

**Madagascar (2008): Malaria TRaC Study  
Evaluating the Use of Insecticide Treated  
Nets among Pregnant Women and  
Mothers/Caregivers  
of Children Younger than Five Years in  
Endemic area**

**Third Round**

**T h e P S I D a s h b o a r d**

**Antananarivo, Madagascar  
June 2009**

**PSI's Core Values**

Bottom Line Health Impact \* Private Sector Speed and Efficiency \* Decentralization, Innovation,  
and Entrepreneurship \* Long-term Commitment to the People We Serve

Research Division  
Population Services International  
1120 Nineteenth Street NW, Suite 600  
Washington, D.C. 20036

**Madagascar (2008): Malaria TRaC Study Evaluating the Use of  
Insecticide Treated Nets among Pregnant Women and  
Mothers/Caregivers of  
Children Younger than Five Years in Endemic Area**

**Third Round**

PSI Research Division  
2009

© Population Services International, 2009

**Contact Information:**

---

RAHARINJATOVO Jacky Aubin  
Research Quantitatives Department  
Population Services International  
Antananarivo, Madagascar  
Tel : +261 20 22 629 84  
Fax : + 261 20 22 361 89  
Email : [jackyr@psi.mg](mailto:jackyr@psi.mg)

---

**Acknowledgements:** This survey was made possible through support provided by the United States Agency for International Development (USAID) Mission to Madagascar and the Global Fund to Fight AIDS, Malaria and Tuberculosis (GFTAM). The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of GFATM and USAID. We would like to address our acknowledgement to Population Services International Madagascar staff: Iarimalanto RABARY, Research, Monitoring and Evaluation Director, Olivier Letouzé, Maternal and child health Director, Andry RABEMANANTSOA, Research, Monitoring and Evaluation Senior Coordinator, Njara RAKOTONIRINA former malaria prevention program Coordinator, Rova RATSIMANDISA malaria treatment program Coordinator, for their important input on this study. We are grateful to Navendu Shekhar, Regional Researcher, for his valuable contribution in designing the study, for data analysis assistance, table production and for his helpful comments on an earlier draft of this report.

## Résumé

**Contexte & Objets de la Recherche** PSI Madagascar a conduit la troisième enquête ménage dénommée TRaC ou « Tracking Results Continuously » qui permet de suivre dans le temps les indicateurs et les comportements des groupes cibles en matière de prévention de paludisme. Cette étude a été menée en Novembre/Décembre 2008 sur un échantillon représentatif des femmes responsables d'enfant de moins de cinq ans et/ou des femmes enceintes dans les zones endémiques définies par OMS et le Ministère de la santé. L'étude de base a été effectuée en Octobre/Novembre 2004 et la première étude de suivi a été conduite en Octobre/Novembre 2006.

L'étude TRaC permet de déterminer les facteurs de changement de comportement sur l'utilisation de moustiquaire imprégnée d'insecticide par les femmes enceintes et les enfants moins de cinq ans, de mesurer les indicateurs du cadre logique liés à la prévention du paludisme et d'évaluer les efficacités des activités de communication. Les résultats serviront en effet comme outils permettant de mieux orienter les futures activités.

Le projet TRaC est conçu essentiellement pour guider les programmeurs dans la prise de décision basée sur l'évidence. Les résultats des recherches présentés sous forme de tableaux de bord ont été analysés suivant la méthode standard développée par PSI Washington. Le tableau de bord contient la table de segmentation, la table de suivi et la table d'évaluation qui servent d'instruments aux programmeurs dans l'élaboration des stratégies de communication et du plan marketing.

**Description des interventions** L'objectif de PSI Madagascar sur la prévention du paludisme est de réduire la mortalité et la morbidité en mettant à la disposition de la population des moustiquaires traitées à l'insecticide et de promouvoir son utilisation. Depuis 2001, PSI Madagascar distribue des moustiquaires traitées à l'insecticide de marque Super-Moustiquaire à des prix fortement subventionnés qui sont estimés approximativement à \$1.5 l'unité. Pour la période de 2007-2008, PSI Madagascar a distribué plus 1 527 000 Super-Moustiquaire. S'ajoute à cela la distribution gratuite des moustiquaires imprégnées que le Ministère de la santé et tous les acteurs, œuvrant dans le domaine de la prévention de paludisme, effectuait durant la semaine de la santé de la mère et de l'enfant en Octobre 2007.

Des campagnes de sensibilisation ont été dressées pour influencer la population vers le comportement sain voulu et pour accroître leurs connaissances. Des émissions comme « Aina Sarobidy, Toky sy Antoka » ont été conçues pour être diffusées à la radio, à la télé et à travers le cinémobile. Des matériels de communication comme stylo, teeshirt, casquette etc. ont été aussi utilisés pour transmettre des messages. Les communications interpersonnelles par le biais des Agent Communautaire ou AC ont aussi leur rôle pour donner des conseils aux groupes jugés vulnérables.

**Méthodologies** L'analyse est basée sur les données collectées en 2004, 2006 et 2008. Des femmes de 15 à 49 ans constituant l'échantillon ont été sélectionnées de manière aléatoire pour déterminer la représentativité aussi bien au niveau national qu'au niveau des strates (urbain/rural). Les méthodologies d'échantillonnage pour les trois années d'enquêtes utilisaient la probabilité proportionnelle à la taille suivant les tirages aréolaires à deux degrés à savoir Fokontany premier degré et Ménage second degré.

Les trois études nécessitaient 2 138, 2 559 et 1761 femmes 14 à 49 ans respectivement en 2004, en 2006 et en 2008. L'analyse des données ont été limitée sur les ménages avec femmes 15 à 49 ans mères/responsables d'enfant de moins de cinq ans ou femmes enceintes. Cependant, les indicateurs liés à

la possession de moustiquaire imprégnée d'insecticide est basée sur toutes les femmes enquêtées afin de mesurer la couverture de ménage en moustiquaire.

L'enquête TRaC est répétée tous les deux ans afin de fournir : le niveau et tendance des indicateurs, l'effet des interventions et les déterminants de changement de comportement. Ces facteurs de changement de comportements sont catégorisés en opportunité, capacité et motivation. Les résultats sont présentés sous forme de tableau standard ou tableau de bord. Ces tableaux ont été produits en utilisant les modules régression linéaire et régression logistique sous SPSS 16.0. Les données ont été pondérées utilisant le module échantillon complexe du dit logiciel. Les résultats ont été contrôlés par rapport à l'âge, le niveau d'éducation, la situation matrimoniale et le niveau socio-économique.

### **Les principaux résultats**

#### **L'analyse de suivi et tendance montre que:**

1. Une augmentation importante de la couverture en moustiquaire a été notée grâce à la distribution considérable de moustiquaire imprégnée d'insecticide réalisée dans les deux dernières années. En effet, l'augmentation est presque triplée allant de 21% (en 2004) à 40% (en 2006) et à 86% (en 2008). Pour que tous les membres de ménage soient épargnés de la piqûre des moustiques, la politique nationale recommande aussi la possession d'au moins deux moustiquaires par ménage. L'enquête indiquait des résultats très encourageant sur cet indicateur avec une hausse significative de 6%, 15% à 44% respectivement en 2004, 2006 et 2008.
2. Bien que la couverture soit élevée, l'utilisation de moustiquaire la nuit dernière par les groupes biologiquement vulnérable ne suivait pas la même tendance si on se basait sur les écarts constatés entre utilisation et possession. La variation de la proportion des femmes enceintes dormait sous moustiquaire imprégnée d'insecticide la nuit précédant l'enquête est de 11% en 2004, 27% en 2006 et 58% en 2008. Il s'ensuit ainsi que la proportion des enfants de moins de cinq ans qui ont dormi sous une moustiquaire traitée varie de 13% en 2004 à 33% en 2006 et à 69% en 2008. A noter que les pourcentages présentent toujours des différences significatives entre les trois années de collecte. La population urbaine adopte d'avantage ce comportement comparée à celle qui réside dans les milieux ruraux.
3. La proportion des femmes ayant eu d'enfant durant les deux dernières années et qui ont reçu deux doses de traitement préventif intermittent de paludisme est relativement faible (22%).
4. Il ressort de cette enquête TRAC que les femmes qui savent où obtenir de moustiquaire traitée varient d'une façon significative pour les deux dernières enquêtes de suivi. En 2006, 62% des femmes avaient cette perception contre 79% en 2008. Depuis 2004, la proportion des femmes qui connaissaient que le paludisme se transmettait seulement par les piqûres des moustiques reste inchangée.
5. On note aussi une variation significative sur le fait que la moustiquaire imprégnée est la plus efficace pour prévenir le paludisme. En effet, si la proportion était de 71% en 2004, elle est estimée à 98% en 2008.
6. On enregistre une hausse significative sur les pourcentages des femmes qui perçoivent que les femmes enceintes sont les plus exposées au paludisme. Les chiffres variaient de 16% en 2004 à 28% en 2006 qui passaient encore à 46% en 2008. En revanche, les variations des chiffres sur la perception de la sévérité des menaces chez les enfants de moins de cinq ans n'étaient pas significatives.
7. Ces deux dernières années, PSI Madagascar a diminué les activités de communication pour investir d'avantage dans les messages interpersonnels d'où la baisse enregistrée sur le nombre de femmes ayant entendu des spots radios et les émissions « Toky sy Antoka ». Par ailleurs, certains indicateurs relatifs aux émissions TV ne connaissent aucune variation. En conséquence, on note une augmentation des femmes ayant assisté à des animations cinémobiles variant de 10% en

2006 à 15% en 2008. PSI a aussi entamé les activités de communications au niveau des Agents Communautaires, 23% en 2008.

8. La source d'approvisionnement en moustiquaire connaissait une hausse au niveau des secteurs publics qui est sûrement liée à la forte distribution gratuite de moustiquaire pendant la semaine de la santé de la mère et de l'enfance en octobre 2007 expliquant ainsi la diminution de la part de marché des produits vendu à des prix fortement subventionnés.

**L'analyse de segmentation montre que:**

L'analyse de segmentation a divisé en deux comportements à savoir la possession de moustiquaire imprégnée d'insecticide et l'utilisation de moustiquaire la nuit précédant l'enquête.

1. Les perceptions de disponibilité au niveau des épiceries et au niveau des centres de santé ont des influences significatives sur la possession de moustiquaire. Il en est de même pour la norme sociale. Les connaissances relatives à l'utilisation de moustiquaire imprégnée a aussi une liaison significative avec la possession de moustiquaire imprégnée. Quant à la motivation, on a enregistré que les fausses croyances relatives aux effets négatifs de l'insecticide, les modes de transmission du paludisme et les résultats attendus sont des déterminants sur la possession des moustiquaires imprégnées.
2. Quant au comportement sur l'utilisation de moustiquaire imprégnée la nuit précédant l'enquête, les notions de disponibilités et de menaces sur la susceptibilité de la maladie sont des facteurs significatifs influençant sur le comportement voulu. Cependant, le facteur disponibilité au niveau des centres de santé a un effet négatif par rapport aux autres déterminants. En effet, les niveaux moyens diminuent de 2.66 chez les non utilisatrices à 2.48 chez les utilisatrices. Ce qui explique que la perception de disponibilité au niveau des centres de santé ne s'associe pas avec l'utilisation. L'odds ratio l'affirme avec une probabilité de 0.53.

**L'analyse des évaluations montrent que:**

1. Les activités de communication ont des effets positifs sur l'utilisation des moustiquaires chez les femmes enceintes. Plus les femmes sont exposées plus elles adoptent le comportement sain voulu. Quant aux autres indicateurs de comportement, les messages n'ont pas d'effet ni sur l'utilisation ni sur la volonté d'acquérir de nouvelle moustiquaire. En effet, quelque soit le niveau d'exposition, les variations ne sont pas significatives.
2. Pour la plupart des indicateurs de changement de comportement, l'écart significatif est enregistré entre faible et moyen exposition à l'exception des deux facteurs sur les modes de transmission du paludisme et la sévérité des menaces qui présentent des améliorations significatives entre exposition moyenne et exposition élevée.

**Recommandations Programmatiques**

Le tableau de bord de PSI sur "l'utilisation du MID" indique clairement les 2 bulles de la table de segmentation à dresser afin d'augmenter la proportion de femmes de 15 à 49 ans, femmes enceintes ou mères d'enfant de moins de 5 ans et enfants de moins de 5 ans qui dorment régulièrement sous le MID toutes les nuits.

**KNOWLEDGE :** La connaissance du mode de transmission du paludisme demeure considérablement bas depuis 2004 jusqu'en 2008. Non seulement, Très peu de gens (35%) connaissent que le paludisme se transmet à travers la piqure de moustique mais ce taux est resté inchangé depuis 2004, aucune augmentation significative n'a été constatée.

**THREAT :** La perception que “les femmes enceintes sont à risque d’être atteint du paludisme » a significativement augmenté en 2008 de 28.1% à 45.8%. Mais elle demeure en deçà de 50.0% alors que les femmes enceintes figurent parmi la population la plus vulnérable au paludisme. **Il n’existe plus de la moitié des femmes enceintes qui n’est pas protégée du paludisme.**

Par ailleurs, nous devons aussi concentrer notre effort sur d’autres facteurs :

- L’utilisation constante de MID (évaluée à travers l’utilisation la nuit précédant l’enquête) a significativement augmenté au niveau des femmes enceintes (de 26.8% à 57.6%) et au niveau des enfants de moins de 5 ans (de 33.4% à 69.1%). Mais la proportion entre possession et utilisation présente un écart considérable, surtout en 2008. A titre d’exemple en milieu rural, en 2006, environ 37% possède au moins 1 MID et 33.1% déclare l’avoir utilisé la nuit précédant l’enquête. En 2008, 85,1% possède au moins 1 MID mais seulement 68.1% déclare l’avoir utilisé la nuit précédant l’enquête. **L’encouragement à l’utilisation, à l’utilisation régulière et systématique de MID tout au long de l’année demeure une priorité.**
- Bien qu’il existe une significative augmentation en ce qui concerne l’utilisation constante du MID, elle concerne surtout les femmes enceintes et les enfants de moins de 5 ans. L’utilisation étendue au niveau de tous les membres de la famille est basse : 22.0% au niveau national, 21,3% en milieu rural et 25.2% en milieu urbain. Si la politique actuelle de lutte contre le paludisme préconise l’élargissement de l’utilisation du MID au niveau de toute la famille, **il est primordial d’élargir la cible d’action et de communication au niveau de toute la famille.**

D’une manière générale, il semble aussi que les messages et les communications ont davantage de portée en milieu urbain que rural, quelque soit le message. Ce qui impliquera probablement une révision ou un renforcement d’approche de communication pour avoir une meilleure portée en milieu rural.

## Monitoring Table

## Trends and Levels of Indicators for Malaria Prevention: Percentages and Mean Scores for Behaviors, Behavioral Determinants, Exposure, and Source of Supply in Madagascar Nationally (2004 versus 2006 versus 2008)

## Risk Group: 15 to 49 Year Old Pregnant Women and Mothers/Caregivers of Children under 5 Years of Age in Madagascar Nationally

## Behavior: Slept under a Treated Net Last Night

INDICATORS	2004 (N=1422)	2006 (N=1487)	2008 (N=1161)	Sig.
<b>BEHAVIOR/USE</b>	%	%	%	
- Slept under a treated net the previous night (among pregnant women) <sup>1</sup>	11.1a	26.8b	57.6c	***
- Slept under a net the previous night (among pregnant women) <sup>1</sup>	50.1a	46.0a	64.2b	ns
- Slept under a treated net the previous night (among children under five years of age) <sup>2</sup>	13.3a	33.4b	69.1c	***
- Slept under a net the previous night (among children under five years of age) <sup>2</sup>	50.7a	51.0a	74.6b	***
- Slept under treated net last night (among all family members) <sup>3</sup>	n/a	n/a	58.0	
- Slept under a net last night (among all family members) <sup>3</sup>	n/a	n/a	63.5	
- Owned at least one insecticide treated mosquito net (among all household)	20.5a	40.0b	85.8c	***
- Owned at least one untreated mosquito net or insecticide treated net (ITN) (among all household)	68.4a	60.0a	89.0b	***
- Owned at least two treated mosquito net (among all household)	6.1a	15.2b	43.6c	***
- Owned at least one treated mosquito net (among household with pregnant women or children under five)	19.6a	41.6b	85.6c	***
- Received two doses of IPTp (among women who were pregnant during last 2 years) <sup>4</sup>	n/a	n/a	21.8	

OPPORTUNITY	% or Mean Scores	% or Mean Scores	% or Mean Scores	
<b>Availability</b>				
- Know where to obtain ITN (among those who know ITN) <sup>5</sup>	57.7a	62.3a	78.6b	***
- Got ITN from community agent	n/a	4.2a	5.3a	ns
- Got ITN from private sector	n/a	47.0a	6.6b	***
- Got ITN from public sector	n/a	45.5a	88.1b	***
- Got ITN from other sector	n/a	4.5a	7.0a	ns
- Know to go to the CSB to receive 2 doses of IPTp	n/a	n/a	97.4	
Mean scores within grocers	n/a	n/a	2.48	
Mean scores within Health Center	n/a	n/a	2.48	
<b>Brand Attribute</b>				
- Preferred ITN branded Olyset				
Mean	n/a	n/a	0.39	
- Preferred ITN branded Permanet				
Mean	n/a	n/a	0.71	
- Preferred ITN branded Super moustiquaire				
Mean	n/a	n/a	1.73	
- Preferred ITN branded Tsaralay				
Mean	n/a	n/a	0.70	
<b>Social Norm</b>				
Mean	n/a	n/a	2.45	

ABILITY	% or Mean Scores	% or Mean Scores	% or Mean Scores	
<b>Knowledge</b>				

- Know malaria is transmitted only through mosquitoes	29.7a	34.9a	35.5a	ns
- Know that is necessary to get IPTp during pregnancy	n/a	n/a	98.3	
Mean scores on prevention	n/a	n/a	2.96	
Mean scores regarding ITN use	n/a	n/a	3.77	
<b>Social Support</b>				
- Think that neighbors support the practice of IPTp			86.9	

MOTIVATION	% or Mean Scores	% or Mean Scores	% or Mean Scores	
<b>Attitude</b>				
- Think that using ITN is healthy and safe	n/a	n/a	99.5	
Mean				
<b>Belief</b>				
- Believed that ITN is used not only during rainy season	46.7a	58.9b	75.1c	***
- Believed that ITN does not have ill effects on health	61.1a	69.9b	72.3b	*
Mean scores on negative effects	n/a	n/a	3.27	
Mean scores on periodicity	n/a	n/a	3.04	
Mean scores on cause of malaria	n/a	n/a	2.92	
<b>Outcome Expectation</b>				
- Cited treated nets as the most effective method of preventing malaria	71.4a	81.6b	97.9c	***
Mean	n/a	n/a	2.90	
<b>Threat</b>				
- Know malaria is most serious for pregnant women	15.7a	28.1b	45.8c	***
- Know malaria is most serious for children under 5 years of age	53.0a	60.8b	65.5b	**
Mean scores threat severity	n/a	n/a	2.73	
Mean scores threat susceptibility	n/a	n/a	2.86	
<b>Willingness to Pay</b>				
- Mothers/caregivers who consider ITN affordable (among those who heard of Super Moustiquaire) <sup>6</sup>	58.7a	76.9b	86.0c	***
Mean	5693.35a	6612.21b	6664.88b	**

EXPOSURE	%	%	%	
- Heard the slogan of SuperMoustiquaire	45.8a	53.2ab	58.8b	*
- Heard radio spots on SuperMoustiquaire	35.1a	65.7b	52.0c	***
- Saw TV spots on Supermoustiquaire	14.5a	11.8a	13.9a	ns
- Heard program "Toky sy Antoka" on Supermoustiquaire	13.4a	32.9b	13.7a	***
- Attended mobile video unit sessions on SuperMoustiquaire	6.3a	9.8a	14.7b	**
- Saw or got Behavior Change Communication materials on Supermoustiquaire	43.9a	52.6a	33.7b	***
- Attended or seen advices or messages on Super Moustiquaire from AVBC	n/a	n/a	22.9	
- Heard program "Aina sarobidy" on Supermoustiquaire	n/a	n/a	19.9	
- Heard or seen messages from stakeholders	n/a	n/a	83.0	

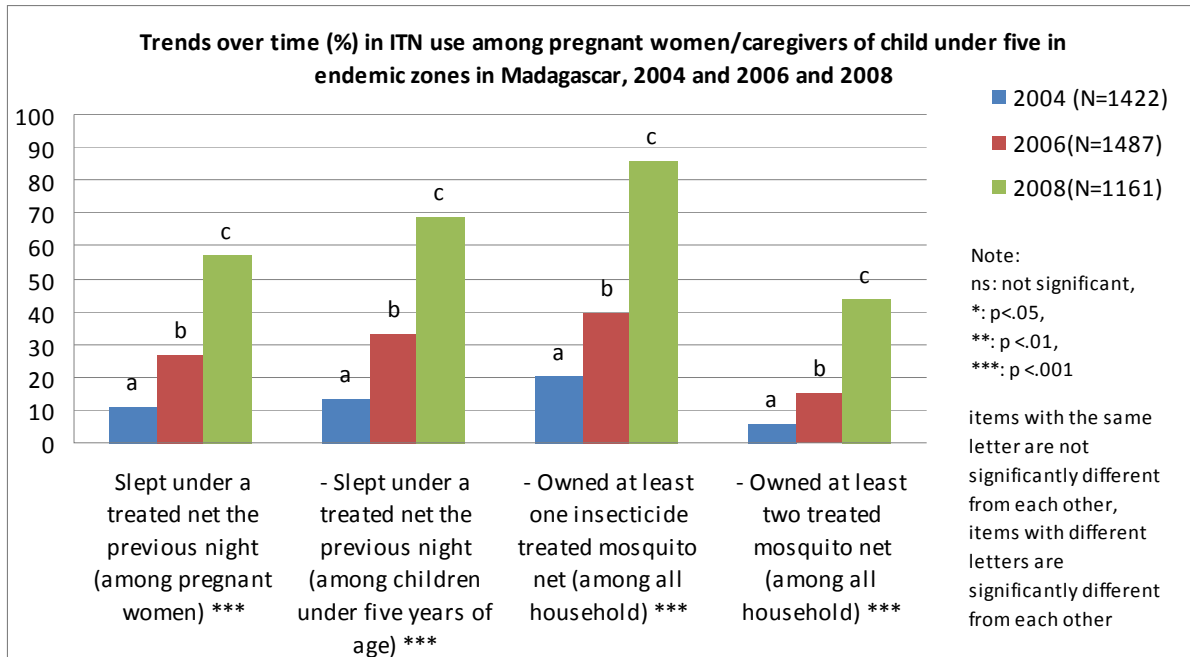
MARKET SHARE	%	%	%	
- Private sector	n/a	12.6b	2.3c	***
- Public Sector	n/a	26.2b	51.7c	***
- Social marketing	n/a	61.2b	46.0c	**

- ns: not significant, \*: p<.05, \*\*: p <.01, \*\*\*: p <.001
- Mean scores are measured on Likert scale responses, ranging from 1 (strongly disagree) to 4 (strongly agree)
- Knowledge mean scores on malaria prevention are based on an index of 3 items, which result in a theoretical mean score from 0 (completely incorrect) to 3 (completely correct)
- Knowledge mean scores regarding ITN use are based on an index of 4 items, which result in a theoretical mean score from 0 (completely incorrect) to 4 (completely correct)
- Willingness to Pay: maximum prices vary from 1000 to 50000 Ariary
- Brand attribute: weight vary from 1 to 3 points
- Population characteristics controlled for are age, marital status, socio-economic status, and level of education
- Some indicators have different sample sizes, which are available upon request
- Means or proportions with the same letter are not significantly different from one another, while those that have different letters are significantly different

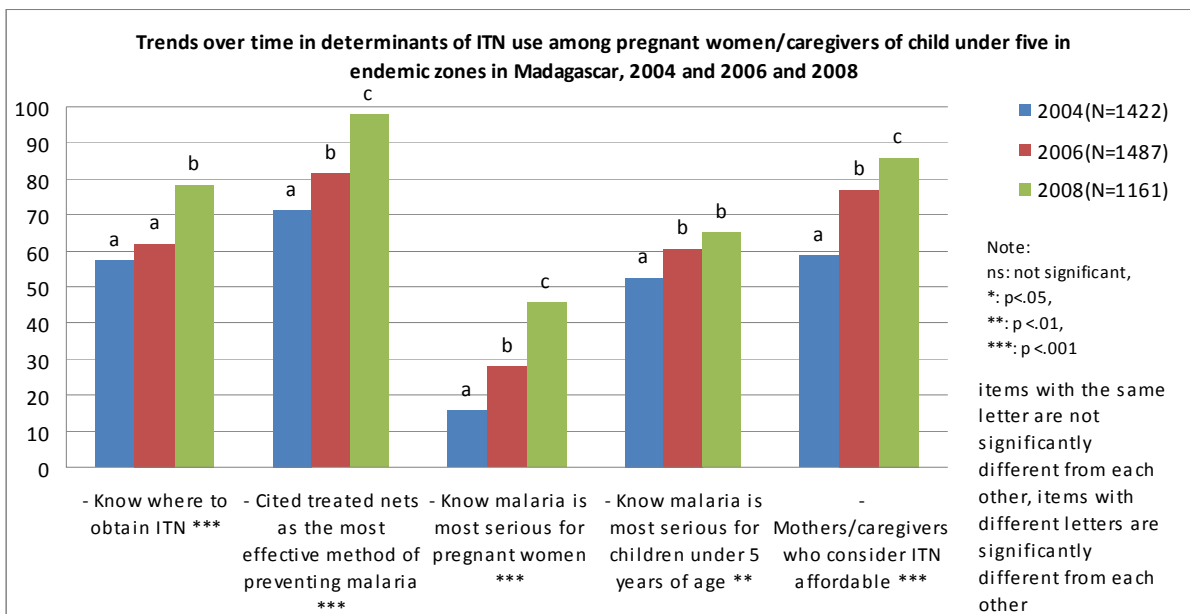


- <sup>1</sup> 2004 N=311, 2006 N=287, 2008 N=176
- <sup>2</sup> 2004 N=2258, 2006 N=2403, 2008 N=1601
- <sup>3</sup> 2008 N=6243
- <sup>4</sup> 2008 N=896
- <sup>5</sup> 2004 N=1017, 2004 N=1226, 2008 N=1098
- <sup>6</sup> 2004 N=781, 2006 N=917, 2008 N=925

Monitoring Graph 1.1: Behavior in National Level



Monitoring Graph 1.2: Indicators on Opportunity Ability Motivation in National Level



## Monitoring Table

**Trends and Levels of Indicators for Malaria Prevention: Percentages and Mean Scores For Behaviors, Behavioral Determinants, Exposure, and Source of Supply in Madagascar (2004 versus 2006 versus 2008)**

**Risk Group: 15 to 49 Year Old Pregnant Women and Mothers/Caregivers of Children under 5 Years of Age in Rural Areas in Madagascar**

**Behavior: Slept under a Treated Net Last Night**

INDICATORS	2004 (N=1176)	2006 (N=1246)	2008 (N=1045)	Sig.
<b>BEHAVIOR/USE</b>	%	%	%	
- Slept under a treated net the previous night (among pregnant women) <sup>1</sup>	8.8a	25.7b	56.1c	***
- Slept under a net the previous night (among pregnant women) <sup>1</sup>	48.2ab	43.9a	62.8b	ns
- Slept under a treated net the previous night (among pregnant women who live within less than 5 km of a CSB) <sup>2</sup>	n/a	n/a	62.3	
- Slept under a treated net the previous night (among pregnant women who live within more than 5 km of a CSB) <sup>3</sup>	n/a	n/a	50.0	
- Slept under a treated net the previous night (among children under five years of age) <sup>4</sup>	10.7a	31.3b	68.1c	***
- Slept under a net the previous night (among children under five years of age) <sup>4</sup>	48.3a	49.2a	73.5b	***
- Slept under a net the previous night (among children under five years of age who live within less than 5 km of a CSB) <sup>5</sup>	n/a	n/a	72.0	
- Slept under a net the previous night (among children under five years of age who live within more than 5 km of a CSB) <sup>6</sup>	n/a	n/a	63.9	
- Slept under treated net last night (among all family members) <sup>7</sup>	n/a	n/a	56.4	
- Slept under a net last night (among all family members) <sup>7</sup>	n/a	n/a	61.8	
- Owned at least one insecticide treated mosquito net (among all household)	16.8a	37.1b	85.1c	***
- Owned at least one untreated mosquito net or insecticide treated net (ITN) (among all household)	65.5a	57.3a	88.2b	***
- Owned at least two treated mosquito net (among all household)	4.2a	13.5b	41.6c	
- Owned at least one treated mosquito net (among household with pregnant women or children under five)	16.2a	38.7b	85.0c	***
- Received two doses of IPTp (among women who were pregnant during last 2 years) <sup>8</sup>	n/a	n/a	21.9	

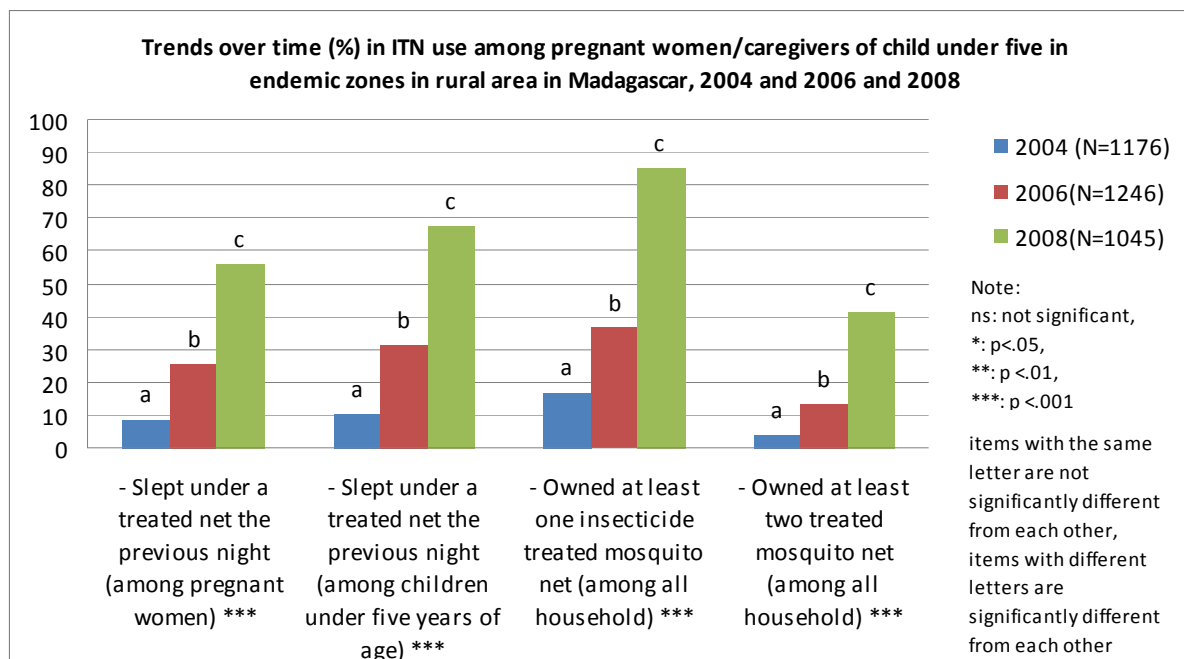
OPPORTUNITY	% or Mean Scores	% or Mean Scores	% or Mean Scores	
<b>Availability</b>				
- Know where to obtain ITN (among those who know ITN) <sup>9</sup>	54.7a	60.4a	77.6b	***
- Got ITN from community agent	n/a	4.5a	5.6a	ns
- Got ITN from private sector	n/a	42.5a	6.7b	***
- Got ITN from public sector	n/a	49.5a	88.4b	***
- Got ITN from other sector	n/a	4.9a	6.0a	ns
- Know to go to the CSB to receive 2 doses of IPTp	n/a	n/a	97.2	
Mean scores within grocers	n/a	n/a	2.47	
Mean scores within Health Center	n/a	n/a	2.48	
<b>Brand Attribute</b>				
- Preferred ITN branded Olyset				
Mean	n/a	n/a	0.4	
- Preferred ITN branded Permanet				
Mean	n/a	n/a	0.7	
- Preferred ITN branded Super moustiquaire				
Mean	n/a	n/a	1.7	
- Preferred ITN branded Tsaralay				
Mean	n/a	n/a	0.7	

<i>Social Norm</i>				
Mean	n/a	n/a	2.43	
<b>ABILITY</b>	% or Mean Scores	% or Mean Scores	% or Mean Scores	
<b>Knowledge</b>				
- Know malaria is transmitted only through mosquitoes	28.9a	34.9a	35.5a	ns
- Know that is necessary to get IPTp during pregnancy	n/a	n/a	98.2	
Mean scores on prevention	n/a	n/a	2.96	
Mean scores regarding ITN use	n/a	n/a	3.76	
<b>Social Support</b>				
- Think that neighbors support the practice of IPTp	n/a	n/a	86.7	
<b>MOTIVATION</b>	% or Mean Scores	% or Mean Scores	% or Mean Scores	
<b>Attitude</b>				
- Think that using ITN is healthy and safe	n/a	n/a	99.5	
<b>Belief</b>				
- Believed that ITN is used not only during rainy season	42.0a	57.7b	74.9c	***
- Believed that ITN does not have ill effects on health	58.2a	67.7ab	71.9b	*
Mean scores on negative effects	n/a	n/a	3.27	
Mean scores on periodicity	n/a	n/a	3.02	
Mean scores on cause of malaria	n/a	n/a	2.92	
<b>Outcome Expectation</b>				
- Cited treated nets as the most effective method of preventing malaria	67.8a	80.0b	98.2c	***
Mean				
<b>Threat</b>				
- Know malaria is most serious for pregnant women	13.4a	27.1b	45.2c	***
- Know malaria is most serious for children under 5 years of age	51.8a	60.2b	65.2b	**
Mean scores threat severity	n/a	n/a	2.73	
Mean scores threat susceptibility	n/a	n/a	2.86	
<b>Willingness to Pay</b>				
- Mothers/caregivers who consider ITN affordable (among those who heard of Super Moustiquaire) <sup>10</sup> 2004 N=576, 2006 N=740, 2008 N=2128	53.2a	75.1b	85.6c	***
Mean	5627.21a	6453.73b	6555.06b	*
<b>EXPOSURE</b>	%	%	%	
- Heard the slogan of SuperMoustiquaire	39.8a	51.0b	55.9b	**
- Heard radio spots on SuperMoustiquaire	30.4a	63.8b	48.9c	***
- Saw TV spots on Supermoustiquaire	9.9a	10.7a	9.3a	ns
- Heard program "Toky sy Antoka" on Supermoustiquaire	11.8a	31.3b	12.7a	***
- Attended mobile video unit sessions on SuperMoustiquaire	4.8a	8.1ab	12.2b	*
- Saw or got Behavior Change Communication materials on Supermoustiquaire	37.7a	49.9b	31.3a	***
- Attended or seen advices or messages on Super Moustiquaire from AVBC	n/a	n/a	22.4	
- Heard program "Aina sarobidy" on Supermoustiquaire	n/a	n/a	19.8	
- Heard or seen messages from stakeholders	n/a	n/a	82.0	
<b>MARKET SHARE</b>	%	%	%	
- Private sector	n/a	11.5a	2.6b	**
- Public Sector	n/a	30.4a	53.7b	**
- Social marketing	n/a	58.2a	43.7b	*
<b>OTHER INDICATORS</b>	%	%	%	
- lived within less than 5km of a CSB	n/a	n/a	60.4	

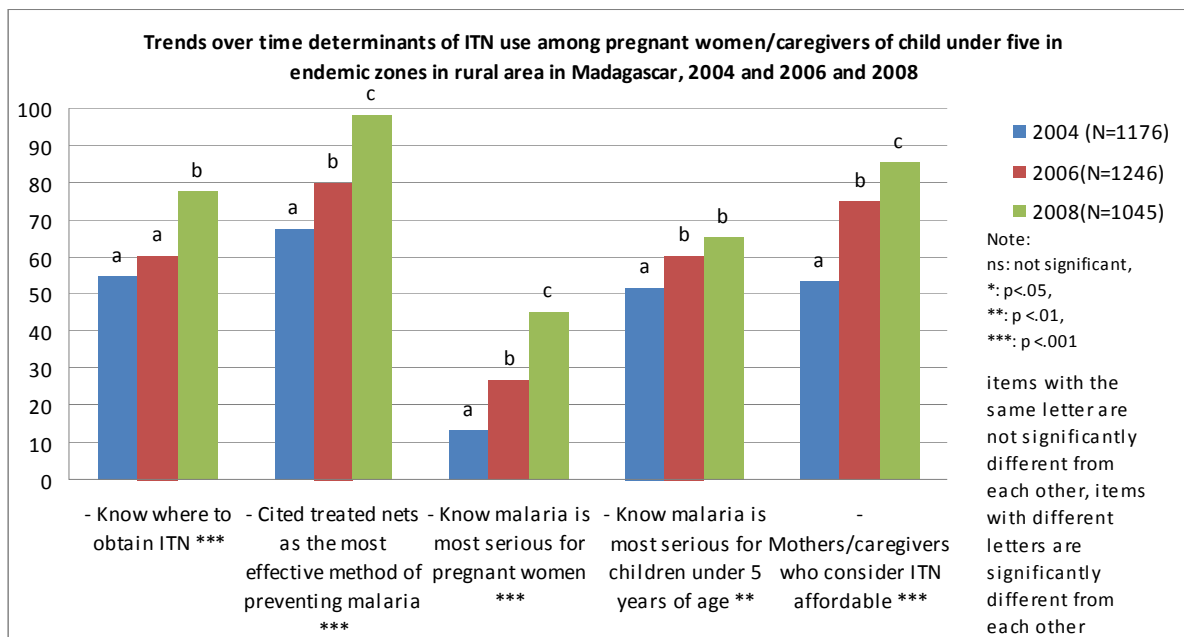
- ns: not significant, \*: p<.05, \*\*: p<.01, \*\*\*: p<.001

- Mean scores are measured on Likert scale responses, ranging from 1 (strongly disagree) to 4 (strongly agree)
- Knowledge mean scores on malaria prevention are based on an index of 3 items, which result in a theoretical mean score from 0 (completely incorrect) to 3 (completely correct)
- Knowledge mean scores regarding ITN use are based on an index of 4 items, which result in a theoretical mean score from 0 (completely incorrect) to 4 (completely correct)
- Willingness to Pay: maximum prices vary from 1000 to 50000 Ariary
- Brand attribute: weight vary from 1 to 3 points
- Population characteristics controlled for are age, marital status, socio-economic status, and level of education
- Some indicators have different sample sizes, which are available upon request
- Means or proportions with the same letter are not significantly different from one another, while those that have different letters are significantly different
- <sup>1</sup> 2004 N=262, 2006 N=243, 2008 N=158
- <sup>2</sup> 2008 N=90
- <sup>3</sup> 2008 N=68
- <sup>4</sup> 2004 N=1890, 2006 N=2020, 2008 N=1462
- <sup>5</sup> 2008 N=758
- <sup>6</sup> 2008 N=593
- <sup>7</sup> 2008 N=5634
- <sup>8</sup> 2008 N=807
- <sup>9</sup> 2004 N=795, 2006 N=1010, 2008 N=982
- <sup>10</sup> 2004 N=576, 2006 N=740, 2008 N=2128

Monitoring Graph 1.3: Behavior in Rural Area



Monitoring Graph 1.4: Indicators on Opportunity Ability Motivation in Rural Area



## Monitoring Table

## Trends and Levels of Indicators for Malaria Prevention: Percentages and Mean Scores For Behaviors, Behavioral Determinants, Exposure, and Source of Supply in Madagascar Nationally (2004 versus 2006 versus 2008)

## Risk Group: 15 to 49 Year Old Pregnant Women and Mothers/Caregivers of Children under 5 Years of Age in Urban Area in Madagascar

## Behavior: Slept under a Treated Net Last Night

INDICATORS	2004 (N=256)	2006 (N=241)	2008 (N=116)	Sig.
<b>BEHAVIOR/USE</b>	%	%	%	
- Slept under a treated net the previous night (among pregnant women) <sup>1</sup>	24.8a	31.0a	71.1b	***
- Slept under a net the previous night (among pregnant women) <sup>1</sup>	59.8a	56.6a	80.7b	**
- Slept under a treated net the previous night (among children under five years of age) <sup>2</sup>	25.6a	45.4b	78.8c	***
- Slept under a net the previous night (among children under five years of age) <sup>2</sup>	61.6a	61.7a	87.0b	***
- Slept under treated net last night (all family members) <sup>3</sup>	n/a	n/a	72.5	
- Slept under a net last night (all family members) <sup>3</sup>	n/a	n/a	79.7	
- Owned at least one insecticide treated mosquito net (among all household)	34.0a	54.3b	89.6c	***
- Owned at least one untreated mosquito net or insecticide treated net (ITN) (among all household)	79.3a	73.3a	94.2b	***
- Owned at least two treated mosquito net (among all household)	13.1a	24.0b	58.6c	***
- Owned at least one treated mosquito net (among household with pregnant women or children under five)	36.8a	57.1b	89.2c	***
- Received two doses of IPTp (among women who were pregnant during last 2 years) <sup>4</sup>	n/a	n/a	21.1	
<b>OPPORTUNITY</b>	% or Mean Scores	% or Mean Scores	% or Mean Scores	
<i>Availability</i>				
- Know where to obtain ITN (among those who know ITN) <sup>5</sup>	70.0a	71.2a	83.9b	***
- Got ITN from community agent	n/a	3.2a	2.8a	ns
- Got ITN from private sector	n/a	65.2a	4.6b	***
- Got ITN from public sector	n/a	31.7a	85.1b	***
- Got ITN from other sector	n/a	3.4a	14.7b	***
- Know to go to the CSB to receive 2 doses of IPTp	n/a	n/a	98.4	
Mean scores within grocers	n/a	n/a	2.59	
Mean scores within Health Center	n/a	n/a	2.55	
<i>Brand Attribute</i>				
- Preferred ITN branded Olyset				
Mean	n/a	n/a	0.14	
- Preferred ITN branded Permanet				
Mean	n/a	n/a	1.0	
- Preferred ITN branded Super moustiquaire				
Mean	n/a	n/a	2.43	
- Preferred ITN branded Tsaralay				
Mean	n/a	n/a	0.61	
<i>Social Norm</i>				
Mean	n/a	n/a	2.60	
<b>ABILITY</b>	% or Mean Scores	% or Mean Scores	% or Mean Scores	
<i>Knowledge</i>				
- Know malaria is transmitted only through mosquitoes	33.2a	35.5a	35.9a	ns
- Know that is necessary to get IPTp during pregnancy	n/a	n/a	98.9	
Mean scores on prevention	n/a	n/a	2.98	

Mean scores regarding ITN use	n/a	n/a	3.83	
<b>Social Support</b>				
- Think that neighbors support the practice of IPTp	n/a	n/a	89.2	

MOTIVATION	% or Mean Scores	% or Mean Scores	% or Mean Scores	
<b>Attitude</b>				
- Think that using ITN is healthy and safe	n/a	n/a	99.6	
<b>Belief</b>				
- Believed that ITN is used not only during rainy season	70.0ab	65.7b	74.8a	ns
- Believed that ITN does not have ill effects on health	76.5a	80.3a	80.7a	ns
Mean scores on negative effects	n/a	n/a	3.34	
Mean scores on periodicity	n/a	n/a	3.20	
Mean scores on cause of malaria	n/a	n/a	2.99	
<b>Outcome Expectation</b>				
- Cited treated nets as the most effective method of preventing malaria	89.4a	89.9a	94.2a	*
Mean	n/a	n/a	2.93	
<b>Threat</b>				
- Know malaria is most serious for pregnant women	27.9a	33.0a	49.5b	***
- Know malaria is most serious for children under 5 years of age	59.9a	62.7a	67.5a	ns
Mean scores threat severity	n/a	n/a	2.74	
Mean scores threat susceptibility	n/a	n/a	2.88	
<b>Willingness to Pay</b>				
- Mothers/caregivers who consider ITN affordable <sup>6</sup>	75.5a	84.5b	86.4b	*
Mean	6087.5a	7381.0b	7612.3b	*

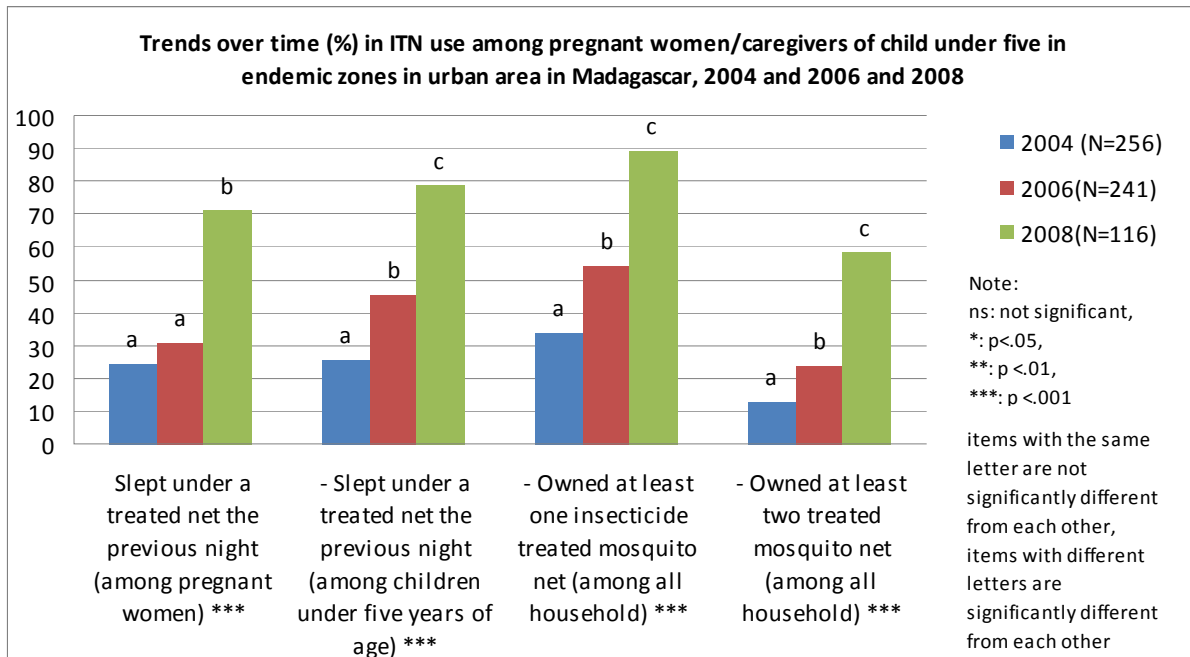
EXPOSURE	%	%	%	
- Heard the slogan of SuperMoustiquaire	76.6a	64.1b	81.5a	***
- Heard radio spots on SuperMoustiquaire	58.8a	75.6b	77.3b	*
- Saw TV spots on Supermoustiquaire	37.2a	18.0b	52.0c	***
- Heard program "Toky sy Antoka" on Supermoustiquaire	22.1a	41.4b	20.7a	***
- Attended mobile video unit sessions on SuperMoustiquaire	14.0a	18.6a	36.5b	***
- Saw or got Behavior Change Communication materials on Supermoustiquaire	75.2a	66.6a	52.7b	***
- Attended or seen advices or messages on Super Moustiquaire from AVBC	n/a	n/a	27.1	
- Heard program "Aina sarobidy" on Supermoustiquaire	n/a	n/a	20.7	
- Heard or seen messages from stakeholders	n/a	n/a	92.1	

MARKET SHARE	%	%	%	
- Private sector	n/a	15.3a	1.7b	***
- Public Sector	n/a	10.9a	36.0b	***
- Social marketing	n/a	73.8a	62.4b	*

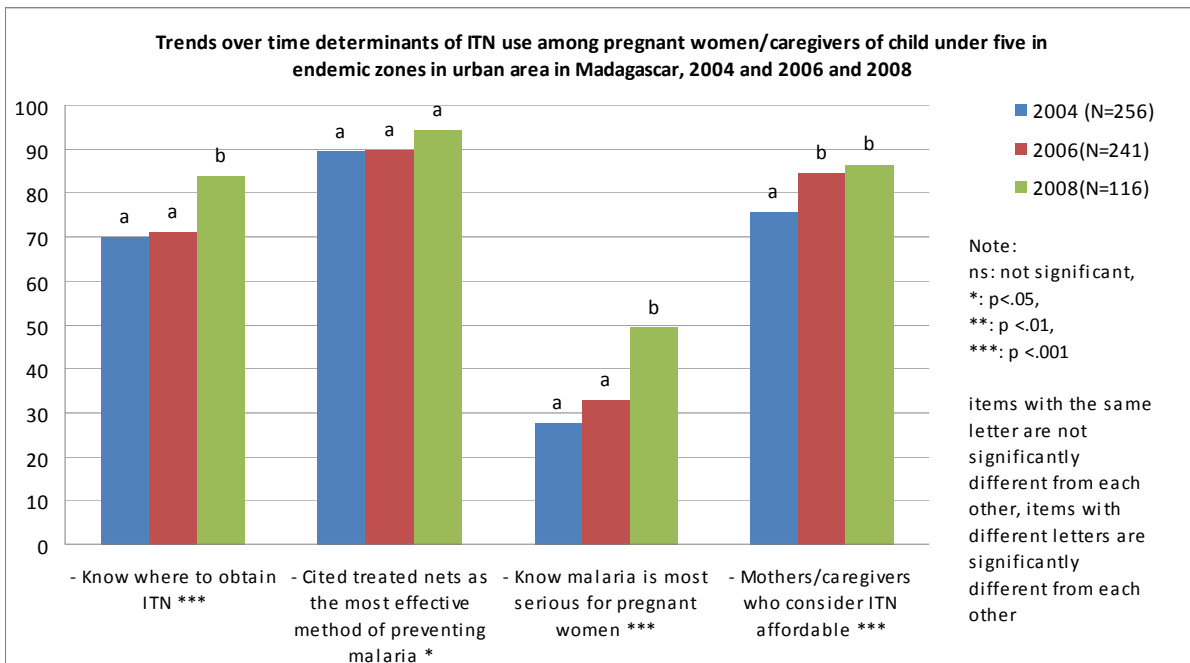
- ns: not significant, \*: p<.05, \*\*: p <.01, \*\*\*: p <.001
- Mean scores are measured on Likert scale responses, ranging from 1 (strongly disagree) to 4 (strongly agree)
- Knowledge mean scores on malaria prevention are based on an index of 3 items, which result in a theoretical mean score from 0 (completely incorrect) to 3 (completely correct)
- Knowledge mean scores regarding ITN use are based on an index of 4 items, which result in a theoretical mean score from 0 (completely incorrect) to 4 (completely correct)
- Willingness to Pay: maximum prices vary from 1000 to 50000 Ariary
- Brand attribute: maximum weight vary from 1 to 3 points
- Population characteristics controlled for are age, marital status, socio-economic status, and level of education
- Some indicators have different sample sizes, which are available upon request
- Means or proportions with the same letter are not significantly different from one another, while those that have different letters are significantly different
- <sup>1</sup> 2004 N=49, 2006 N=44, 2008 N=18
- <sup>2</sup> 2004 N=368, 2006 N=383, 2008 N=149
- <sup>3</sup> 2008 N=609
- <sup>4</sup> 2008 N=88
- <sup>5</sup> 2004 N=222, 2006 N=215, 2008 N=115
- <sup>6</sup> 2004 N=205, 2006 N=177, 2008 N=113



Monitoring Graph 1.5: Behavior in Urban Area



Monitoring Graph 1.6: Indicators on Opportunity Ability Motivation in Urban Area



Evaluation Table 1

Association between behavior and exposure to PSI program activities for Malaria Prevention in Madagascar Nationally (2008)

Risk Group: 15 to 49 Year Old Pregnant Women and Mothers/Caregivers of Children under 5 Years of Age in Madagascar Nationally

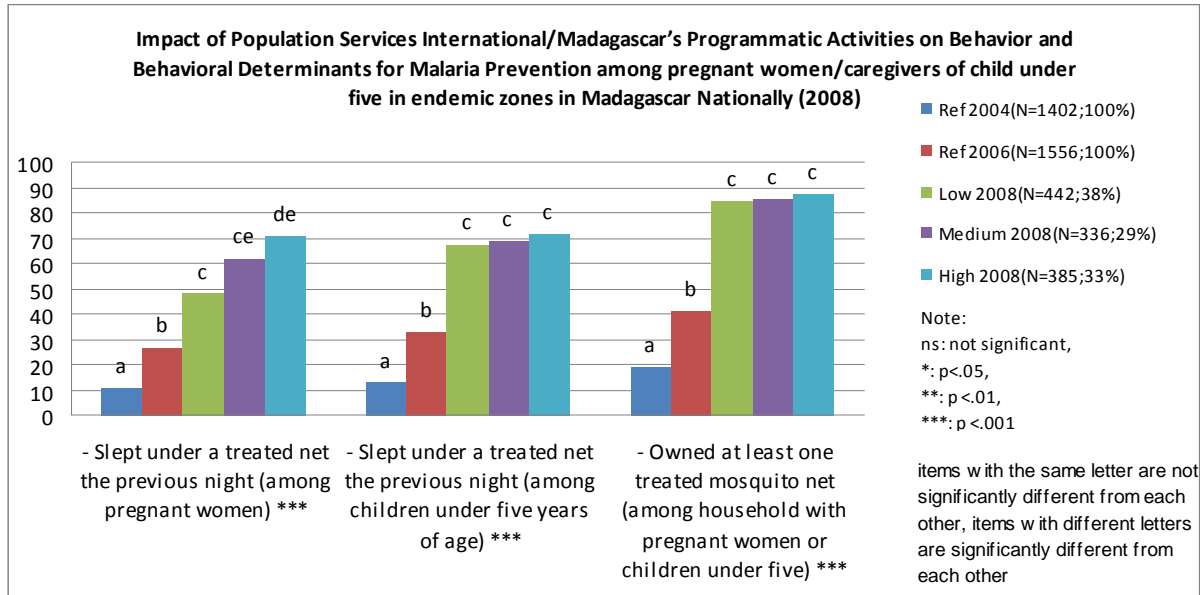
Behavior: Slept under a Treated Net Last Night

INDICATORS	Ref 2004 (N=1402) (100%)	Ref 2006 (N=1556) (100%)	EXPOSURE			Sig
			Low (N=442) (38.0%)	Medium (N=336) (28.9%)	High (N=385) (33.1%)	
<b>BEHAVIOR/USE</b>	%	%	%	%	%	
- Slept under a treated net the previous night (among pregnant women) <sup>1</sup>	10.7 <sup>a</sup>	26.7 <sup>b</sup>	48.3 <sup>c</sup>	61.8 <sup>ce</sup>	70.9 <sup>de</sup>	***
- Slept under a net the previous night (among pregnant women) <sup>1</sup>	50.0 <sup>a</sup>	44.3 <sup>a</sup>	51.2 <sup>ac</sup>	69.4 <sup>bce</sup>	83.3 <sup>bde</sup>	***
- Slept under a treated net the previous night (among children under five years of age) <sup>2</sup>	13.3 <sup>a</sup>	32.9 <sup>b</sup>	67.8 <sup>c</sup>	68.9 <sup>c</sup>	71.8 <sup>c</sup>	***
- Slept under a net the previous night (among children under five years of age) <sup>2</sup>	50.6 <sup>a</sup>	50.0 <sup>a</sup>	72.2 <sup>b</sup>	76.6 <sup>b</sup>	77.9 <sup>b</sup>	***
- Slept under treated net last night (among all family members) <sup>3</sup>	n/a	n/a	56.5 <sup>a</sup>	59.1 <sup>a</sup>	60.2 <sup>a</sup>	ns
- Slept under a net last night (among all family members) <sup>3</sup>	n/a	n/a	61.6 <sup>a</sup>	66.6 <sup>a</sup>	64.7 <sup>a</sup>	ns
- Owned at least one treated mosquito net (among household with pregnant women or children under five)	19.6 <sup>a</sup>	41.6 <sup>b</sup>	84.9 <sup>c</sup>	85.5 <sup>c</sup>	87.3 <sup>c</sup>	***
<b>OPPORTUNITY</b>	Mean Scores	Mean Scores	Mean Scores	Mean Scores	Mean Scores	
<i>Availability Within Grocers</i>	n/a	n/a	2.40 <sup>d</sup>	2.59 <sup>b</sup>	2.56 <sup>b</sup>	**
<i>Availability Within Health Center</i>	n/a	n/a	2.40 <sup>d</sup>	2.55 <sup>b</sup>	2.59 <sup>b</sup>	**
<i>Social Norm</i>	n/a	n/a	2.40 <sup>d</sup>	2.62 <sup>b</sup>	2.49 <sup>ab</sup>	*
<i>Product Attribute</i>	n/a	n/a	2.79 <sup>a</sup>	2.85 <sup>b</sup>	2.88 <sup>b</sup>	**
<b>ABILITY</b>	Mean Scores	Mean Scores	Mean Scores	Mean Scores	Mean Scores	
<i>Knowledge prevention</i>	n/a	n/a	2.90 <sup>a</sup>	2.96 <sup>ab</sup>	2.97 <sup>b</sup>	ns
<i>Knowledge Use Net</i>	n/a	n/a	3.76 <sup>a</sup>	3.81 <sup>a</sup>	3.80 <sup>a</sup>	ns
<b>MOTIVATION</b>	Mean Scores	Mean Scores	Mean Scores	Mean Scores	Mean Scores	
<i>Belief 1: Negative Effects about Sleeping Under an ITN</i>	n/a	n/a	3.20 <sup>a</sup>	3.11 <sup>a</sup>	3.17 <sup>a</sup>	ns
<i>Belief 2: Season of ITN Use</i>	n/a	n/a	2.98 <sup>a</sup>	3.05 <sup>a</sup>	3.12 <sup>a</sup>	ns
<i>Belief 3: Transmission Ways of Malaria</i>	n/a	n/a	1.92 <sup>a</sup>	1.83 <sup>a</sup>	1.65 <sup>b</sup>	**
<i>Threat Severity</i>	n/a	n/a	2.67 <sup>a</sup>	2.74 <sup>a</sup>	2.84 <sup>b</sup>	***
<i>Threat Susceptibility</i>	n/a	n/a	2.82 <sup>a</sup>	2.89 <sup>b</sup>	2.92 <sup>b</sup>	***
<i>Outcome Expectations</i>	n/a	n/a	2.86 <sup>a</sup>	2.92 <sup>b</sup>	2.94 <sup>b</sup>	**
<i>Willingness to Pay</i>	n/a	n/a	6060.3 <sup>a</sup>	7101.9 <sup>b</sup>	7646.7 <sup>b</sup>	**

- ns: not significant, \*: p <.05; \*\*: p <.01; \*\*\* p<.001
- Mean scores are measured on Likert scale responses, ranging from 1 (strongly disagree) to 4 (strongly agree)
- Knowledge on prevention mean scores are based on an index of 3 items, which result in a theoretical mean score from 0 (completely incorrect) to 3 (completely correct)
- Knowledge on net use mean scores are based on an index of 4 items, which result in a theoretical mean score from 0 (completely incorrect) to 4 (completely correct)
- Willingness to Pay: maximum prices vary from 1 000 to 50 000 Ariary
- Low exposure: 0 to 2 activities
- Medium exposure: 3 to 5 activities
- High exposure: more than 5 activities
- Means or proportions with the same letter are not significantly different from one another, while those that have different letters are significantly different.
- Population characteristics controlled for are age, marital status, socio-economic status, and education
- Some indicators have different sample sizes, which are available upon request
- <sup>1</sup> 2004 N=290, 2006 N=268, Low N=81, Medium N=52, High N=44

- <sup>2</sup> 2004 N=2160, 2006 N=2205, Low N=860, Medium N=340, High N=411  
 - <sup>3</sup> Low N=3238, Medium N=1363, High N=1642

Evaluation Graph 3.1



## Segmentation Table 2008 on Sleeping Under a Treated Net

## Behavioral Determinants of Malaria Prevention: Comparing Those who Slept under a Treated Net Last Night versus Those who did not in Madagascar Nationally (2008)

## Risk Group: 15 to 49 Year Old Pregnant Women and Mothers/Caregivers of Children under 5 Years of Age Owing at least one Treated Net in Madagascar Nationally

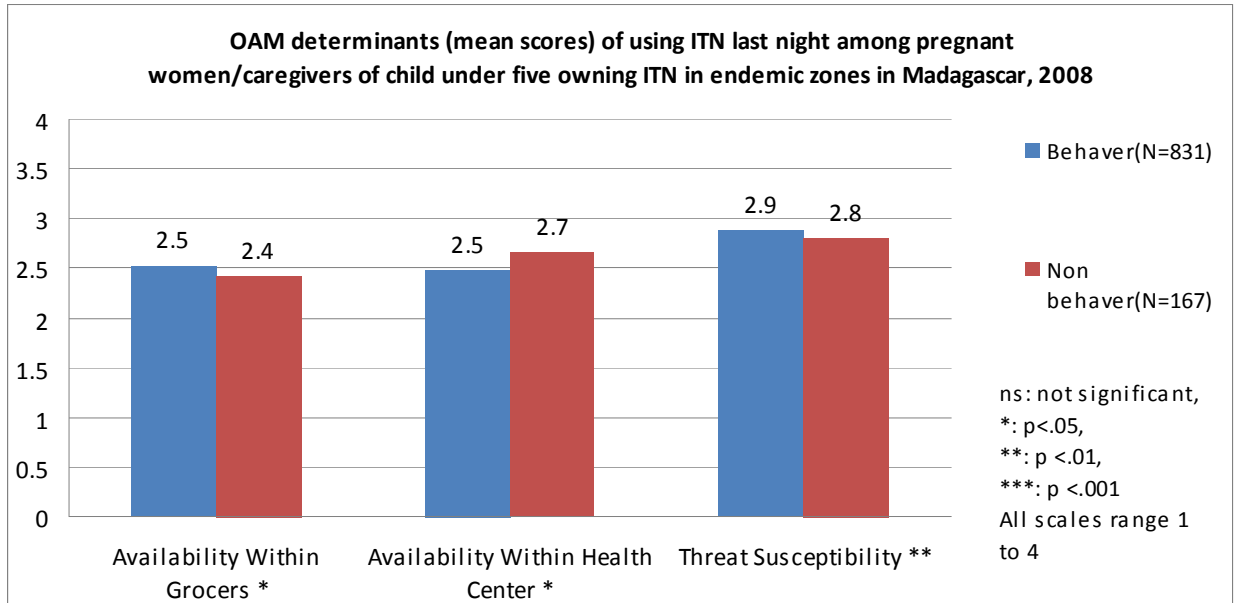
## Behavior: Slept under a Treated Net Last Night

INDICATORS	Behavior (N=831) (83.3%)	Non- Behavior (N=167) (16.7%)	OR	Sig
<b>OPPORTUNITY</b>	Mean Scores	Mean Scores		
<i>Availability Within Grocers</i>	2.53	2.42	1.53	*
<i>Availability Within Health Center</i>	2.48	2.66	0.53	*
<i>Social Norm</i>	---	---	---	ns
<b>MOTIVATION</b>	Mean Scores	Mean Scores		
<i>Belief 1: Negative Effects about Sleeping Under an ITN</i>	---	---	---	ns
<i>Belief 2: Season of ITN Use</i>	---	---	---	ns
<i>Belief 3: Transmission Ways of Malaria</i>	---	---	---	ns
<i>Threat Severity</i>	---	---	---	ns
<i>Threat Susceptibility</i>	2.88	2.80	3.33	**
<i>Outcome Expectations</i>	---	---	---	ns
<i>Paying for Net</i>	---	---	---	ns
<i>Willingness to Pay</i>	---	---	---	ns

POPULATION CHARACTERISTICS	% or Mean scores	% or Mean scores		
<i>Age</i> (15 to 49 years of age )	---	---	---	ns
<i>Level of Education</i> (Secondary and more versus Primary)	---	---	---	ns
<i>Marital Status</i> (Married versus Unmarried)	---	---	---	ns
<i>Socio-Economic Status</i> (High versus Low)	---	---	---	ns

- ns: not significant, \*p <.05; \*\*p <.01; \*\*\* p<.001
- Mean scores are measured on Likert scale responses, ranging from 1 (strongly disagree) to 4 (strongly agree)
- Knowledge on prevention mean scores are based on an index of 3 items, which result in a theoretical mean score from 0 (completely incorrect) to 3 (completely correct)
- Knowledge on net use mean scores are based on an index of 4 items, which result in a theoretical mean score from 0 (completely incorrect) to 4 (completely correct)
- Pseudo R<sup>2</sup>=4.9%
- OR= Odds Ratio
- “---“ Reliable Cronbach’s Alpha but not significant in the analysis
- High socio-economic status refers to quintile five of amenities and assets possession

Segmentation Graph 4.1: Slept under a Treated Net Last Night



## Segmentation Table 2008 on Owning a Treated Net

## Behavioral Determinants of Malaria Prevention: Comparing Those who Owned Treated Net versus Those who Did not in Madagascar Nationally (2008)

## Risk Group: 15 to 49 Year Old Pregnant Women and Mothers/Caregivers of Children under 5 Years of Age in Madagascar Nationally

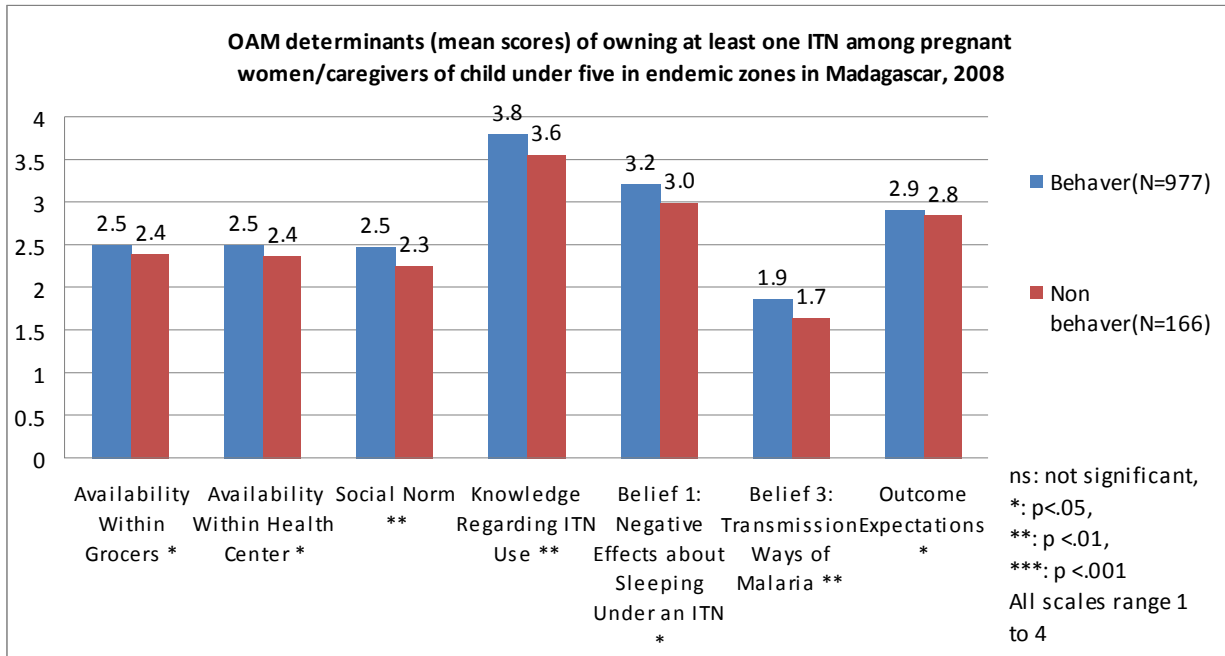
## Behavior: Owned at Least One Treated Mosquito Net

INDICATORS	Behavior (N=997) (85.7%)	Non- Behavior (N=166) (14.3%)	OR	Sig
<b>OPPORTUNITY</b>	Mean Scores	Mean Scores		
<i>Availability Within Grocers</i>	2.49	2.40	1.42	*
<i>Availability Within Health Center</i>	2.50	2.38	1.52	*
<i>Social Norm</i>	2.48	2.26	1.87	**
<i>Product Attributes</i>	---	---	---	ns
<b>ABILITY</b>	Mean Scores	Mean Scores		
<i>Knowledge on Malaria Prevention</i>	---	---	---	ns
<i>Knowledge Regarding ITN Use</i>	3.80	3.57	1.80	**
<b>MOTIVATION</b>	Mean Scores	Mean Scores		
<i>Belief 1: Negative Effects about Sleeping Under an ITN</i>	3.21	2.99	1.47	*
<i>Belief 2: Season of ITN Use</i>	---	---	---	ns
<i>Belief 3: Transmission Ways of Malaria</i>	1.86	1.65	1.60	**
<i>Threat Severity</i>	---	---	---	ns
<i>Threat Susceptibility</i>	---	---	---	ns
<i>Outcome Expectations</i>	2.91	2.84	2.40	*
<i>Willingness to Pay</i>	---	---	---	ns

POPULATION CHARACTERISTICS	% or Mean scores	% or Mean scores		
<i>Age</i> (15 to 49 years of age )	---	---	---	ns
<i>Level of Education</i> (Secondary and more versus Primary)	---	---	---	ns
<i>Marital Status</i> (Married versus Unmarried)	---	---	---	ns
<i>Socio-Economic Status</i> (High versus Low)	---	---	---	ns

- ns: not significant, \*p <.05; \*\*p <.01; \*\*\* p<.001
- Mean scores are measured on Likert scale responses, ranging from 1 (strongly disagree) to 4 (strongly agree)
- Knowledge on prevention mean scores are based on an index of 3 items, which result in a theoretical mean score from 0 (completely incorrect) to 3 (completely correct)
- Knowledge on net use mean scores are based on an index of 4 items, which result in a theoretical mean score from 0 (completely incorrect) to 4 (completely correct)
- Pseudo R<sup>2</sup>=14.9.0%
- OR= Odds Ratio
- “---“ Reliable Cronbach’s Alpha but not significant in the analysis
- High socio-economic status refers to quintile five of amenities and assets possession

Segmentation Graph 4.2: Owned at Least One Treated Mosquito Net



Summary table of program effect

The summary table combines the results from the monitoring and evaluation tables to aid in the interpretation of possible program effect. The monitoring column shows the direction of the indicator as observed on the monitoring table. The evaluation column shows the difference between follow-up not exposed and exposed, as shown in the Evaluation table.

BEHAVIOR : Sleeping under treated net last night	Change over time (Monitoring)	Association with program exposure (Evaluation)	Programmatic effect
<b>BEHAVIORS</b>	Trend	Trend	
- Slept under a treated net the previous night (among pregnant women)	Positive	Positive	Positive
- Slept under a net the previous night (among pregnant women)	ns	Positive	No impact
- Slept under a treated net the previous night (among children under five years of age)	Positive	Positive	Positive
- Slept under a net the previous night (among children under five years of age)	Positive	Positive	Positive
- Slept under treated net last night (among all family members)	n/a	ns	n/a
- Slept under a net last night (among all family members)	n/a	ns	n/a
- Owned at least one treated mosquito net (among household with pregnant women or children under five)	Positive	Positive	Positive



## Population Characteristics

<b>POPULATION CHARACTERISTICS</b>	<b>2008 N<sup>1</sup>=997</b>	<b>2008 N<sup>2</sup>=1163</b>
<b>Indicator</b>	<b>% or mean</b>	<b>% or mean</b>
<b>Age</b>		
Mean	28.25	28.36
<b>Highest Level of Education attained</b>		
Primary incomplete	78.1	79.0
Secondary	21.9	21.0
<b>Marital status</b>		
Not married	20.7	21.0
Married	79.3	79.0
<b>Socio economics status</b>		
Low	79.9	80.7
High	20.1	19.3

Behavior for N<sup>1</sup> is : Slept Under Insecticide Treated Net Last Night

Behavior for N<sup>2</sup> is : Owned at Least one Insecticide Treated Net

## Reliability Analysis

Composite Variables		2008	
		Cronbach's Alpha	
		(N=997)	(N=1163)
<b>OPPORTUNITY</b>		<b>Alpha1<sup>1</sup></b>	<b>Alpha2<sup>2</sup></b>
Availability within grocers ( <i>1: strongly disagree; 4: strongly agree</i> )		.902	.898
Q400	You know where to obtain Insecticide treated mosquito net		
Q401	Treated net is available at your usual grocers		
Q402	Treated net is available at the market		
Q403	Treated net is available at grocers		
Q404	Treated net is always available at grocers		
Availability within health center ( <i>1: strongly disagree; 4: strongly agree</i> ):		.765	.794
Q405	Treated net is distributed by the CSB		
Q406	Treated net is offered during vaccination		
Q407	Treated net is offered during prenatal visit		
Q408	Treated net is offered to pregnant women at the hospital after delivery		
<b>Product Attributes (<i>1: strongly disagree; 4: strongly agree</i>)</b>			
Q450	Treated net is large in size	n/r	.695
Q451	Treated net is easy to carry		
Q452	Treated net is easy to fix		
Q453	Treated net is lasting (do not get easily damaged)		
Q455	It is not possible for mosquitoes to go into a treated net		
Q456	Insecticide in treated net kills mosquitoes and other insects		
<b>Social Norms (<i>1: strongly disagree; 4: strongly agree</i>)</b>			
Q500	Most of people in your community use Super Moustiquaire	.899	.905
Q501	Women in your community sleep under treated net at night		
Q502	Children under 5 years old in your community sleep under treated net at night		
Q503	People in our community are used to sleeping under treated net		
Q504	People in our community enjoy using treated net		

<b>ABILITY</b>			
<b>Knowledge (0:Incorrect; 1:Correct)</b>		<b>Alpha1<sup>1</sup></b>	<b>Alpha2<sup>2</sup></b>
<i>Knowledge on malaria transmission</i>			
Q553	Malaria is caused by mosquito bites	n/r	n/r
Q554	Only mosquito bites at night provoke malaria		
Q555	Heat increases the number of mosquitoes ( <i>r</i> )		
Q556	A mosquito which has bitten a person who suffers from malaria transmits it to other people		
Q557	Malaria is transmitted to foetus		
Q558	Bush and stagnant water increase the number of mosquitoes		
Q559	During the day, mosquitoes remain hidden, they only come out at night to bite people		
Q560	Mosquito bites during the day provokes malaria		
Q561	Malaria is present throughout the year		
<i>Knowledge on malaria prevention</i>			
Q562	Treated net should be used throughout the year	n/r	.696
Q563	Pregnant women should sleep under treated net to prevent from malaria		
Q564	Children under 5 years old should sleep under treated net to prevent from malaria		
<i>Knowledge regarding ITN use</i>			
Q565	Treated net should only be washed every 3 months to keep its product against mosquitoes effective	.663	.721
Q566	Only ordinary soap should be used to wash Treated net		
Q567	Treated net should not be dried in sunlight		
Q568	Treated net should be hanged during 24 hours to make its smell disappear		

<b>MOTIVATION</b>			
<b>Threat Severity (1: strongly disagree; 4: strongly agree)</b>		<b>Alpha1<sup>1</sup></b>	<b>Alpha2<sup>2</sup></b>
Q651	Malaria provokes miscarriage	.890	.890
Q652	Malaria provokes premature birth		
Q653	Malaria provokes foetal death (stillbirth)		
Q654	Malaria provokes foetal abnormalities (children's physical handicap)		
Q655	Malaria provokes mental handicap		
Q656	Malaria provokes weakness in mothers		
Q657	Children who suffer from malaria can not grow up normally		
Q658	Children who suffer from malaria often get sick		
Q659	Children who suffer from malaria feel weak		
Q660	People who suffer from malaria cannot do their work		
Q661	Malaria provokes death		
Q662	Malaria provokes financial difficulty at home		
Q663	Malaria provokes death of many people		

<b>Threat susceptibility (1: strongly disagree; 4: strongly agree)</b>		<b>Alpha1<sup>1</sup></b>	<b>Alpha2<sup>2</sup></b>
Q700	Children are vulnerable to malaria because of their weakness	.851	.851
Q701	Pregnant mothers are vulnerable to malaria because of their weakness		
Q702	You may always suffer from malaria if you do not sleep under treated net		
Q703	Malaria is a dangerous disease		
Q704	My children are at risk of malaria if they do not sleep under treated net		
<b>Beliefs (1: strongly disagree; 4: strongly agree)</b>			
<i>Negative effects about sleeping under an ITN</i>			
Q750	Sleeping under treated net is too hot ( <i>r</i> )	.900	.839
Q751	Treated net provokes cough ( <i>r</i> )		
Q752	Treated net provokes frequent sneezing ( <i>r</i> )		
Q753	Treated net provokes suffocation ( <i>r</i> )		
Q754	Sleeping under treated net provokes nausea ( <i>r</i> )		
Q755	Sleeping under treated net provokes headache ( <i>r</i> )		
Q756	Sleeping under treated net is scratching ( <i>r</i> )		
Q757	Seeing someone sleeping under treated net reminds you of a dead body ( <i>r</i> )		
Q758	Insecticide in treated net is bad because it is too strong ( <i>r</i> )		
Q759	Children are sensible to the insecticide in treated net ( <i>r</i> )		
Q760	The smell of treated net is too strong ( <i>r</i> )		
Q761	Insecticide on insecticide treated mosquito net has some ill effects on health ( <i>r</i> )		
<i>Season of ITN use</i>			
Q762	It is necessary to only use insecticide treated mosquito net during rainy seasons ( <i>r</i> )	.754	.710
Q763	You only sleep under treated net when the weather is hot ( <i>r</i> )		
Q764	There is no malaria in winter ( <i>r</i> )		
Q765	Rain kill mosquito during rainy season ( <i>r</i> )		
Q766	Malaria is a seasonal disease ( <i>r</i> )		
<i>Transmission ways of malaria</i>			
Q767	Playing with stagnant water provokes malaria ( <i>r</i> )	.913	.705
Q768	Eating unripe fruit provokes malaria ( <i>r</i> )		
Q769	Eating clean food prevents from malaria ( <i>r</i> )		
Q770	The sun and too much heat provoke malaria ( <i>r</i> )		
Q771	Malaria is transmitted by touching malaria infected person ( <i>r</i> )		
Q772	Uncovered food and water contains mosquito larvae which provoke malaria ( <i>r</i> )		
Q773	Change in weather provokes malaria ( <i>r</i> )		
Q774	Food sensitivity provokes malaria ( <i>r</i> )		

## Annex2: Reliability Analysis

Madagascar, 2009

Q775	Malaria is transmitted from dirty dishes ( <i>r</i> )		
Q776	Malaria is transmitted from the air ( <i>r</i> )		
Q777	Instability (change) in body temperature provokes malaria ( <i>r</i> )		
<b>Outcome Expectations (1: strongly disagree; 4: strongly agree)</b>			
Q800	Sleeping under treated net brings a peaceful sleep	.864	.879
Q801	People's sleep is never disturbed under treated net		
Q802	Children won't suffer from malaria anymore if they sleep under treated net		
Q803	ITN prevents from mosquito bites		
Q804	Insecticide in ITN prevents from mosquito bites		
Q805	Insecticide in ITN kills mosquitoes		
Q806	Treated net gives a happy sleep		
Q807	Sleeping under Super Moustiquaire prevents from malaria		
Q808	Insecticide treated nets is the most effective method of preventing malaria		

Behavior for Alpha<sup>1</sup> is : Slept Under Insecticide Treated Net Last Night

Behavior for Alpha<sup>2</sup> is : Owned at Least one Insecticide Treated Net

(r): reverse coded