

26/01/2022

Intitulé	Analysis of preference-patient study
Domaine principal du sujet	Statistical methodology in pharmaceutical studies
Objectif du projet	Conduct data management, analysis and reporting of a study of patient/physician-preference.
Contexte et problématique	Preference studies are surveys targeting patients or physicians, about their ranked opinion on treatments, depending on hypothetical attributes. A specific framework is necessary to analyse this type of data.
Retombées attendues	Application on a case-study
Description	In healthcare, conjoint analysis methods, particularly discrete choice experiments (DCEs), or Best-Worst Scaling (BWS) have been increasingly used. Their aim is to quantify preferences and elicit responses that reveal preferences, priorities, and the relative importance of individual features associated with health care interventions or services. Specific models are used in this context as Max Diff model, conditional Logistic model or multinomial Logit Models... The aim of this internship is to conduct data management, analysis and reporting of study using a real-life data of patient/physician-preference. Software SAS/R will be used.
Intitulé	Constructing Experimental Designs for Discrete-Choice Experiments: How many choice sets and alternative are optimal?
Domaine principal du sujet	Discrete Choice Experiment
Objectif du projet	Provide guidelines for constructing Experimental Designs
Contexte et problématique	Recently there has been an increased interest in using choice experiment to elicit patient preferences between treatments or even more complex health interventions. One of the most challenging issues faced by researchers is defining the experimental design by selecting the optimal number of choice tasks in each survey. In fact, different parameters of the experimental design (as the potential implausible combinations, interaction effects, deviations from strict Orthogonality, Balance...) can impact the patient preference estimates.
Retombées attendues	Literature review for different method used to assess the optimal number of alternatives/choices set in the survey and to what extent it may affect respondents' preferences. Propose new statistical methods to address this problem using simulation study, and guidelines for constructing Experimental Designs.
Description	Recently there has been an increased interest in using choice experiment to elicit patient preferences between treatments or even more complex health interventions. One of the most challenging issues faced by researchers is defining the experimental design by selecting the optimal number of choice tasks in each survey. In fact, different parameters of the experimental design (as the potential implausible combinations, interaction effects, deviations from strict Orthogonality, Balance...) can impact the patient preference estimates. The aim of this work is to provide a literature review for different method used to assess the optimal number of alternatives/choices set in the survey and to what extent it may affect respondents' preferences, as well as to propose new statistical methods to address this problem using simulation

	study, and guidelines for constructing Experimental Designs. Software SAS/R will be used.
Intitulé	Methods of imputation for Quality of Life (QoL) in the context of post-hoc analyses
Domaine principal du sujet	Statistical methodology in pharmaceutical studies
Objectif du projet	Literature search for existing methods specific to QoL, then comparison of selected methods using existing data from clinical trials and simulations
Contexte et problématique	In the context of longitudinal clinical trials, where QoL questionnaires are answered at several timepoints, missing values can limit the validity of the statistical analyses. Several methods had been proposed to replace missing data with realistic values.
Retombées attendues	Improvement of the quality of the statistical evidence in QoL studies with a macro.
Description	In the context of longitudinal clinical trials, QoL questionnaires are completed at different visits with possibly several missing values which may limit the validity of statistical analyses. Several methods have been proposed to replace missing data with realistic values. For this purpose, a bibliographic search of existing methods specific to quality of life will be performed. A comparison of existing methods, using data from clinical trials and simulations, will be performed for standard quality assessments. The objective of the project will then be to improve the quality of statistical evidence in QoL studies with a macro that could handle missing data using the best method among those found in the literature.
Intitulé	Analyse de la variation de résultats de l'application d'un modèle de causal forest sur une étude observationnelle versus modèle de régression ajusté
Domaine principal du sujet	Méthodologie statistique
Objectif du projet	Réaliser une étude de la littérature des méthodes existantes et développer des recommandations à suivre suivant les différents cas de figures. Tester les hypothèses sur un jeu de données et développer les scripts SAS
Retombées attendues	Définir une démarche systématique à suivre pour optimiser la conduite des analyses
Description	De récentes publications statistiques émergent dans l'application de modèle de causal forest pour l'estimation de l'effet d'un traitement. Ces méthodes apparaissent comme particulièrement adaptées dans le contexte d'un jeu de données où l'on observe une asymétrie entre le nombre important de facteurs de confusion par rapport au nombre d'observations. Ce projet de stage consiste à réaliser la recherche bibliographique nécessaire puis à appliquer ce type de modèle et comparer les résultats avec les méthodes classiques.

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