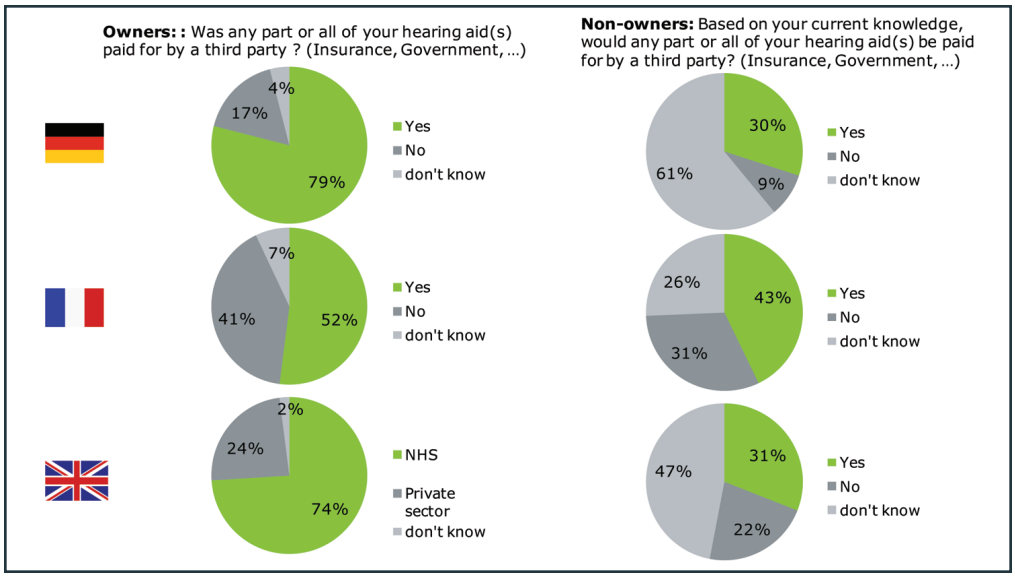

FIGURE 5. Third-party payment and information deficit of non-owners in Germany, France, and the UK. For comparison, MarkeTrak VIII[1] shows that 40% of US hearing aid purchases involved some form of third-party payment (including VA).

Factors Influencing the Purchase of a Hearing Aid

Table 3 (page 18) shows the key reasons influencing the purchase of hearing aids, measured using a multi-response question (ie, the hearing aid owners were allowed to choose all options that applied to them). One should be aware that the US MarkeTrak data isolate *first-time purchasers only*, while the EuroTrak data show the answers of *all* hearing aid owners.

Generally, the most important factors that influence people to purchase a hearing aid are an awareness of deteriorating hearing loss, advice from doctors, advice from hearing aid dispensers/audiologists, and the spouse, relatives, children, or friends. The role of the ENT or ear doctor seems to be less dominant in the UK and the US compared to Germany and France. In the UK, the general practitioner (GP) or family doctor plays a key role instead.

Third-party Payment

In the German and French surveys, hearing aid owners were asked whether their hearing aids were paid (fully or partly) by a third party (in Germany, by Krankenkasse, Invalidenversicherung oder Unfallversicherung; in France, assurance gouvernement, etc). In the UK study, they were asked if they bought their hearing aids in the private sector or they received free-of-charge NHS hearing aids. Hearing-impaired non-owners were asked related questions to get an indication of their knowledge about the possibility of third-party payment.

Figure 5 shows that 52% in France and 79% in Germany of the respective hearing aid owners were aware that they received some third-party payment, while 74% in the UK received free-of-charge NHS instruments. From MarkeTrak VIII, we know that third-party payment in the United States for 2008 (current year only) was 39.7%,

		GER 2009			UK 2009			FRA 2009			USA 2008 (MarkeTrak VIII)		
		Total			Total			Total					
	*	n=14185	n=1267	n=589	n=14980	n=876	n=550	n=15545	n=1139	n=484	n=14623		
Category	**Demographics**	Hearing aid adoption rate % (Based=stated hearing impaired)	Impaired hearing aid Non-owners (Categories add to 100%)	Hearing aid Owners (Categories add to 100%)	Hearing aid adoption rate % (Based=stated hearing impaired)	Impaired hearing aid Non-owners (Categories add to 100%)	Hearing aid Owners (Categories add to 100%)	Hearing aid adoption rate % (Based=stated hearing impaired)	Impaired hearing aid Non-owners (Categories add to 100%)	Hearing aid Owners (Categories add to 100%)	Hearing aid adoption rate % (Based=stated hearing impaired)	Impaired hearing aid Non-owners (Categories add to 100%)	Hearing aid Owners (Categories add to 100%)
Gender	Male	29%	56%	49%	36%	56%	50%	27%	57%	50%	26%	60%	61%
	Female	35%	45%	51%	41%	45%	50%	33%	43%	50%	25%	40%	39%
Age	<18	30%	4%	4%	40%	4%	4%	39%	4%	6%	16%	4%	2%
	18-34	26%	13%	10%	28%	11%	7%	26%	13%	10%	14%	7%	3%
	35-44	19%	14%	7%	17%	12%	4%	24%	9%	7%	11%	11%	4%
	45-54	17%	16%	7%	26%	15%	8%	24%	15%	11%	11%	21%	8%
	55-64	27%	16%	13%	31%	18%	13%	23%	20%	14%	17%	26%	15%
	65-74	37%	19%	24%	40%	17%	18%	30%	16%	16%	29%	18%	22%
	>74 (USA: 75-84)	48%	19%	36%	56%	22%	45%	39%	23%	35%	47%	12%	30%
	USA: 85+										64%	3%	16%
Inhabit / US: Metro size	<= 10'000	27%	24%	19%	44%	19%	22%	27%	41%	36%	-	-	-
	> 10'000, <= 50'000 (USA: <50k)	31%	27%	26%	36%	26%	22%	28%	27%	25%	21%	16%	13%
	> 50'000, <= 500'000	34%	26%	28%	39%	29%	29%	37%	20%	28%	23%	15%	14%
	> 500'000, <= 1 Mio. (USA:<=1.99 mil.)	37%	10%	13%	42%	11%	12%	29%	5%	5%	24%	23%	22%
	> 1 Mio. (USA: >=2 mil.)	34%	13%	14%	39%	15%	15%	31%	6%	6%	26%	47%	51%
Employment	Full time	22%	50%	32%	25%	43%	24%	27%	43%	38%	14%	47%	24%
(For US: refers only to adult hearing loss population)	Part time	22%	6%	4%	26%	7%	4%	25%	5%	4%	21%	10%	9%
	No job	25%	3%	3%	29%	7%	5%	22%	6%	4%	18%	12%	9%
	Retired	41%	38%	59%	50%	39%	65%	33%	45%	53%	37%	31%	59%
	Student	23%	3%	2%	28%	3%	2%	20%	2%	2%	excl.	excl.	excl.
Education: GER/UK/FRA/USA	Hauptschule/ Secondary, Grammar School/ Brevet/ Some elementary	39%	15%	22%	43%	25%	30%	32%	12%	14%	31%	1%	2%
(For US: refers only to adult hearing loss population)	Mittlere Reife (Realschule) / O Levels / CA-BEP / Elementary degree	27%	17%	14%	32%	16%	12%	25%	27%	21%	26%	5%	6%
	Abitur, Fachabitur/ A Levels/ Baccalauréats/ High scool (some)	29%	13%	12%	33%	11%	9%	33%	15%	17%	25%	26%	26%
	Lehrabschluss, Anlehre/ Ordinary National Cert/ BTS-DUT/ High school degree	32%	19%	20%	41%	4%	5%	23%	13%	9%	23%	27%	25%
	Höhere Berufsausbildung (Techniker, Meister) / Higher National Certificate/ License (BAC+3)/ College (some)	26%	12%	9%	41%	5%	6%	33%	8%	9%	22%	10%	9%
	Fachhochschule/ Technical High School/ Master1 et2-Diplôme d'Ingénieur/ Cellege degree	29%	9%	8%	37%	6%	6%	29%	10%	9%	24%	19%	19%
	Universitätsabschluss/ University/ Doctorat/ Cellege (post graduate)	30%	12%	12%	35%	24%	21%	56%	2%	6%	27%	12%	14%
	Anderes/ other/ autre/ -	27%	3%	3%	42%	10%	12%	31%	14%	15%	excl.	excl.	excl.
HH Income	< 10.000 EUR/£/EUR/$	21%	7%	4%	24%	9%	5%	19%	8%	5%	23%	6%	5%
(note: exchange rate not considered)	10.000 - 19.999 EUR/£/EUR/$	29%	18%	16%	41%	18%	20%	31%	17%	18%	29%	11%	14%
	20.000 - 29.999 EUR/£/EUR/$	33%	20%	21%	34%	21%	18%	29%	26%	25%	28%	15%	17%
	30.000 - 39.999 EUR/£/EUR/$	22%	20%	12%	45%	16%	20%	29%	22%	21%	25%	10%	10%
	40.000 - 49.999 EUR/£/EUR/$	35%	13%	15%	36%	14%	13%	26%	14%	11%	24%	10%	9%
	50.000 - 59.999 EUR/£/EUR/$	44%	8%	13%	50%	7%	11%	34%	7%	8%	24%	9%	8%
	60.000 - 79.999 EUR/£/EUR/ (USA: 60k $+)	35%	9%	10%	36%	11%	10%	45%	4%	8%	23%	40%	36%
	> 80.000 EUR/£/EUR/	47%	4%	8%	37%	5%	4%	41%	3%	4%	-	-	-

TABLE 2. Hearing aid adoption rates and populations by selected demography and countries, based on screening surveys. Sum may not total 100% due to rounding.

including aids provided by the Department of Veterans Affairs (VA).

There is strong evidence for an information deficit relative to third-party payment for hearing aids: only 30% and 31% of non-owners with hearing impairment in Germany and the UK (respectively) were aware of possible third-party payment for hearing aids.

Customer Satisfaction and Impact on Quality of Life

Table 4 shows the overall satisfaction with hearing aids for the entire hearing aid population, as well as for hearing aids that were purchased within the last 4 years. Compared to the entire hearing aid owner population, the overall satisfaction for those who purchased their hearing aids within the last 4 years is higher (by 5 percentage points). This is a consistent finding across all the measured countries.

It is also noteworthy that there are some differences across countries with regard to the level of overall satisfaction. France gets the highest scores, followed by the UK, the US, and Germany. Many factors could potentially influence these subjective scores, including the product mix and pricing tiers in a country, perceived value (ie, hearing handicap benefit divided by out-of-pocket cost), differences in best practices protocols and/or counseling, greater use of assistive devices and telecoils/inductive looping, stigma and style issues, the efficient allocation of hearing aids (eg, are those receiving hearing aids the ones who would benefit most from the devices?), binaural fittings, average age of hearing aids in a market, etc. Additionally, any of these factors are potentially influenced by the existing reimbursement schemes in each country. Cultural differences may also play a role. All these factors should be kept in mind when analyzing the satisfaction data.

Table 4 also compares the percentage of hearing aid owners who never use their hearing aid(s), devices that are often referred to as "in-the-drawer" hearing aids. The data demonstrate that there are more hearing aids in the drawer in the United States compared to Europe—an extremely interesting fact that warrants further investigation.

Figure 6 shows detailed customer satisfaction ratings (percent satisfied) for different criteria by country. Note that, while the European data refer to all hearing aid users, the US data (dotted line) refer to owners with hearing aids purchased within the last 4 years, and may therefore be biased toward better values (they are presented here *only* for interest, and cannot be assumed to be on par with the overall user populations in the European countries). Generally speaking, satisfaction is high with dispensers and with the use of the hearing aids in what can be subsumed as easy listening situations, such as "conversation with one person or in small groups," "watching TV," and "leisure activities." Challenges remain in the more difficult listening situations, such as "conversation in large groups," "use in noisy situations," and "on the telephone."

The differences across the countries correlate with the differences in overall satisfaction shown in Table 4. The best values are for France, followed by the UK, and Germany. Nevertheless, the spread of the values across the countries gets higher for the difficult listening situations and sound-quality criteria. It has been shown that these tend to be the criteria where the biggest improvements for new hearing aid generations can be observed.

It is not surprising that the "performance versus money spent" is rated best in the UK, where most hearing aid owners received their device for free from NHS. Apparently, the rating for "battery life" seems to be related to the financial burden it causes (in the UK, for example, batteries are provided for free).

In the EuroTrak studies, hearing aid owners were asked, "Since you started using your hearing aid(s), please rate the changes you have experienced in each of the following areas, which you believe are due to your hearing aid(s)." The top-rated impacts on quality of life are summarized in Table 5, with "communicate more effectively," "social life," "relationships at home," and "ability to participate in group activities" cited most often by hearing aid owners. The data show similar results on a lower level from the perspective of close relatives or housemates of these hearing aid owners.

Reasons for Non-adoption of Hearing Aids

Non-adopters with an admitted hearing loss were presented with possible reasons for their decision not to use hearing aids. They were asked to rate statements on a 5-point scale where 1 was "Definitely a reason" and 5 "Definitely not a reason." In this analysis, the scale-point 3 ("somewhat a reason") is the midpoint, while "definitely a reason" covers the top two points on the scale.

To analyze the reasons why people with hearing impairment do not own a hearing aid, the authors applied a similar technique as the one used in the MarkeTrak studies: since hearing aid adoption is related to degree of hearing loss, both aided and unaided subjects were asked to complete different subjective measures of hearing loss listed below:

- Number of ears impaired (one or two);
- Stated hearing loss (mild to profound);
- Scores on six APHAB[5] EC-like questions (scaled in points of 1 to 7);
- When *not* using a hearing aid, how difficult is it for you to follow conversations in the presence of noise?

A factor analysis was performed to examine "degree of hearing loss." People were then segmented into two groups of the same size based on their responses to all hearing loss measures: 50% were placed in the milder hearing loss group, and 50% in the more severe hearing loss group. For the following analysis of the reasons for non-adoption, only the second group of non-owners (top 50% of people with hearing loss) were included, as their perceived degree of hearing impairment was similar to that of hearing aid owners. Therefore, the bias of what could be a naive reason—not having an

	Germany Euro Trak 2009 n=503	UK Euro Trak 2009 n=513	France Euro Trak 2009 n=501	USA Marke Trak VIII 2008 n=2953
Overall satisfaction	72%	77%	86%	74%
< 4 years only	77%	82%	91%	79%
HA in drawer	4.7%	7.0%	5.7%	12.4%
< 4 years only	3.0%	4.6%	2.1%	7.5%

TABLE 4. Overall satisfaction with hearing aids ("% very satisfied" + "% satisfied" + "% somewhat satisfied") and hearing aids in the drawer. Note: For EuroTrak ≤= 4 years was defined as being purchased during 2006-2009.

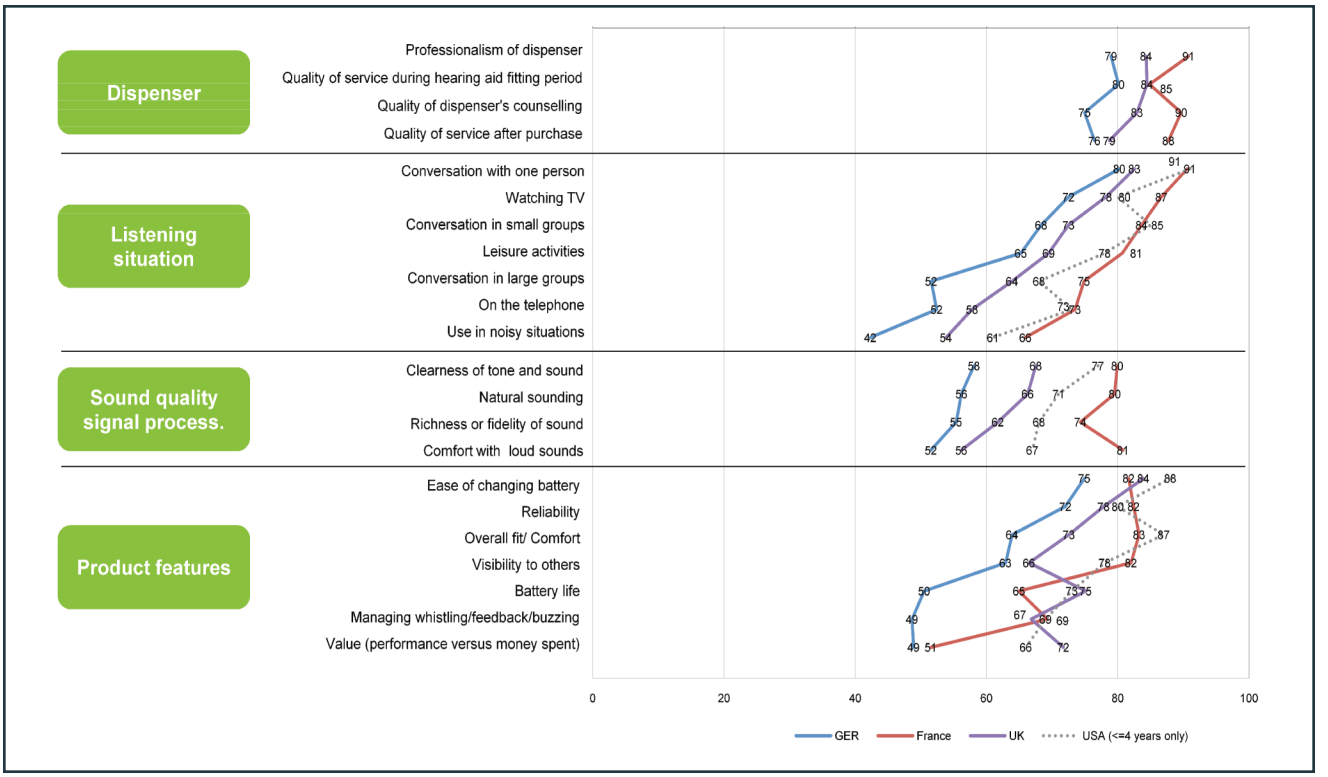

FIGURE 6. Detailed customer satisfaction ratings (in %). The figures represent the sum of "% somewhat satisfied" + "% satisfied" + "% very satisfied." It is important to note that, for the USA, the above figures represent hearing aids ≤4 years of age only (see note in text). Blank means no data available.

adequate hearing loss for a hearing aid—was minimized. As shown in Table 6, the top reason for non-adoption of hearing aids in Germany and the UK is that people believe they can hear well enough, while in France and the US the top reason is "can't afford"—obviously related to less third-party coverage of hearing aids in those countries. Another important reason for non-adoption is that people believe hearing aids are uncomfortable.

The data show that people tend to believe that their hearing loss is too mild or that they would not benefit from hearing aids. This is remarkable because a significant proportion of these people—non-adopters in the more severe 50% hearing loss segment only, whose hearing loss is probably comparable to that of the typical hearing aid user—must be experiencing communication difficulties.

It is difficult to determine the origins of their belief that hearing aids won't help them, but there is evidence that their beliefs about their hearing are influenced by medical advice. We have already mentioned the critical impact of the ENTs/ear doctors, GPs/family doctors, and hearing aid dispensers in Table 3, where advice from these professionals appears as top reasons for purchasing hearing aids.

Inversely, it is worth noting that, when people with self-reported hearing loss in Germany, France, and the UK seek professional advice from ENTs and GPs, they are advised to see a hearing care professional in 58% to 71% of the cases (depending on country and profession). This means that people with self-reported hearing loss *will not be recommended to seek further assistance 42% to 29% of the time.* This is also reflected in the so-called "drop-out rate"—people with hearing loss who see their family doctor or ENT doctor, and then are recommended to do nothing about it. This figure varies between 39% and 45% in the three European countries.

In the United States, MarkeTrak reports that only 14% of those who visited their family doctor for a health check were offered a hearing screening test. This percentage has been relatively static, despite a law passed in 2003 that encouraged doctors to include hearing screening in their health checks. Strikingly, only a slight increase in screenings occurred in individuals age 65+ following this stipulation.

Summary

To the authors' knowledge, this is the first time that survey data about hearing, hearing loss, and hearing aids from the major European markets were reported and compared with US market data. A considerable amount of similarities and correlations was found in this worldwide comparison, but also some substantial differences across the observed countries were identified:

- The prevalence of stated (not measured) hearing loss varies from 9.5% to 13.1%, and the percentage of those who own a hearing aid (adopters) based on the entire population varies from 2.8% to 4.2%.
- Binaural hearing aid use in Germany (60%), France (58%), and the UK (47%) is significantly lower than in the United States (74%). In light of the proven benefits of binaural amplification, this appears to be an issue that should be addressed by European dispensers and third-party payors.
- In all countries analyzed, the adoption rate (people with hearing aid divided by the people with stated hearing loss) is highest for people over age 74 and declines with younger age, but increases again for the youngest segments. In the United States, adoption rates within the younger segments are considerably lower—which appears to be an issue to address for US dispensers and government entities.[4]
- Hearing aid owners are more likely to have a bilateral loss than non-owners

	% who state with hearing aid is better		
			
Communicate more effectively	67%	68%	79%
Social life	53%	57%	74%
Relationships at home	47%	53%	71%
Ability to participate in group activities	58%	60%	68%

TABLE 5. Selected statements on the positive impact of hearing aids on quality of life (sum of "% better"+ "% a lot better"). Statements chosen were the top-4 in France. For other responses, see online version of this article.

and are more likely to have a perceived severe-to-profound hearing loss.

- Non-adopters are significantly younger and more often employed compared to hearing aid owners who are more often retired.
- Generally, the most important factors that influence people to purchase a hearing aid are an awareness of their worsening hearing status and advice from doctors, hearing aid dispensers/audiologists, and their spouse, relatives, children, and friends.
- About half (52%) of French hearing aid owners and four-fifths (79%) of German owners received some form of third-party payment assistance, compared to 39.7% of people in the US (2008 data, includes VA dispensing). In the UK, 74% received free-of-charge NHS instruments. EuroTrak points to a remarkable information deficit among hearing-impaired non-owners concerning the third-party payment available to them.
- 72% to 86% of hearing aid owners are generally satisfied with their devices. In all countries, hearing aid owners who own a new-generation hearing aid are significantly more satisfied compared to the overall hearing aid population. Satisfaction for hearing aids that were purchased 4 years ago or less ranges from 77% to 91%. For the European countries, it was shown that hearing aids have a positive impact on quality of life.
- Satisfaction is generally high with dispensing professionals, as well as with hearing aid use in easy listening situations. Challenges remain in the more difficult listening situations, such as "conversation in large groups," "use in noisy situations," and "on the telephone."
- The top reason for non-adoption in Germany and the UK is that people believe they can hear well enough, while in France the top reason relates to affordability. Another generally important reason for non-adoption is that people believe hearing aids are uncomfortable.
- Medical advice (ENTs/ear doctors and GPs/family doctors) plays a key role in the decision process of getting hearing aids. Of every 100 people with stated hearing loss in these countries, 39 to 45 do not get positive medical advice relative to hearing aids.

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	GER 2009			UK 2009			FRA 2009			USA 2005, adults only		
	% Definite	% Somewhat	Rank	% Definite	% Somewhat	Rank	% Definite	% Somewhat	Rank	% Definite	% Somewhat	Rank*
Uncomfortable	31%	27%	4	44%	19%	3	58%	19%	2	13%	15%	18
Hear well enough in most situations	37%	29%	1	41%	28%	1	37%	25%	10	24%	29%	2
They do not restore your hearing to normal	38%	19%	5	35%	18%	7	43%	33%	3	27%	20%	6
They do not work well in noisy situations	44%	18%	3	36%	22%	6	43%	22%	9	32%	16%	5
Have more serious priorities	35%	18%	9	38%	23%	4	54%	15%	5	32%	20%	3
Hearing loss not severe enough	37%	26%	2	40%	23%	2	28%	22%	15	25%	27%	3
Cannot afford hearing aids	37%	16%	8	34%	13%	10	62%	18%	1	49%	15%	1
Ear doctors' opinion (ENT)	37%	18%	7	31%	12%	12	47%	26%	4	22%	13%	13
Would be embarrassed to wear a hearing aids	30%	16%	12	43%	16%	5	46%	19%	8	19%	15%	15
Bad design	31%	18%	11	34%	12%	11	36%	25%	11			
Family doctor's opinion (Hausarzt)	28%	14%	15	26%	14%	13	39%	27%	7	14%	15%	17
HA-specialist's opinion (HörgeräteAkustiker)	29%	13%	14	25%	10%	16	38%	28%	6	10%	10%	21
Do not admit I have a hearing loss in public	29%	10%	16	34%	17%	8	42%	16%	12	22%	13%	13
Have hearing loss in only one ear	39%	16%	6	26%	10%	14	32%	10%	22	23%	11%	15
Have hearing loss only with high pitch sounds	35%	14%	10	22%	9%	19	22%	27%	16	19%	20%	10
Have tinnitus (ringing in ears)	28%	10%	18	29%	7%	15	26%	28%	13	29%	14%	8
Have not had hearing tested yet	23%	11%	20	37%	10%	9	34%	10%	21	29%	11%	9
Another hearing aids owner's opinion	26%	18%	13	18%	11%	21	21%	25%	20	11%	15%	19
Have hearing loss only with low frequency sounds	17%	12%	21	21%	14%	17	17%	31%	17	18%	20%	11
Have sensory-neural hearing loss (nerve deafness)	27%	13%	17	24%	10%	18	19%	13%	25	20%	16%	12
Have tried hearing aids and they do not work	26%	9%	19	13%	10%	24	31%	15%	18	9%	7%	24
Social / Family opinion such as child, spouse, friend	13%	16%	22	14%	16%	20	20%	26%	19	24%	23%	6
Hearing problem requires surgery	21%	8%	23	17%	5%	25	33%	18%	14	7%	7%	25
Do not trust HA-dispenser	12%	12%	24	18%	10%	22	18%	18%	24	11%	11%	20
I have vision or dexterity problems	14%	9%	25	11%	3%	27	25%	13%	23	9%	10%	22
Do not know where to get hearing aids	5%	3%	27	16%	10%	23	14%	15%	26	8%	9%	23
Had surgery - hearing aids won't help	21%	2%	26	16%	3%	26	19%	8%	27	6%	3%	26

*Rank of shown reasons only

TABLE 6. Reasons why people with hearing loss do not use hearing aids; top 50% of hearing loss sorted by overall average rank across the European countries. Greyed cells show the top-three reasons per country. USA data are from 2005 and represent adult population only. Blank means no value available. Values are rounded.

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Correspondence can be addressed to HR *or Søren Hougaard at sh@ehima.com.*

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