## RESEARCH

# Dental caries in primary and permanent teeth in children's worldwide, 1995 to 2019: a systematic review and metaanalysis

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## Abstract

Background: Early childhood caries (ECC) is a type of dental caries in the teeth of infants and children that is represented as one of the most prevalent dental problems in this period. Various studies have reported different types of prevalence of dental caries in primary and permanent teeth in children worldwide. However, there has been no comprehensive study to summarize the results of these studies in general, so this study aimed to determine the prevalence of dental caries in primary and permanent teeth in children in different continents of the world during a systematic review and meta-analysis.

**Methods:** In this review study, articles were extracted by searching in the national and international databases of SID, MagIran, IranMedex, IranDoc, Cochrane, Embase, ScienceDirect, Scopus, PubMed, and Web of Science (ISI) between 1995 and December 2019. Random effects model was used for analysis and heterogeneity of studies was evaluated by using the  $l^2$  index. Data were analyzed by using the Comprehensive Meta-Analysis (Version 2) software.

Findings: In this study, a total of 164 articles (81 articles on the prevalence of dental caries in primary teeth and 83 articles on the prevalence of dental caries in permanent teeth) were entered the meta-analysis. The prevalence of dental caries in primary teeth in children in the world with a sample size of 80,405 was 46.2% (95% CI: 41.6-50.8%), and the prevalence of dental caries in permanent teeth in children in the world with a sample size of 1,454,871 was 53.8% (95% CI: 50–57.5%). Regarding the heterogeneity on the basis of meta-regression analysis, there was a significant difference in the prevalence of dental caries in primary and permanent teeth in children in different continents of the world. With increasing the sample size and the year of study, dental caries in primary teeth increased and in permanent teeth decreased.

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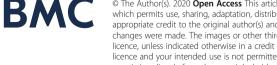
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**Conclusion:** The results of this study showed that the prevalence of primary and permanent dental caries in children in the world was found to be high. Therefore, appropriate strategies should be implemented to improve the aforementioned situation and to troubleshoot and monitor at all levels by providing feedback to hospitals.

Keywords: Caries, Tooth, Primary and permanent, Prevalence, Meta-analysis

## Background

Early childhood caries (ECC) is a type of dental caries in the teeth of infants and children that is represented as one of the most prevalent dental problems in this period [1] which can lead to pain, infection, interference with eating, increased risk of new dental caries in primary and permanent teeth, and, ultimately, worse effects on the eruption of permanent teeth [2]. These manifestations can range from demineralization to loss of tooth structure or complete destruction of the crown, a process of dynamic and active decay characterized by various periods of destruction and repair [3].

According to the American Academy of Dentistry, early childhood caries (ECC) is defined as "the presence of 1 or more decayed (non-cavitated or cavitated lesions), missing (due to caries), or filled tooth surfaces in any primary tooth" in children [1]. Overall, 50% of children have one or more decayed primary teeth by the end of toddler age, but the importance of these teeth should not be overlooked, because, as has been said, healthy teeth in childhood have an important role in the eruption of healthy permanent teeth, healthy nutrition, and one's aesthetic appearance [2, 3]. Factors such as malnutrition, genetic predisposition, poor health performance, specific eating habits, the presence of organisms affecting tooth decay such as streptococci, and fluoride and vitamin D deficiency, excessive sugar consumption and prolonged bottle-feeding, and other factors such as age, gender and place of residence of children are effective in causing tooth decay [4].

The World Health Organization (WHO) has represented the early childhood caries as a worldwide problem with a prevalence of between 60 and 90% [5]. According to the statistics provided by the European countries, 61% of children aged 6 to 12 years have at least one decayed tooth, and due to widespread dental caries in all social classes, this disease can impose a great financial burden on the society [6]. In Iran the mean decay-missing-filled (DMF) index of primary teeth in children aged 3 to 6 years was 1.7 and DMF index of permanent teeth was reported to be 0.2 in 6- to 9-yearold children, 0.9 to 1.5 in 12-year-old children, and 3.3 to 4.8 in 9-year-old children [7]. The decay-missingfilled (DMF) index is used as an appropriate measure for the detection of dental caries in the society in which 12year-old children are considered as a target group [8].

Primary teeth begin to erupt in infants' mouths at about 6 months of age, and are completed at age 3 to 5, including 10 teeth in the maxilla and 10 in the mandible to meet nutritional needs in infancy [6]. Since primary teeth are the basis of permanent teeth, on the one hand, and they have a high susceptibility to caries, on the other hand, these teeth are very important and maintaining their health is considered a serious health concern for children [3, 9].

Due to the influence of different factors on the prevalence of primary and permanent dental caries in children and lack of general statistics about this issue worldwide, we decided to review the studies in this area and to statistically analyze the results of these studies to compile a general statistics on the prevalence of dental caries in primary and permanent teeth in children in different continents of the world to open a window to more precise planning to reduce the complications of primary and permanent dental caries in children.

## Methods

In this systematic review and meta-analysis, the prevalence of dental caries in primary and permanent teeth in children was evaluated based on studies conducted between 1995 and December 2019. To this end, articles published in the national databases of SID, MagIran, IranMedex, and IranDoc, and in the international databases of Google scholar, Cochrane, Embase, ScienceDirect, Scopus, PubMed, and Web of Science (ISI) were searched by using Persian and English keywords such as Prevalence, Caries, Rampant caries, Milky tooth, Permanent tooth and Children.

## Selection of studies

Initially, all articles referring to the prevalence of dental caries in primary and permanent teeth in children in the world were collected by the researchers and accepted based on the inclusion and exclusion criteria. The inclusion criteria were observational (non-interventional) studies and their full text availability. For more information, the sources of the articles reviewed were also reviewed for access to other articles. Exclusion criteria included irrelevant cases, case reports, interventional studies and other review, casecontrol, cohort, duplication of studies, unclear methodology, and full text unavailability. In order to reduce bias, the articles were searched independently by two researchers, and if they disagreed on a study, the article was reviewed by the group supervisor (blinded about the decision by the first two independent researchers' decision). A total of 180 studies entered the third stage, quality assessment.

Duplicate publication and multiple publications from the same population will be removed using citation management, software EndNote (version X7, for Windows, Thomson Reuters).

## Quality assessment of studies

The quality of the articles was first evaluated on the basis of selected and related items of the 22- item STROBE checklist that could be evaluated in this study (study design, background and literature review, place and time of study, outcome, inclusion criteria, sample size, and statistical analysis) and also mentioned in the previous studies. Articles referring to 6 to 7 criteria were considered as high quality articles, articles that did not mention 2 items and more than 2 items from the seven items were considered as medium and low methodological quality articles, respectively [10]. In the present study, 164 articles with high quality and medium quality were entered the systematic review and meta-analysis, and 16 articles were of poor quality and were excluded.

## Data extraction

All final articles entered into the meta-analysis process were prepared to be extracted by a pre-prepared checklist. The checklist included article title, first author's name, year of publication, place of study, sample size, mean age of sample, prevalence of dental caries in primary and permanent teeth.

#### Statistical analysis

Since prevalence has binomial distribution, prevalence variance was calculated using the binomial distribution variance formula, and weighted mean was used to combine the prevalence rate of different studies. In order to evaluate the heterogeneity of the selected studies,  $I^2$  test was used (heterogeneity was divided into three classes of less than 25% (low heterogeneity), 25–75% (moderate heterogeneity) and more than 75% (high heterogeneity). Meta-regression analysis was used to investigate the relationship between the prevalence of dental caries with the sample size and the year of study. In order to evaluate the publication error with respect to the large sample size of

studies entered the review, the Begg and Mazumdar test at the significant level of 0.1 and its corresponding Funnel plot were used. Sensitivity analysis was used to evaluate the effect of individual studies on the final result. Data were analyzed by using the Comprehensive Meta-Analysis (Version 2) software.

#### Results

In this study, all studies conducted on the prevalence of primary and permanent dental caries in children in the world were systematically investigated without time limitation based on the PRISMA guidelines. In the initial search, 2870 articles were identified, form which 164 studies published between 1995 and December 2019 were eventually entered the final analysis (Fig. 1).

The total sample size for the prevalence of primary dental caries was 80,405 and for the prevalence of permanent dental caries was 1,454,871, given with the mean age of the subjects in each study. The specifications of the selected articles are presented in Tables 1 and 2.

## Heterogeneity and publication bias

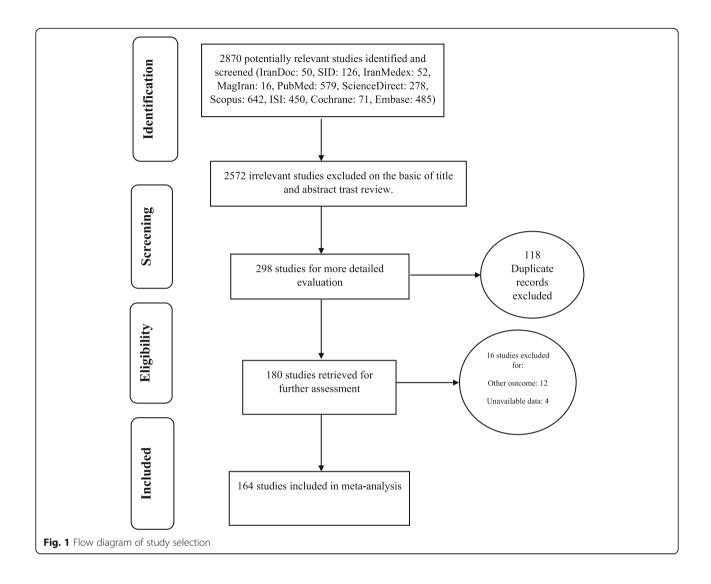
Based on the results of the heterogeneity evaluation test (I<sup>2</sup>), the prevalence of dental caries in primary and permanent teeth was reported to be I<sup>2</sup>: 99.2 and I2: 99.8, respectively. Due to the heterogeneity of the selected studies, a random effects model was used to combine the studies and jointly estimate the prevalence of dental caries in primary and permanent teeth. The probability of publication bias was evaluated by the Funnel plot and the Begg and Mazumdar tests at a significant level of 0.1 (Figs. 2 and 3), indicating that the publication bias was not statistically significant in the investigation of the prevalence of primary dental caries (P = 0.590) and permanent dental caries (P = 0.145).

## Meta-analysis (primary dental caries)

According to the results of the study in forest plot, the overall prevalence of dental caries in primary teeth in children in the world was 46.2% (95% CI: 41.6–50.8%) (Fig. 4). The middle point of each line shows the prevalence of primary dental caries in the world for each study, and the rhombic figure shows the prevalence of primary dental caries in the world for all studies.

## Meta-analysis (permanent dental caries)

According to the results of the study in forest plot, the overall prevalence of dental caries in permanent teeth in children in the world was 53.8% (95% CI: 50-57.5%) (Fig. 5). The middle point of each line



shows the prevalence of permanent dental caries in the world for each study, and the rhombic figure shows the prevalence of permanent dental caries in the world for all studies.

## Meta-regression

The prevalence of primary dental caries was evaluated by meta-regression analysis based on the year of study and the sample size, which reported that with increasing the year of study and the sample size, the prevalence of dental caries in primary teeth increased in both cases and the difference was statistically significant (P < 0.01) (Figs. 6 and 7).

The prevalence of permanent dental caries was evaluated based on the year of study and the sample size, which reported that with increasing the year of study and the sample size, the prevalence of dental caries in permanent teeth decreased in both cases and the difference was statistically significant (P < 0.01) (Figs. 8 and 9).

## Sub-group analysis

Also, Table 3 and Fig. 10 report the results of the prevalence of dental caries in primary and permanent teeth in children in different continents. These changes were reported in the continents of Asia, Europe, Africa, USA, and Australia, according to which 100 Asian studies (50 studies on the prevalence of dental caries in primary teeth and 50 studies on the prevalence of dental caries in permanent teeth), 32 European studies (10 studies on the prevalence of dental caries in primary teeth and 22 studies on the prevalence of dental caries in permanent teeth), 21 American studies (14 studies on the prevalence of dental caries in primary teeth and 7 studies on the prevalence of dental caries in permanent teeth), 10 African studies (5 studies on the prevalence of dental

| Author, year, Reference              | Age (years) | Country       | Sample size | Prevalence % | Quality |
|--------------------------------------|-------------|---------------|-------------|--------------|---------|
| Kalantari, 2014, [ <mark>1</mark> 1] | 6–7         | Iran          | 400         | 63.5         | High    |
| Abedini, 2013, [12]                  | 2–6         | Iran          | 310         | 48.7         | High    |
| Hematyar, 2009, [13]                 | 3–7         | Iran          | 200         | 63.5         | High    |
| Nabipour, 2013, [14]                 | 3–6         | Iran          | 838         | 71.8         | High    |
| Pahlavani, 2008, [15]                | 2–6         | Iran          | 414         | 61.6         | High    |
| Amiri, 2017, [ <mark>16</mark> ]     | 4–6         | Iran          | 359         | 87.7         | High    |
| Ajami, 2005, [17]                    | 6–7         | Iran          | 1938        | 76.5         | High    |
| Javadinezhad, 2008, [18]             | 40.5 Month  | Iran          | 100         | 77.0         | High    |
| Karimi, 2012, [19]                   | 2–5         | Iran          | 211         | 82.9         | High    |
| Amanlou, 2011, [20]                  | 3–6         | Iran          | 205         | 49.3         | High    |
| Toutouni, 2015, [21]                 | 2–3         | Iran          | 239         | 61.1         | High    |
| Bagherian, 2013, [22]                | 2–5         | Iran          | 400         | 51.3         | Medium  |
| Mohebbi, 2006, [23]                  | 1–3         | Iran          | 504         | 32.9         | High    |
| Ramos-Gomez, 1995, [24]              | <6          | USA           | 220         | 30.0         | High    |
| Rosenblatt, 2002, [25]               | 1–3         | USA           | 468         | 28.4         | High    |
| Rajab, 2001, [ <mark>26</mark> ]     | 1–5         | Jordan        | 384         | 47.9         | High    |
| Douglass, 1999, [27]                 | 3–4         | USA           | 517         | 37.9         | High    |
| Hallett, 1998, [28]                  | 4–6         | Australia     | 3375        | 37.6         | High    |
| Sayegh, 2002, [ <mark>29</mark> ]    | 4–5         | Jordan        | 1140        | 67.0         | Medium  |
| Hallett, 2003, [ <mark>30</mark> ]   | 4–5         | Australia     | 2474        | 37.6         | High    |
| Peressini, 2000, [31]                | 3–5         | Canada        | 87          | 19.5         | High    |
| Chadwick, 2005, [32]                 | 2–5         | UK            | 449         | 24.1         | High    |
| Schroth, 2015, [33]                  | <6          | Canada        | 408         | 53.7         | High    |
| Tsai, 1997, [ <mark>34</mark> ]      | <6          | Taiwan        | 951         | 55.9         | Medium  |
| Mahejabeen, 2006, [35]               | 3–5         | India         | 1500        | 54.1         | Medium  |
| Du, 2002, [ <mark>36</mark> ]        | 3–5         | China         | 2014        | 55.3         | High    |
| Ferro, 2005, [37]                    | 3–5         | Italy         | 4198        | 25.0         | High    |
| Schroth, 2004, [38]                  | 1–5         | USA           | 834         | 71.0         | Medium  |
| Wyne, 2008, [ <mark>3</mark> 9]      | 3–5         | Saludi Arabia | 789         | 74.8         | High    |
| Lawrence, 2004, [40]                 | 1–5         | Canada        | 1275        | 72.7         | High    |
| Vazquez-Nava, 2005, [41]             | 4–5         | Mexico        | 1160        | 17.9         | High    |
| Jigjid, 2005, [ <mark>42</mark> ]    | 1–5         | Japan         | 670         | 71.9         | High    |
| Senesombath, 2010, [43]              | 36–47 Month | Thailand      | 400         | 82.0         | Medium  |
| Slabsinskiene, 2003, [44]            | 3           | Lithuania     | 950         | 50.6         | High    |
| Zhou, 2010, [45]                     | 32 Month    | China         | 155         | 28.4         | High    |
| Rajshekar, 2005, [46]                | 1–6         | India         | 500         | 43.4         | Medium  |
| Ozer, 2011, [47]                     | 3–6         | Turkey        | 226         | 49.6         | High    |
| Li, 2011, [48]                       | 36–70 Month | China         | 1523        | 56.8         | High    |
| Kumarihamy, 2011, [49]               | 1–2         | Sri Lanka     | 410         | 32.2         | High    |
| Prakash, 2012, [50]                  | 8–48 Month  | India         | 1500        | 27.5         | Medium  |
| Singh, 2012, [51]                    | 36–60 Month | India         | 717         | 40.0         | High    |
| Perera, 2010, [52]                   | 24–71 Month | Sri Lanka     | 410         | 32.2         | Medium  |
| Phipps, 2011, [53]                   | 12–71 Month | India         | 8461        | 62.3         | High    |
| Parisotto, 2012, [54]                | 36–59 Month | Brazil        | 351         | 39.9         | High    |

 Table 1 Characteristic of included studies prevalence of tooth decay

| Author, year, Reference                   | Age (years) | Country                | Sample size | Prevalence % | Quality |
|---|-------------|------------------------|-------------|--------------|---------|
| Zhang, 2012, [55]                         | 5           | China                  | 723         | 84.9         | High    |
| Tanaka, 2007, [ <mark>56</mark> ]         | 3           | Japan                  | 2055        | 20.7         | Medium  |
| Colombo, 2019, [57]                       | 48–71 Month | Italy                  | 2522        | 38.0         | Medium  |
| Agouropoulos-1, 2019, [ <mark>58</mark> ] | <7          | USA                    | 175         | 92.6         | High    |
| Agouropoulos-2, 2019, [ <mark>58</mark> ] | <7          | USA                    | 175         | 53.7         | High    |
| Agouropoulos-3, 2019, [ <mark>58</mark> ] | <7          | USA                    | 175         | 36.0         | High    |
| Musinguzi, 2019, [59]                     | 3–5         | Kenya                  | 432         | 48.1         | High    |
| Montes, 2019, [60]                        | 5–7         | Brazil                 | 415         | 42.9         | Medium  |
| Boustedt, 2019, [61]                      | 5           | Sweden                 | 336         | 13.1         | High    |
| Tonpe-1, 2019, [62]                       | 3–5         | India                  | 358         | 2.8          | High    |
| Tonpe-2, 2019, [62]                       | 3–5         | India                  | 358         | 4.2          | High    |
| Wang, 2019, [ <mark>63</mark> ]           | 6           | China                  | 4936        | 87.7         | High    |
| Nomura, 2019, [ <mark>64</mark> ]         | 5–6         | Myanmar                | 187         | 81.3         | Medium  |
| Wu, 2019, [ <mark>65</mark> ]             | 5–6         | China                  | 1350        | 51.4         | High    |
| Abbass, 2019, [ <mark>66</mark> ]         | 5–6         | Egypt                  | 369         | 4.3          | Medium  |
| Goenka, 2018, [67]                        | 5–7         | India                  | 312         | 65.1         | High    |
| Chugh, 2018, [68]                         | 24–61 Month | India                  | 425         | 47.3         | High    |
| Vandana, 2018, [ <mark>69]</mark>         | 2–6         | India                  | 550         | 38.2         | High    |
| lgic, 2018, [70]                          | 3–6         | Serbia                 | 250         | 38.4         | High    |
| Kato, 2017, [71]                          | 3           | Japan                  | 6315        | 36.0         | High    |
| Li, 2017, [72]                            | 3–5         | China                  | 1727        | 78.2         | High    |
| Mangla, 2017, [73]                        | 1–3         | India                  | 510         | 21.0         | High    |
| Owen, 2017, [74]                          | 3–5         | Australia              | 623         | 14.1         | High    |
| Pal, 2017, [75]                           | 5–6         | India                  | 408         | 46.6         | High    |
| Wagne, 2017, [ <mark>76</mark> ]          | 6.7         | Germany                | 512         | 1.8          | High    |
| Shah, 2017, [77]                          | 5–7         | India                  | 829         | 33.2         | Medium  |
| Yuan, 2017, [ <mark>78</mark> ]           | 3           | China                  | 959         | 28.1         | High    |
| Jiang, 2017, [79]                         | 2–5         | China                  | 1509        | 71.4         | High    |
| Massignan, 2016, [80]                     | 3.7         | Brazil                 | 565         | 39.1         | High    |
| Koya, 2016, [ <mark>81</mark> ]           | 24–71 Month | India                  | 1897        | 42.0         | High    |
| Mothupi, 2016, [ <mark>82</mark> ]        | 4.8         | Africa                 | 495         | 48.9         | High    |
| Alkhtib, 2016, [ <mark>83</mark> ]        | 4–5         | Qatari                 | 250         | 89.2         | High    |
| Henry, 2016, [ <mark>84</mark> ]          | <3          | India                  | 1486        | 40.6         | High    |
| Šačić, 2016, [ <mark>85</mark> ]          | 3–5         | Bosnia and Herzegovina | 165         | 17.0         | Medium  |
| Al-Meedani, 2016, [ <mark>86</mark> ]     | 3–5         | Saludi Arabia          | 388         | 69.1         | High    |
| Elidrissi, 2016, [87]                     | 3–5         | Sudan                  | 553         | 52.4         | Medium  |
| Gopal, 2016, [88]                         | 3–6         | India                  | 477         | 27.3         | High    |

Table 1 Characteristic of included studies prevalence of tooth decay (Continued)

caries in primary teeth and 5 studies on the prevalence of dental caries in permanent teeth), and 4 Australian studies (3 studies on the prevalence of dental caries in primary teeth and 1 studies on the prevalence of dental caries in permanent teeth) were included in the metaanalysis. There was a significant difference in the

## prevalence of dental caries in primary and permanent teeth in different continents (Table 3 and Fig. 10).

## **Cumulative meta-analysis**

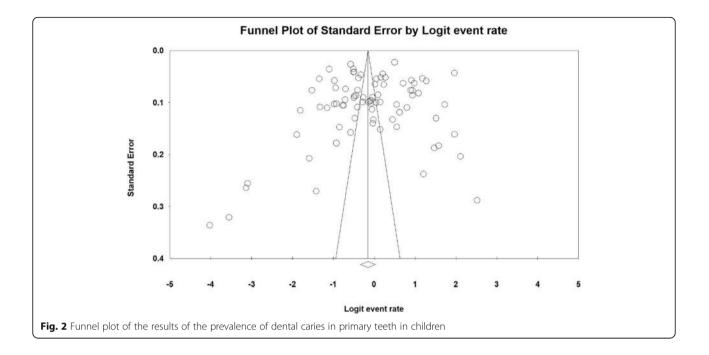
A cumulative meta-analysis of the included studies was performed based primary and permanent dental caries.

## Table 2 Characteristic of included studies Prevalence of permanent dental caries

| Author, year, Reference                 | Age (years) | Country              | Sample size | Prevalence % | Quality |
|---|-------------|----------------------|-------------|--------------|---------|
| Aghighi, 2010, [ <mark>89</mark> ]      | 6–15        | Iran                 | 4666        | 66.3         | High    |
| Mortazavi, 1997, [90]                   | 6–9         | Iran                 | 220         | 65.5         | High    |
| Asdagh, 2015, [91]                      | 6–12        | Iran                 | 847         | 79.7         | Medium  |
| Memar, 1999, [ <mark>92</mark> ]        | 12          | Iran                 | 439         | 84.3         | High    |
| Javadi nejad, 2006, [ <mark>93</mark> ] | 12          | Iran                 | 340         | 82.1         | High    |
| Sadeghi, 2007, [ <mark>94</mark> ]      | 12          | Iran                 | 563         | 68.6         | High    |
| Yousofi, 2015, [95]                     | 7–12        | Iran                 | 460         | 89.8         | High    |
| Eskandarizadeh, 2015, [96]              | 6–12        | Iran                 | 15,369      | 79.5         | High    |
| Mossaheb, 2011, [97]                    | 6-11        | Iran                 | 203         | 82.3         | High    |
| Qin, 2019, [ <mark>98</mark> ]          | 10–12       | China                | 5057        | 39.2         | High    |
| Alshehhi, 2019, [99]                    | 8.1         | United Arab Emirates | 62          | 58.1         | High    |
| Cheng, 2019, [100]                      | 10.3        | China                | 1,196,004   | 41.1         | High    |
| Villanueva-Gutiérrez, 2019, [101]       | 9           | Spain                | 686         | 35.4         | High    |
| Lešić, 2019, [ <mark>102</mark> ]       | 6–15        | Croatia              | 1589        | 50.0         | High    |
| Mohd Nor, 2019, [103]                   | 12          | Malaysia             | 595         | 74.3         | High    |
| Vanvitelli, 2019, [104]                 | 8–10        | Italy                | 530         | 29.1         | Medium  |
| Obregón-Rodríguez-1, 2019, [105]        | 12          | Spain                | 1045        | 25.5         | High    |
| Obregón-Rodríguez-2, 2019, [105]        | 15          | Spain                | 783         | 26.2         | High    |
| Mimoza, 2019, [106]                     | 7–10        | Italy                | 398         | 28.4         | Medium  |
| Abbass, 2019, [66]                      | 6-12        | Egypt                | 369         | 27.9         | High    |
| Aldossary, 2018, [107]                  | 6–9         | Saudi Arabia         | 1844        | 95.0         | High    |
| Goenka, 2018, [67]                      | 8-10        | India                | 353         | 56.7         | High    |
| Ballouk, 2019, [108]                    | 8-12        | Syria                | 1500        | 79.1         | High    |
| Alhabdan, 2018, [109]                   | 6–8         | Saudi Arabia         | 578         | 82.9         | High    |
| Konde, 2018, [110]                      | 12          | India                | 1000        | 13.6         | High    |
| Solis-Riggioni, 2018, [111]             | 8-15        | Costa Rica           | 201         | 35.8         | High    |
| Musa, 2018, [112]                       | 7-11        | China                | 24,521      | 32.4         | High    |
| Dutra, 2018, [113]                      | 8-12        | Brazil               | 1211        | 32.4         | High    |
| Al-Akwa, 2018, [114]                    | 6–12        | Yemen                | 17,599      | 67.6         | Medium  |
| Cruz, 2018, [115]                       | 11-12       | Brazil               | 184         | 34.2         | High    |
| Andegiorgish, 2017, [116]               | 12          | Eritrea              | 225         | 77.8         | High    |
| Alwayli, 2017, [117]                    | 6–9         | Saudi Arabia         | 17,891      | 64.6         | High    |
| Dobbiani-1, 2012, [118]                 | 10          | Italy                | 400         | 44.0         | Medium  |
| Dobbiani-2, 2013, [118]                 | 10          | Italy                | 400         | 18.5         | Medium  |
| Maran, 2017, [119]                      | 6–12        | India                | 1204        | 73.2         | High    |
| Shah, 2017, [77]                        | 12–15       | India                | 829         | 31.4         | High    |
| Kim, 2017, [120]                        | 6–11        | Korea                | 514         | 49.4         | High    |
| Sköld, 2016, [121]                      | 13          | Sweden               | 758         | 2.6          | High    |
| Plaka, 2017, [122]                      | 12–15       | India                | 193         | 36.3         | High    |
| Hiremath, 2016, [123]                   | 6–11        | India                | 13,200      | 78.9         | High    |
| Kottayi, 2016, [124]                    | 12–15       | India                | 2000        | 3.9          | Medium  |
| Ponnudurai, 2016, [125]                 | 6–14        | India                | 2796        | 68.8         | High    |
| Djossou, 2013, [126]                    | 6–15        | Benin                | 497         | 49.7         | High    |
| Weusmann, 2015, [127]                   | 8           | Germany              | 25,020      | 60.9         | High    |

## Table 2 Characteristic of included studies Prevalence of permanent dental caries (Continued)

| Author, year, Reference              | Age (years) | Country      | Sample size | Prevalence % | Quality |
|--------------------------------------|-------------|--------------|-------------|--------------|---------|
| Goel-1, 2015, [ <mark>128</mark> ]   | 12          | India        | 992         | 34.3         | Medium  |
| Goel-2, 2015, [128]                  | 15          | India        | 992         | 46.5         | High    |
| Farooqi, 2014, [ <mark>129</mark> ]  | 6–9         | Saudi Arabia | 711         | 73.0         | High    |
| Arora, 2014, [130]                   | 12          | India        | 100         | 57.0         | High    |
| Sukhabogi-1, 2014, [131]             | 12          | India        | 924         | 39.9         | Medium  |
| Sukhabogi-2, 2014, [131]             | 15-         | India        | 951         | 46.7         | Medium  |
| Al-Darwish, 2014, [132]              | 12-14       | Qatar        | 2113        | 85.0         | High    |
| Aidara, 2014, [133]                  | 12–15       | Senegal      | 677         | 96.0         | High    |
| Ingle, 2014, [134]                   | 12–15       | India        | 1400        | 53.0         | Medium  |
| Sofola, 2000, [135]                  | 6–12        | Nigeria      | 513         | 16.6         | High    |
| Das, 2013, [136]                     | 6–14        | West Bengal  | 1764        | 28.1         | High    |
| Mahfouz-1, 2013, [137]               | 12          | Palestine    | 677         | 40.6         | High    |
| Mahfouz-2, 2013, [137]               | 13          | Palestine    | 677         | 41.8         | High    |
| Mahfouz-3, 2013, [137]               | 14          | Palestine    | 677         | 60.4         | High    |
| Riziwaguli, 2013, [138]              | 7–9         | China        | 1600        | 26.5         | Medium  |
| Joshi, 2013, [ <mark>139</mark> ]    | 6–12        | India        | 1600        | 69.1         | Medium  |
| Pieper, 2009, [140]                  | 12          | Germany      | 30,943      | 72.7         | High    |
| Yengopal, 2012, [141]                | 10.5        | Africa       | 882         | 27.6         | High    |
| Murthy, 2014, [ <mark>142</mark> ]   | 12–15       | India        | 1452        | 57.9         | High    |
| Koposova, 2013, [143]                | 12          | Russia       | 590         | 68.0         | High    |
| Dixit, 2013, [144]                   | 12-13       | Nepal        | 361         | 41.0         | Medium  |
| Suprabha, 2013, [1 <mark>45</mark> ] | 11–13       | India        | 857         | 59.4         | High    |
| Panagidis, 2012, [146]               | 12          | Germany      | 951         | 32.6         | High    |
| Shailee-1, 2012, [147]               | 12          | India        | 1011        | 32.6         | Medium  |
| Shailee-2, 2012, [147]               | 15          | India        | 1011        | 42.2         | High    |
| Lagana, 2012, [148]                  | 7–15        | Albanian     | 2617        | 88.9         | Medium  |
| Subedi, 2011, [148]                  | 12–13       | Nepal        | 325         | 53.2         | Medium  |
| Shekar, 2011, [149]                  | 12–15       | India        | 474         | 56.3         | High    |
| Oulis-1, 2010, [150]                 | 12          | Greece       | 1224        | 80.0         | High    |
| Oulis-2, 2010, [150]                 | 15          | Greece       | 1257        | 83.0         | High    |
| Jamelli, 2010, [151]                 | 12          | Brazil       | 689         | 71.8         | High    |
| Kanagaratnam, 2009, [152]            | 9           | New Zealand  | 612         | 54.9         | High    |
| Bissar, 2008, [153]                  | 11-14       | Germany      | 570         | 42.3         | High    |
| Ferro, 2007, [154]                   | 12          | Italy        | 260         | 56.9         | High    |
| Moreira, 2006, [155]                 | 12–15       | Brazil       | 1665        | 50.9         | High    |
| Schulte, 2004, [156]                 | 12          | Germany      | 43,950      | 39.3         | High    |
| Paredes, 2005, [157]                 | 6–10        | Spain        | 600         | 47.2         | High    |
| Mestriner, 2005, [158]               | 12          | Brazil       | 256         | 53.9         | High    |
| Traebert, 2002, [159]                | 12          | Brazil       | 803         | 62.1         | High    |

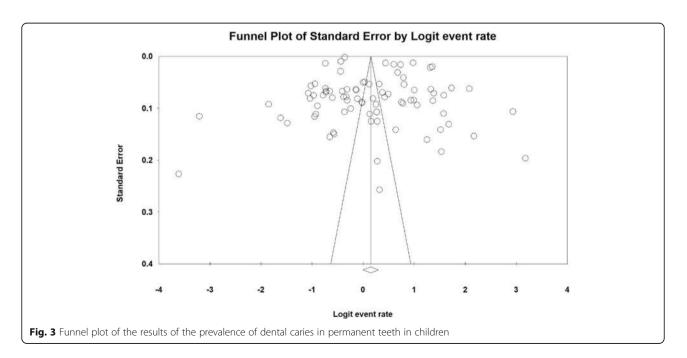


Cumulative risk of each study's addition to the metaanalysis are reported in Figs. 11 and 12.

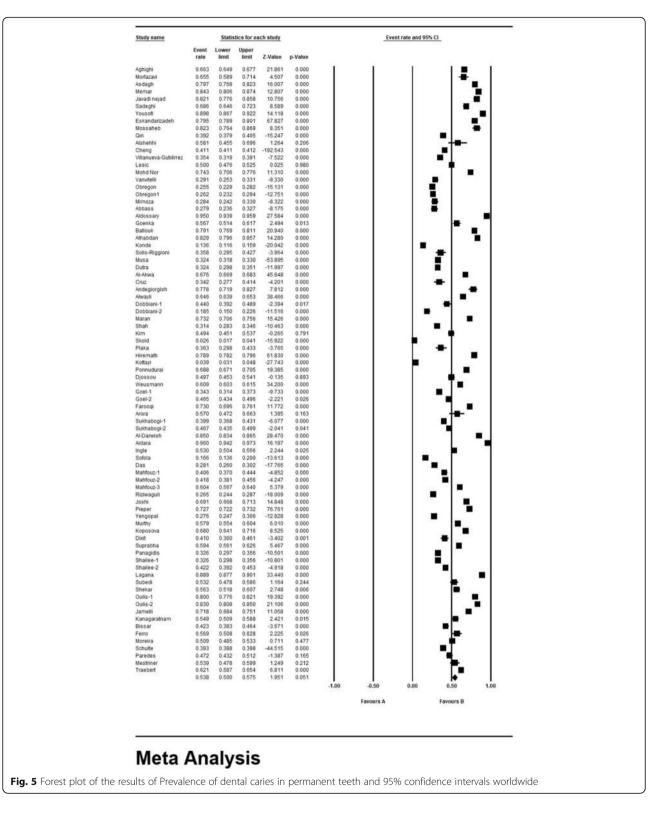
## Discussion

In this study, the prevalence of dental caries in studies conducted throughout the world was investigated, and it was reported that the overall prevalence of dental caries in primary teeth in children was 46.2%. Early childhood caries (ECC) in developing countries was reported to be more than in developed countries [1]. Also, in the present study, the overall prevalence of dental caries in permanent teeth in children was 53.8%.

Differences in the prevalence of dental caries in developed and underdeveloped countries may be due to differences in the age groups studied, but may also be due to ethnic, cultural, geographic, racial, and developmental differences as well as access to dental services, behavioral habits, health care behaviors,

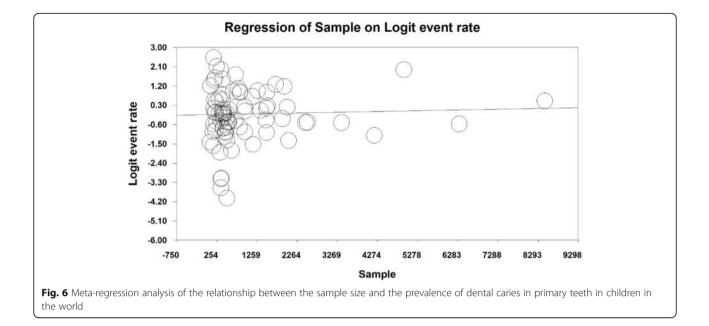


| edmi 0, 4477 0, 442 0, 543 0, 454 0, 050<br>bipour 0, 718 0, 667 0, 748 12, 133 0, 000<br>mim 0, 776 0, 748 0, 748 0, 2230 0, 000<br>mim 0, 776 0, 778 0, 748 2, 2447 0, 000<br>adomethad 0, 770 0, 778 0, 842 5, 058 0, 000<br>mim 0, 828 0, 773 0, 842 5, 058 0, 000<br>ariou 0, 448 0, 457 1, 3, 99 0, 001<br>ariou 0, 448 0, 457 0, 250 0, 011<br>phentam 0, 013 0, 444 0, 551 0, 030 0, 011<br>phentam 0, 014 0, 454 0, 552 0, 011 0, 000<br>ariou 0, 440 0, 452 0, 250 0, 011 0, 010<br>phentam 0, 015 0, 044 0, 552 0, 011 0, 000<br>ariou 0, 420 0, 024 0, 025 0, 011 0, 010<br>phentam 0, 015 0, 042 0, 027 1, 028 0, 000<br>senblat 0, 024 0, 025 0, 021 0, 041 0, 000<br>senblat 0, 015 0, 028 1, 025 0, 001 0, 041 4<br>uplass 0, 077 0, 038 0, 422 - 5442 0, 000<br>resim 0, 070 0, 042 0, 097 1, 1254 0, 000<br>resim 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resim 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resimat 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resimat 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resimat 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resimat 0, 015 0, 125 0, 028 - 10, 000<br>resimat 0, 015 0, 028 - 14, 216 0, 000<br>resimat 0, 017 0, 047 11, 125 0, 000<br>resimat 0, 018 0, 058 1, 144 0, 138<br>al 0, 059 0, 123 0, 028 - 14, 017<br>10 0, 028 0, 027 0, 028 1, 0481 0, 000<br>resimat 0, 018 0, 027 0, 027 11, 15, 0400<br>resimat 0, 018 0, 027 0, 027 11, 15, 0400<br>resimatamy 0, 025 0, 023 0, 038 0, 697<br>ro 0, 028 0, 037 0, 048 0, 030<br>resimatamy 0, 035 0, 043 0, 0384<br>resimatamy 0, 035 0, 043 0, 0384<br>resimatamy 0, 035 0, 043 0, 047 0, 0300<br>resimatamy 0, 035 0, 043 0, 047 0, 0300<br>resimatamy 0, 035 0, 043 0, 047 0, 0400<br>resimatamy 0, 035 0, 043 0, 047 0, 0400<br>resimatamy 0, 035 0, 043 0, 047 0, 0400<br>resimatamy 0, 035 0, 048 0, 171 0, 1700<br>resimatamy 0, 035 0, 048 0, 171 0, 0000<br>resimatamy 0, 035 0, 04  |                   |        |         |       |       |       |                        |
|---|-------------------|--------|---------|-------|-------|-------|------------------------|
| edmi 0, 4477 0, 442 0, 543 0, 454 0, 050<br>bipour 0, 718 0, 667 0, 748 12, 133 0, 000<br>mim 0, 776 0, 748 0, 748 0, 2230 0, 000<br>mim 0, 776 0, 778 0, 748 2, 2447 0, 000<br>adomethad 0, 770 0, 778 0, 842 5, 058 0, 000<br>mim 0, 828 0, 773 0, 842 5, 058 0, 000<br>ariou 0, 448 0, 457 1, 3, 99 0, 001<br>ariou 0, 448 0, 457 0, 250 0, 011<br>phentam 0, 013 0, 444 0, 551 0, 030 0, 011<br>phentam 0, 014 0, 454 0, 552 0, 011 0, 000<br>ariou 0, 440 0, 452 0, 250 0, 011 0, 010<br>phentam 0, 015 0, 044 0, 552 0, 011 0, 000<br>ariou 0, 420 0, 024 0, 025 0, 011 0, 010<br>phentam 0, 015 0, 042 0, 027 1, 028 0, 000<br>senblat 0, 024 0, 025 0, 021 0, 041 0, 000<br>senblat 0, 015 0, 028 1, 025 0, 001 0, 041 4<br>uplass 0, 077 0, 038 0, 422 - 5442 0, 000<br>resim 0, 070 0, 042 0, 097 1, 1254 0, 000<br>resim 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resim 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resimat 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resimat 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resimat 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resimat 0, 015 0, 125 0, 028 - 10, 000<br>resimat 0, 015 0, 028 - 14, 216 0, 000<br>resimat 0, 017 0, 047 11, 125 0, 000<br>resimat 0, 018 0, 058 1, 144 0, 138<br>al 0, 059 0, 123 0, 028 - 14, 017<br>10 0, 028 0, 027 0, 028 1, 0481 0, 000<br>resimat 0, 018 0, 027 0, 027 11, 15, 0400<br>resimat 0, 018 0, 027 0, 027 11, 15, 0400<br>resimatamy 0, 025 0, 023 0, 038 0, 697<br>ro 0, 028 0, 037 0, 048 0, 030<br>resimatamy 0, 035 0, 043 0, 0384<br>resimatamy 0, 035 0, 043 0, 0384<br>resimatamy 0, 035 0, 043 0, 047 0, 0300<br>resimatamy 0, 035 0, 043 0, 047 0, 0300<br>resimatamy 0, 035 0, 043 0, 047 0, 0400<br>resimatamy 0, 035 0, 043 0, 047 0, 0400<br>resimatamy 0, 035 0, 043 0, 047 0, 0400<br>resimatamy 0, 035 0, 048 0, 171 0, 1700<br>resimatamy 0, 035 0, 048 0, 171 0, 0000<br>resimatamy 0, 035 0, 04  |                   | -Value | Z-Value |       |       |       |                        |
| edmi 0, 4477 0, 442 0, 543 0, 454 0, 050<br>bipour 0, 718 0, 667 0, 748 12, 133 0, 000<br>mim 0, 776 0, 748 0, 748 0, 2230 0, 000<br>mim 0, 776 0, 778 0, 748 2, 2447 0, 000<br>adomethad 0, 770 0, 778 0, 842 5, 058 0, 000<br>mim 0, 828 0, 773 0, 842 5, 058 0, 000<br>ariou 0, 448 0, 457 1, 3, 99 0, 001<br>ariou 0, 448 0, 457 0, 250 0, 011<br>phentam 0, 013 0, 444 0, 551 0, 030 0, 011<br>phentam 0, 014 0, 454 0, 552 0, 011 0, 000<br>ariou 0, 440 0, 452 0, 250 0, 011 0, 010<br>phentam 0, 015 0, 044 0, 552 0, 011 0, 000<br>ariou 0, 420 0, 024 0, 025 0, 011 0, 010<br>phentam 0, 015 0, 042 0, 027 1, 028 0, 000<br>senblat 0, 024 0, 025 0, 021 0, 041 0, 000<br>senblat 0, 015 0, 028 1, 025 0, 001 0, 041 4<br>uplass 0, 077 0, 038 0, 422 - 5442 0, 000<br>resim 0, 070 0, 042 0, 097 1, 1254 0, 000<br>resim 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resim 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resimat 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resimat 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resimat 0, 015 0, 125 0, 028 - 14, 216 0, 000<br>resimat 0, 015 0, 125 0, 028 - 10, 000<br>resimat 0, 015 0, 028 - 14, 216 0, 000<br>resimat 0, 017 0, 047 11, 125 0, 000<br>resimat 0, 018 0, 058 1, 144 0, 138<br>al 0, 059 0, 123 0, 028 - 14, 017<br>10 0, 028 0, 027 0, 028 1, 0481 0, 000<br>resimat 0, 018 0, 027 0, 027 11, 15, 0400<br>resimat 0, 018 0, 027 0, 027 11, 15, 0400<br>resimatamy 0, 025 0, 023 0, 038 0, 697<br>ro 0, 028 0, 037 0, 048 0, 030<br>resimatamy 0, 035 0, 043 0, 0384<br>resimatamy 0, 035 0, 043 0, 0384<br>resimatamy 0, 035 0, 043 0, 047 0, 0300<br>resimatamy 0, 035 0, 043 0, 047 0, 0300<br>resimatamy 0, 035 0, 043 0, 047 0, 0400<br>resimatamy 0, 035 0, 043 0, 047 0, 0400<br>resimatamy 0, 035 0, 043 0, 047 0, 0400<br>resimatamy 0, 035 0, 048 0, 171 0, 1700<br>resimatamy 0, 035 0, 048 0, 171 0, 0000<br>resimatamy 0, 035 0, 04  | 1 1 1=            | 0.000  | 5 332   | 0.681 | 0.587 | 0.635 | Kalantari              |
| bipour<br>hanyami 0.771 0.687 0.748 12.193 0.000<br>wi 0.077 0.839 0.908 12.230 0.000<br>mim 0.776 0.778 0.842 5.085 0.000<br>mim 0.770 0.778 0.842 5.085 0.000<br>manbardu 0.493 0.425 0.501 -0.210 0.834<br>ducuni 0.611 0.548 0.511 0.834<br>ducuni 0.513 0.444 0.511 0.329 0.001<br>pheniam 0.513 0.444 0.511 0.329 0.001<br>pheniam 0.513 0.444 0.527 -0.510 0.000<br>mas-Gorme 0.300 0.243 0.344 -7.796 0.000<br>mas-Gorme 0.300 0.243 0.342 -7.540 0.000<br>mas-Gorme 0.300 0.243 0.342 -7.540 0.000<br>mas-Gorme 0.300 0.243 0.342 -7.540 0.000<br>mas-Gorme 0.300 0.243 0.342 -7.4425 0.000<br>high 0.770 0.642 0.529 -0.413 0.000<br>high 0.770 0.642 0.556 1.415 0.000<br>high 0.770 0.573 0.399 0.001<br>ro 0.250 0.277 0.725 0.551 0.000<br>ro 0.250 0.51 0.510 0.400<br>high 0.779 0.642 0.202 1.9873 0.000<br>ro 0.250 0.277 0.751 1.554 0.000<br>high 0.779 0.645 0.596 0.310 0.001<br>ro 0.250 0.277 0.751 1.554 0.000<br>high 0.779 0.645 0.596 0.310 0.001<br>ro 0.250 0.475 0.53 0.310 0.997<br>ru 0.264 0.276 0.373 0.399 0.001<br>re 0.448 0.311 0.500 0.133 0.894<br>i d.0779 0.645 0.593 0.530 0.000<br>ru 0.244 0.216 0.300 0.5714<br>ru 0.450 0.475 0.538 0.399 0.000<br>ru 0.244 0.216 0.300 0.5714<br>ru 0.450 0.477 0.538 0.399 0.000<br>ru 0.244 0.216 0.300 0.5714<br>ru 0.450 0.477 0.528 0.390 0.597<br>ru 0.20 0.22 0.278 0.399 7.746 0.000<br>high 0.779 0.855 1.1951 0.000<br>high 0.779 0.850 0.777 0.442<br>0.780 0.779 0.72 0.720 0.421<br>0.790 0.441 0.471 0.632 0.000<br>ru 0.244 0.210 0.77 0.442 0.360<br>ru 0.244 0.450 0.477 0.446 0.300<br>ru 0.244 0.450 0.477 0.446 0.300<br>ru 0.444 0.451 0.372 0.230<br>ru 0.444 0.451 0.372 0.230<br>ru 0.444 0.453 0.000<br>ru 0.444 0.451 0.474 0.000<br>ru 0.444 0.444 0.340 0.000<br>ru 0.444 0.444 0.340 0.000<br>ru 0.444 0.444 0.340 0.000<br>ru 0.444 0.444 0.340 0.000<br>ru 0.444 0.444 0.344 0.0000<br>ru 0.444 0.444 0.344 0.0000<br>ru  | ∔⁻                |        |         |       |       |       | Abedini                |
| hiayani 0.316 0.273 0.303 7.289 0.000<br>mi 0.075 0.74 0.74 2.247 0.000<br>asahesha 0.775 0.77 0.678 0.2247 0.000<br>mi 0.0220 0.77 0.678 0.2247 0.000<br>mi 0.0220 0.77 0.678 0.2247 0.000<br>mi 0.0220 0.273 0.874 8.440 0.000<br>mi 0.011 0.548 0.671 3.399 0.001<br>pherian 0.511 0.444 0.571 3.399 0.001<br>pherian 0.511 0.444 0.529 0.814 0.000<br>senblat 0.284 0.285 0.327 -7.502 0.000<br>senblat 0.284 0.285 0.327 -0.916 0.0414<br>uglass 0.379 0.330 0.422 -4.425 0.000<br>resim 0.617 0.575 0.292 0.510 0.000<br>senblat 0.270 0.282 0.222 -10.410 0.000<br>resim 0.577 0.488 0.585 1.444 0.138<br>admick 0.217 0.250 0.222 -10.413 0.000<br>resim 0.577 0.488 0.585 1.444 0.138<br>admick 0.217 0.277 1.1254 0.000<br>resima 0.577 0.488 0.585 1.444 0.138<br>admick 0.217 0.277 0.125 0.000<br>resima 0.577 0.488 0.585 1.484 0.138<br>admick 0.217 0.277 0.172 0.303 0.000<br>resima 0.578 0.488 0.585 1.444 0.138<br>admick 0.217 0.777 0.172 1.5254 0.000<br>resima 0.590 0.528 0.327 0.203 0.000<br>resima 0.590 0.528 0.530 0.000<br>refer 0.250 0.277 0.573 0.578 0.000<br>refer 0.250 0.277 0.572 0.540 0.000<br>refer 0.250 0.277 0.528 0.358 0.000<br>refer 0.250 0.277 0.528 0.380 0.000<br>refer 0.250 0.475 0.551 0.550 0.000<br>refer 0.250 0.475 0.551 0.550 0.000<br>refer 0.250 0.475 0.551 0.550 0.000<br>refer 0.488 0.310 0.59 0.597<br>0.000 0.284 0.218 0.309 0.514<br>refer 0.488 0.310 0.59 0.513 0.380<br>refer 0.480 0.411 0.590 0.513 0.380<br>refer 0.480 0.411 0.590 0.513 0.380<br>refer 0.428 0.218 0.399 -7.546 0.000<br>refer 0.480 0.451 0.550 0.531 0.380 0.000<br>refer 0.428 0.250 0.770 0.422 0.000<br>refer 0.428 0.251 0.414 0.000<br>refer 0.428 0.250 0.770 0.422 0.000<br>refer 0.428 0.251 0.414 0.400<br>refer 0.448 0.451 0.590 0.771 0.422<br>refer 0.448 0.451 0.590 0.770 0.422<br>refer 0.448 0.451 0.590 0.770 0.422<br>refer 0.448 0.451 0.590 0.770 0.422<br>refer 0.448 0.441 0.451 0.000<br>refer 0.448 0.451 0.551 0.1145 0.000<br>refer 0.454 0.427 0.421 0.425 0.444 0.343<br>refer 0.448 0.454 0.322 0.000<br>refer 0.454 0.447 0.454 0.433 0.000<br>refer 0.454 0.447 0.554 1.1145 0.000<br>refe |                   |        |         |       |       |       | Hematyar               |
| mim 0, 077 0, 078 0, 090 0, 12,230 0,000<br>adonehad 0,770 0,78 0, 042 5,085 0,000<br>annu 0,220 0,773 0,842 5,085 0,000<br>annu 0,022 0,773 0,74 2,244 0,000<br>annu 0,023 0,220 0,751 0,232 7,500 0,017<br>hebbl 0,230 0,220 2,200 0,277 0,500 0,017<br>hebbl 0,230 0,220 2,20 0,220 0,000<br>mos-Gorme 0,300 0,243 0,342 5,459 0,000<br>aba 0,479 0,330 0,322 1,4255 0,000<br>mos-Gorme 0,370 0,380 0,322 1,4255 0,000<br>hebbl 0,327 0,330 0,322 1,4255 0,000<br>hebbl 0,327 0,335 0,325 0,355 0,000<br>hebbl 0,327 0,335 0,328 0,000<br>hebbl 0,327 0,335 0,328 0,000<br>hebbl 0,328 0,591 1,356 0,000<br>hebbl 0,779 0,452 0,237 0,23 -3,0383 0,697<br>hebble 0,431 0,59 0,531 0,593 1,584 0,000<br>hebbls 0,779 0,518 0,500 0,033<br>Hebble 0,500 0,779 0,551 1,544 0,000<br>hebslssine 0,500 0,779 0,530 0,519 0,507<br>hebslssine 0,500 0,779 0,58 0,109<br>hebslssine 0,500 0,779 0,530 0,519 0,500<br>hebslssine 0,500 0,779 0,530 0,590<br>hebslssine 0,500 0,717 0,530 0,500<br>hebslssine 0,500 0,717 0,523 0,200<br>hebslssine 0,500 0,513 0,500 0,531<br>hebsls 0,500 0,513 0,571 0,000<br>hebslssine 0,500 0,513 0,500 0,531 0,500<br>hebslssine 0,500 0,513 0,500 0,531 0,500<br>hebsls 0,500 0,513 0,530 0,500<br>hebsls 0,500 0,513 0,530 0,500<br>hebsls 0,500 0,513 0,530 0,500<br>hebsls 0,500 0,511 0,514 0,520 0,500<br>hebsls 0,500 0,511 0,514 0,520 0,570 0,442<br>hebsl 0,510 0,500 0,514 0,514 0,520 0,500<br>hebsls 0,500 0,514 0,477 0,541 0,520 0,500<br>hebsls 0,500 0,514 0,477 0,521 0,516 0,500<br>hebsls 0,500 0,514 0,477 0,521 0,516 0,500<br>hebsls 0,500 0,500 0,500<br>hebsls 0,500 0,5  | 1 1 - 1 '         |        |         |       |       |       | Nabipour               |
| mi         0.766         0.744         0.744         0.000           mmi         0.629         0.73         0.874         8.440         0.000           mmi         0.629         0.73         0.874         8.440         0.000           denin         0.611         0.541         0.551         0.210         0.834           denin         0.611         0.540         0.671         3.399         0.001           phebin         0.230         0.240         0.322         7.502         0.000           sendur         0.244         0.259         0.616         0.000           sendur         0.330         0.422         3.27         4.442         0.000           sendur         0.330         0.422         1.041         0.000           resimin         0.157         0.330         0.422         0.001           resimin         0.157         0.232         1.041         0.338           admic         0.557         0.510         0.001           resimin         0.179         0.583         0.380         0.001           resimin         0.179         0.581         0.580         0.001           resimin         0.179   | 1 1 = 1           |        |         |       |       |       | Pahlavani<br>Amiri     |
| adnehad<br>imi 0,0770 0,078 0,074 8,640 0,000<br>aniou 0,483 0,625 0,561 0,210 0,834<br>docum 0,611 0,544 0,561 0,500 0,617<br>phetan 0,513 0,444 0,561 0,500 0,617<br>phetan 0,513 0,444 0,561 0,500 0,617<br>mebcb 0,329 0,290 0,322 - 50,816 0,414<br>uglass 0,379 0,330 0,229 - 0,816 0,414<br>uglass 0,379 0,330 0,229 - 1,4255 0,000<br>iet 0,376 0,360 0,392 - 1,4255 0,000<br>iet 0,376 0,360 0,392 - 1,4255 0,000<br>iet 0,376 0,357 0,396 - 1,2213 0,000<br>iet 0,376 0,322 0,322 - 10,413 0,000<br>iet 0,550 0,252 0,591 3,656 0,000<br>iet 0,553 0,480 0,392 - 14,255 0,000<br>moch 0,573 0,480 1,777 1,225 0,000<br>moch 0,573 0,480 1,777 1,225 0,000<br>more 0,777 0,702 0,751 1,554 0,000<br>more 0,777 0,702 0,751 1,554 0,000<br>more 0,778 0,702 0,751 1,554 0,000<br>iet 0,050 0,237 0,308 0,697<br>ou 0,253 0,231 0,575 0,388 0,494<br>more 0,778 0,710 0,555 1,651 0,000<br>iet 0,050 0,237 0,308 - 16,777 0,000<br>jd 0,719 0,554 0,508 0,389 0,697<br>ou 0,252 0,237 0,308 - 7,044 0,000<br>iet 0,454 0,217 0,538 0,389 0,697<br>ou 0,253 0,530 0,576 0,388 0,398 0,697<br>ou 0,253 0,530 0,576 0,388 0,398 0,697<br>ou 0,253 0,530 0,576 0,528 0,000<br>merons 0,777 0,702 0,751 1,554 0,000<br>isoles 0,300 0,719 0,555 0,268 0,000<br>isoles 0,300 0,349 0,451 - 3,733 0,000<br>isoles 0,320 0,779 0,338 2,388 0,000<br>markamy 0,568 0,573 0,389 0,497<br>0,568 0,543 0,598 - 7,646 0,000<br>isoles 0,309 0,349 0,451 - 3,733 0,000<br>isoles 0,309 0,349 0,451 - 3,733 0,000<br>isoles 0,320 0,779 0,528 - 2,468 0,000<br>isoles 0,339 0,349 0,451 - 3,733 0,000<br>isoles 0,330 0,382 0,477 - 5,248 0,000<br>isoles 0,330 0,382 0,477 - 5,248 0,000<br>isoles 0,330 0,382 0,477 - 5,248 0,000<br>isoles 0,330 0,348 0,451 - 3,733 0,000<br>isoles 0,340 0,252 0,477 - 1,518 0,000<br>isoles 0,340 0,252 0,477 - 1,518 0,000<br>isoles 0,340 0,252 0,477 - 1,518 0,000<br>isoles 0,330 0,358 0,477 - 5,248 0,000<br>isoles 0,340 0,252 0,477 - 1,518 0,000<br>isoles 0,340 0,252 0,448 - 3,533 0,000<br>isoles 0,340 0,252 0,448 - 3,533 0,00  | 1 1 1             |        |         |       |       |       | Ajami                  |
| aniou 0.483 0.425 0.561 0.210 0.834<br>down 0.513 0.444 0.571 0.200 0.617<br>nebeb 0.328 0.290 0.200 0.577 0.329 0.001<br>mos-Gomez 0.300 0.243 0.344 4.5759 0.000<br>jab 0.479 0.303 0.229 0.816 0.414<br>ujabas 0.379 0.330 0.229 0.816 0.414<br>ujabas 0.379 0.357 0.295 1.2233 0.000<br>ies simi 0.195 0.125 0.222 0.22 0.413 0.000<br>ies simi 0.195 0.125 0.222 0.22 0.413 0.000<br>ies simi 0.195 0.125 0.222 0.524 0.000<br>ies simi 0.195 0.157 0.395 1.2233 0.000<br>ies simi 0.195 0.157 0.375 0.758 0.000<br>irom 0.537 0.488 0.268 1.484 0.338<br>advick 0.241 0.203 0.259 1.3656 0.000<br>ing al 0.057 0.574 0.799 0.000<br>ing al 0.156 0.277 0.757 0.758 0.000<br>ing al 0.179 0.581 0.275 0.396 0.000<br>ing al 0.179 0.581 0.275 0.000<br>ing al 0.179 0.581 0.274 0.778 0.000<br>ing al 0.179 0.158 0.272 0.1887 0.000<br>ing al 0.179 0.158 0.272 0.1887 0.000<br>ing 0.277 0.702 0.158 0.302 0.000<br>ing 0.277 0.702 0.175 1.5584 0.000<br>ing 0.281 0.231 0.238 0.308 0.907<br>ro 0.226 0.237 0.283 0.398 0.907<br>ro 0.228 0.237 0.283 0.398 0.907<br>ro 0.228 0.237 0.286 0.473 0.000<br>ing 0.441 0.391 0.538 0.390 0.997<br>ro 0.228 0.278 0.389 0.514 0.000<br>ing 0.568 0.431 0.509 0.473 0.000<br>ing 0.284 0.237 0.286 0.473 0.000<br>ing 0.284 0.237 0.286 0.473 0.202 0.4987<br>ro 0.426 0.237 0.286 0.473 0.000<br>ing 0.446 0.431 0.509 0.473 0.000<br>ing 0.568 0.437 0.598 0.528 0.000<br>ing 0.568 0.437 0.598 0.528 0.000<br>ing 0.56 0.477 0.285 0.477 0.206 0.513<br>0.000<br>ing 0.440 0.328 0.328 0.477 0.238 0.000<br>ing 0.440 0.451 0.478 0.248 0.000<br>ing 0.440 0.451 0.478 0.248 0.000<br>ing 0.441 0.451 0.451 0.451 0.000<br>ing 0.441 0.451 0.454 0.451 0.454 0.000<br>ing 0.441 0.451 0.454 0.451 0.454 0.000<br>ing 0.441 0.451 0.454 0.454 0.000<br>ing 0.441 0.451 0.454 0.454 0.000<br>ing 0.441 0.451 0.454 0.454 0.000  | 1 1 1             |        |         |       |       |       | Javadinezhad           |
| doumi 0611 0548 0.671 3.392 0.001<br>phebin 0320 0240 0.372 -7502 0.000<br>senblat 0240 0245 0.327 -7502 0.000<br>senblat 0240 0246 0.257 -0.014 0.000<br>senblat 0240 0245 0.327 -0.014 0.000<br>regh 0.677 0.428 0.392 -1.425 0.000<br>regh 0.677 0.428 0.392 -1.425 0.000<br>regh 0.677 0.428 0.392 -1.425 0.000<br>ressimi 0.155 0.250 0.286 -1.213 0.000<br>ressimi 0.155 0.252 0.282 -5.234 0.000<br>ressimi 0.155 0.252 0.282 -5.234 0.000<br>ressimi 0.155 0.551 0.556 0.000<br>ressimi 0.155 0.252 0.282 -5.234 0.000<br>ressimi 0.155 0.551 0.556 0.000<br>ressimi 0.155 0.551 0.556 0.000<br>ressimi 0.155 0.551 0.556 0.000<br>ressimi 0.155 0.519 0.252 0.282 -1.0138<br>adveck 0.237 0.237 0.275 0.000<br>ressimi 0.155 0.519 0.558 0.1768 0.000<br>ressimi 0.155 0.519 0.558 0.1768 0.000<br>ressimi 0.551 0.519 0.558 0.175 0.000<br>ressimi 0.551 0.519 0.558 0.151 0.000<br>ressimi 0.553 0.511 0.556 0.032 0.000<br>ressimi 0.520 0.179 0.253 0.038 0.000<br>ressimi 0.520 0.179 0.253 0.151 0.000<br>ressimi 0.520 0.179 0.155 0.202 0.1997 0.000<br>jd 0.719 0.458 0.232 0.1987 0.000<br>ressimi 0.520 0.179 0.558 0.150 0.000<br>ressimi 0.520 0.179 0.558 0.151 0.000<br>ressimi 0.520 0.179 0.455 0.151 0.000<br>ressimi 0.520 0.179 0.455 0.232 0.000<br>ressimi 0.520 0.179 0.355 0.151 0.000<br>ressimi 0.520 0.179 0.252 0.248 0.000<br>ressimi 0.520 0.177 0.171 0.173 0.000<br>ressimi 0.520 0.170 0.252 0.248 0.000<br>ressimi 0.520 0.170 0.252 0.248 0.000<br>ressimi 0.531 0.511 0.925 0.228 0.000<br>ressimi 0.511 0.808 0.381 0.381 0.380 0.000<br>ressimi 0.380 0.381 0.380 0.381 0.380 0.000<br>ressimi 0.380 0.381 0.382 0.380 0.000<br>ressimi 0.380 0.381 0.382 0.380 0.000<br>ressimi 0.380 0.381 0.322 0.444 0.353 0.000<br>ressimi 0.380 0.380  | 1 1 1             |        |         |       |       |       | Karimi                 |
| phenian 0 513 0 444 0 4561 0 500 0 617<br>meb-Gornez 0 300 0 243 0 372 - 752 0 0000<br>pab-Gornez 0 300 0 243 0 372 - 4755 0 0000<br>pab 0 479 0 430 0 529 - 0.816 0 414<br>0 193as 0 377 0 0.330 0 529 - 14.255 0 0000<br>test 0 377 0 0.340 0 392 - 14.255 0 0000<br>test 0 376 0 0.42 0 644 0 0000<br>test 0 376 0 0.42 0 542 - 6.442 0 0000<br>test 0 376 0 0.42 0 542 - 6.442 0 0000<br>test 0 376 0 0.42 0 542 - 6.442 0 0000<br>test 0 55 0 125 0 292 - 5.221 0 0000<br>adwtck 0 241 0 203 0 232 - 12.413 0 0000<br>trom 0 0.57 0 542 0 548 0 358 0 1444 0 138<br>adwtck 0 241 0 203 0 232 - 12.413 0 0000<br>trom 0 0.57 0 542 0 548 0 358 0 1444 0 138<br>ngabeen 0 541 0 516 0 565 3 1.58 0 0000<br>trom 0 0.57 0 718 0 574 4 739 0 0000<br>trom 0 157 0 175 1 554 0 0000<br>trom 0 156 0 175 0 1325 0 0000<br>trom 0 256 0 528 0 531 0 516 0 0000<br>trom 0 257 0 0.58 0 1.58 0 0000<br>trom 0 256 0 572 0 0.79 0 0000<br>test 0 0240 0 237 0 283 - 30835 0 0000<br>trom 0 224 0 227 0 150 0 175 1 1554 0 0000<br>trom 0 055 0 477 0 153 0 0.39 0 .597<br>trom 0 224 0 228 0 1567 0 0.790 0 000<br>test 0 028 0 0.217 0 0.22 1 0.893 3 0.090<br>trom 0 224 0 218 0 300 - 5.194 0 0000<br>test 0 0450 0 355 0 477 - 5.394 0 0000<br>test 0 0450 0 355 0 477 - 5.394 0 0000<br>test 0 0450 0 356 0 477 0 0.22 - 14873 0 0000<br>test 0 0450 0 356 0 477 0 0.228 - 15.71 0 0.000<br>test 0 0450 0 356 0 477 0 0.228 - 15.877 0 0000<br>test 0 0450 0 356 0 477 0 0.258 0 0.900<br>test 0 0450 0 0.258 0 477 - 2.288 0 0000<br>test 0 0450 0 356 0 477 0 0.258 0 0.000<br>test 0 0450 0 356 0 477 0 0.258 0 0.000<br>test 0 0450 0 356 0 477 0 0.258 0 0.000<br>test 0 0450 0 0.258 0 477 - 2.288 0 0000<br>test 0 0450 0 0.258 0 477 - 2.288 0 0000<br>test 0 0450 0 0.258 0 477 - 2.288 0 0000<br>test 0 0.450 0 0.258 0 477 - 2.288 0 0000<br>test 0 0.450 0 0.258 0 477 - 2.587 0 0000<br>test 0 0.380 0 0.280 0 0.295 0 1.1867 0 0000<br>test 0 0.450 0 0.252 - 0.770 0 0.442<br>0 0.51 - 11.67 0 0.000<br>test 0 0.440 0 0.52 0 1.186 0 0.000<br>test 0 0.41   | I I 🕇 🛛           |        |         |       |       |       | Amanlou                |
| hebi         0.320         0.290         0.324         -7.502         0.000           senbatt         0.280         0.245         0.327         -9.014         0.000           senbatt         0.245         0.327         -9.014         0.000           senbatt         0.376         0.380         0.422         5.42         0.000           left         0.376         0.380         0.322         -1.225         0.000           left         0.376         0.360         0.322         -1.2213         0.000           left         0.376         0.380         0.322         -1.2213         0.000           adwick         0.241         0.203         0.242         -1.213         0.000           adwick         0.241         0.203         0.283         0.001           norb         0.551         0.257         0.237         1.365         0.000           norb         0.551         0.577         1.125         0.000           norb         0.744         0.716         0.777         1.125         0.000           pige>Nus         0.561         0.270         0.751         1.554         0.000           pige>Nus         0.578  | I I 1             |        |         |       |       |       | Bagherian              |
| senblat         0.246         0.247         0.040         0.529         0.014         0.000           uplass         0.379         0.388         0.422         5.442         0.000           regh         0.376         0.360         0.322         1.4254         0.000           regh         0.377         0.365         0.321         1.4244         0.000           ressini         0.195         0.125         0.222         5.224         0.000           adartck         0.241         0.203         0.282         -1.413         0.000           ressini         0.195         0.125         0.222         -1.013         0.000           ressini         0.195         0.253         0.481         0.001           ressini         0.157         0.228         0.581         0.000           ressini         0.177         0.128         0.000           ressini         0.177         0.128         0.000           resombath         0.581         1.161         0.000           resombath         0.584         0.222         1.937         0.000           resombath         0.584         0.238         0.398         0.997           o  | I I ∎T            |        |         |       |       |       | Mohebbi                |
| jab 0.479 0.430 0.529 -0.816 0.414<br>updas 0.377 0.380 0.322 -14.25 0.000<br>itet 0.376 0.362 0.322 -14.25 0.000<br>itessini 0.195 0.157 0.256 -12.213 0.000<br>itessini 0.195 0.152 0.252 -5.234 0.000<br>adwick 0.241 0.203 0.282 -10.413 0.000<br>hejabein 0.537 0.488 0.595 1.444 0.138<br>adwick 0.550 0.528 0.591 3.656 0.000<br>hejabein 0.541 0.575 4.799 0.000<br>ro 0.2550 0.528 0.571 0.253 -30.835 0.000<br>hejabein 0.571 0.771 12.28 0.000<br>re 0.721 0.722 0.723 -338.35 0.000<br>hejabein 0.571 0.155 0.774 11.725 0.000<br>re 0.721 0.722 0.751 1.554 0.000<br>hejabein 0.519 0.518 0.740 11.725 0.000<br>re 0.721 0.722 0.751 1.554 0.000<br>hejabein 0.571 0.575 4.798 0.000<br>hejabein 0.520 0.237 0.253 -30.835 0.000<br>hejabein 0.575 0.751 1.554 0.000<br>hejabein 0.520 0.237 0.53 0.538 0.039<br>re 0.580 0.411 0.575 0.518 0.398 0.597<br>ou 0.284 0.218 0.350 -5194 0.000<br>hejabein 0.543 0.531 0.438 0.543 0.003<br>re 0.560 0.475 0.538 0.338 0.800<br>hasimiskien 0.500 0.475 0.538 0.398 0.597<br>ou 0.284 0.218 0.360 -5194 0.000<br>hasimiskien 0.543 0.539 0.548 0.000<br>re 1.543 0.539 0.548 0.000<br>re 0.568 0.473 0.538 0.238 0.000<br>re 0.568 0.473 0.538 0.238 0.000<br>re 0.568 0.473 0.539 0.238 0.000<br>re 0.568 0.477 0.365 -1194 0.000<br>hasimiskien 0.278 0.299 -7046 0.000<br>re 0.580 0.477 0.538 0.238 0.000<br>re 0.580 0.477 0.538 0.532 0.238 0.000<br>re 0.580 0.537 0.443 0.532 0.238 0.000<br>re 0.580 0.517 0.442 0.031 0.474 0.000<br>hejb 0.035 0.341 0.477 0.248 0.000<br>hejb 0.035 0.348 0.477 0.228 0.070<br>hejb 0.042 0.250 0.051 -11.073 0.000<br>hejb 0.042 0.250 0.051 -11.05 0.000<br>hejb 0.044 0.221 0.177 0.247 1.2144 0.000<br>heina 0.338 0.348 0.372 0.2196 0.000<br>hejb 0.0380 0.348 0.372 0.2196 0.000<br>hejb 0.0380 0.348 0.372 0.2196 0.000<br>hejb 0.0380 0.348 0.372 0.2196 0.000<br>heina 0.348 0.322 0.477 0.2196 0.000<br>heina 0.348 0.322 0.340 0.371 -12144 0.000<br>hei  | =                 |        |         |       |       |       | Ramos-Gomez            |
| uglass 0.779 0.338 0.422 - 5.42 0.000<br>regh 0.77 0.037 0.327 11.254 0.000<br>ressini 0.78 0.377 0.327 11.254 0.000<br>ressini 0.195 0.125 0.222 - 5.234 0.000<br>adwick 0.241 0.203 0.252 - 10.413 0.000<br>norbm 0.537 0.488 0.585 1.494 0.138<br>al 0.559 0.528 0.591 3.656 0.000<br>ressini 0.710 0.578 0.740 11.725 0.000<br>robm 0.550 0.237 0.233 3.0355 0.000<br>robm 0.550 0.237 0.233 3.0355 0.000<br>robm 0.710 0.578 0.740 11.725 0.000<br>robm 0.717 0.128 0.200<br>robm 0.717 0.128 0.200<br>robm 0.717 0.158 0.202 1.937 0.000<br>pige 0.717 0.158 0.202 1.937 0.000<br>pige 0.719 0.158 0.329 0.997<br>ou 0.284 0.218 0.309 0.511 0.500<br>ressinskine 0.508 0.431 0.553 0.138 0.000<br>resombalh 0.820 0.719 0.852 11.651 0.000<br>pige 0.719 0.158 0.328 0.997<br>ou 0.284 0.218 0.303 - 5.114 0.000<br>pige 0.431 0.591 0.538 0.238 0.097<br>ou 0.284 0.218 0.303 - 5.114 0.000<br>pige 0.431 0.591 0.538 0.238 0.097<br>ou 0.284 0.218 0.303 - 5.114 0.000<br>rera 0.434 0.391 0.533 5.238 0.000<br>rera 0.434 0.391 0.533 5.238 0.000<br>rera 0.434 0.391 0.533 5.238 0.000<br>rera 0.228 0.278 0.399 -7.046 0.000<br>pige 0.400 0.255 0.437 - 5.304 0.000<br>rera 0.430 0.391 0.533 2.2386 0.000<br>rera 0.430 0.391 0.533 0.238 0.000<br>rera 0.451 0.552 0.437 -5.304 0.000<br>rera 0.452 0.278 0.399 -7.046 0.000<br>rera 0.451 0.552 0.477 -5.304 0.000<br>rera 0.452 0.278 0.399 -7.046 0.000<br>rera 0.451 0.552 0.477 -5.304 0.000<br>rera 0.452 0.278 0.399 -7.046 0.000<br>rera 0.451 0.552 0.477 -5.348 0.000<br>rera 0.452 0.278 0.399 -7.046 0.000<br>rera 0.451 0.552 0.477 -5.380 0.000<br>rera 0.452 0.278 0.399 -7.046 0.000<br>rera 0.451 0.552 0.477 -5.348 0.000<br>rera 0.452 0.770 0.442<br>rera 0.450 0.451 0.552 0.477 -5.348 0.000<br>rera 0.450 0.521 0.577 0.442<br>rera 0.450 0.451 0.552 0.477 -5.380 0.000<br>rera 0.451 0.552 0.477 -5.865 0.000<br>rera 0.452 0.452 0.454 -3.533 0.000<br>rera 0.451 0.552 0.577 0.442<br>rera 0.450 0.380 0.381 1.1957 0.000<br>rera 0.451 0.552 0.557 -0.770 0.442<br>rera 0.450 0.458 0.552 0.457 -5.265 0.000<br>rera 0.450 0.558 0.457 -5.560 0.000<br>rera 0.450 0.560 0.442 0.551 -1.115 0.2855<br>rera 0.384 0.326 0.444 -3.534 0.000<br>rera 0.  | 1 1 = 1           |        |         |       |       |       | Rosenblatt             |
| Heft         0.376         0.360         0.392         -14.256         0.000           Heft         0.376         0.367         0.365         -12.213         0.000           Heft         0.376         0.365         0.222         -52.24         0.000           Heft         0.376         0.488         0.565         0.520         -14.413         0.000           Heft         0.537         0.488         0.566         0.100         -14.413         0.000           Heft         0.531         0.511         0.556         0.520         0.000         -14.41         0.117         -17.55         0.000           Heft         0.710         0.757         0.755         1.554         0.000         -14.41         0.156         0.777         1.725         0.000           reguez.Haw         0.779         0.455         1.1561         0.000         -15654         0.000         -15654         0.000         -15654         0.000         -15654         0.200         -15654         0.200         -15654         0.200         -15654         0.200         -15654         0.200         -15654         0.200         -15654         0.200         -1576         0.477         0.558         0.257<   | I I =T            |        |         |       |       |       | Rajab<br>Douglass      |
| Heft 0,376 0,357 0,356 -12.213 0,000          adwick       0.241       0.202       0.222       -10.413       0.000         adwick       0.241       0.203       0.282       -10.413       0.000         heijabein       0.559       0.528       0.591       3.566       0.000         heijabein       0.541       0.516       0.566       3.198       0.001         nordh       0.531       0.517       4.7579       0.000         ro       0.250       0.237       0.263       -30.355       0.000         ro       0.250       0.237       0.263       -30.355       0.000         regord       0.771       0.720       0.771       1.3288       0.000         rayex-Nava       0.779       0.551       0.554       0.000         rayex-Nava       0.779       0.585       1.584       0.000         rayex-Nava       0.506       0.475       0.538       0.389       0.697         rayex-Nava       0.506       0.475       0.538       0.389       0.697         raye       0.484       0.551       0.000       0.558       0.537       0.268       1.5787       0.000         gishear       0.437       0.593 </td <td>     </td> <td>0.000</td> <td>-14.255</td> <td></td> <td></td> <td>0.375</td> <td>Hallett1</td>   |                   | 0.000  | -14.255 |       |       | 0.375 | Hallett1               |
| ressini 0.1956 0.125 0.222 -5.234 0.000<br>hroth 0.537 0.488 0.595 1.484 0.138<br>al 0.559 0.528 0.591 3.656 0.000<br>hroth 0.557 0.518 0.556 3.198 0.000<br>hroth 0.553 0.531 0.575 4.759 0.000<br>hroth 0.771 0.578 0.740 11.725 0.000<br>hroth 0.719 0.578 0.740 11.725 0.000<br>hroth 0.719 0.578 0.740 11.725 0.000<br>hroth 0.719 0.578 0.720 1.258 0.000<br>hroth 0.719 0.587 0.720 1.258 0.000<br>hroth 0.719 0.581 0.202 1.9473 0.000<br>jd 0.719 0.581 0.538 0.380 0.597<br>ou 0.284 0.275 0.538 0.380 0.597<br>ou 0.284 0.275 0.538 0.380 0.597<br>ou 0.284 0.278 0.399 -7.046 0.000<br>hisinstiene 0.566 0.475 0.538 0.380 0.597<br>ou 0.284 0.218 0.360 -5.194 0.000<br>hisinstiene 0.566 0.475 0.538 0.380 0.597<br>ou 0.284 0.218 0.350 -5.198 0.000<br>hisinstiene 0.566 0.475 0.538 0.380 0.597<br>ou 0.284 0.218 0.360 -5.194 0.000<br>hisinstiene 0.566 0.475 0.538 0.380 0.597<br>ou 0.284 0.218 0.350 -5.198 0.000<br>hisinstiene 0.566 0.477 1.5368 0.000<br>hisinstiene 0.568 0.431 0.593 5.208 0.000<br>hisinstiene 0.568 0.431 0.593 5.238 0.000<br>hisinstiene 0.586 0.431 0.593 0.528 0.000<br>hisinstiene 0.568 0.431 0.593 0.528 0.000<br>hisinstiene 0.568 0.431 0.593 0.494<br>o.109 0.344 0.391 0.593 1.4147 0.000<br>hips 0.623 0.110 0.525 -24.681 0.000<br>hisinstiene 0.390 0.381 0.519 0.1992 0.326<br>buruppulos-1 0.326 0.277 0.286 0.000<br>hisinstiene 0.431 0.529 0.770 0.442<br>hisinguii 0.481 0.451 0.529 0.770 0.442<br>hisinguii 0.481 0.451 0.529 0.770 0.442<br>hisinguii 0.481 0.451 0.452 0.529 0.000<br>hips-2 0.042 0.022 0.434 -3653 0.000<br>hips-2 0.042 0.022 0.444 -3653 0.000<br>hips-2 0.042 0.022 0.444 -3653 0.000<br>hips-2 0.042 0.022 0.444 -3653 0.000<br>hips 0.441 0.177 0.247 0.247 0.247 0.247<br>hisinguii 0.441 0.176 0.411 0.116<br>hisinguii 0.441 0.116 0.177 -12194 0.000<br>high 0.473 0.428 0.521 -1.115 0.265<br>hisinguii 0.443 0.427 0.424 0.521 -1.115 0.265<br>hisinguii 0.441 0.116 0.177 -12194 0.000<br>hisinguii 0.441 0.116 0.177 -12196 0.0000<br>high 0.344 0.322 0.446 -3640 0.000<br>hisinguii 0.44  |                   |        |         |       |       |       | Sayegh                 |
| adawack 0.241 0.203 0.282 -10.413 0.000<br>hejabeen 0.551 0.551 0.556 3.198 0.001<br>hejabeen 0.551 0.551 0.556 3.198 0.001<br>ro 0.253 0.531 0.575 4.759 0.000<br>ro 0.250 0.237 0.263 -30.835 0.000<br>re 0.771 0.727 0.702 0.771 1.328 0.000<br>re 0.727 0.702 0.771 1.328 0.000<br>re 0.779 0.025 0.751 1.554 0.000<br>repuez-Nava 0.779 0.855 11.651 0.000<br>resombalh 0.820 0.779 0.855 11.651 0.000<br>resombalh 0.820 0.475 0.538 0.389 0.697<br>ro 0.448 0.248 0.218 0.398 0.597<br>ro 0.448 0.248 0.218 0.398 0.597<br>ro 0.448 0.248 0.252 10.946 0.000<br>resombalh 0.820 0.475 0.538 0.389 0.697<br>ro 0.458 0.248 0.258 0.398 0.597<br>ro 0.458 0.258 0.398 -7.046 0.000<br>resombalh 0.820 0.447 0.599 0.399 -7.046 0.000<br>resombalh 0.820 0.543 0.593 5.288 0.000<br>resombalh 0.820 0.543 0.593 5.288 0.000<br>resombalh 0.220 0.278 0.369 -7.046 0.000<br>resombalh 0.220 0.278 0.369 -7.046 0.000<br>resombalh 0.250 0.543 0.530 4.000<br>resombalh 0.252 0.278 0.369 -7.046 0.000<br>resombalh 0.252 0.278 0.369 -7.046 0.000<br>resolu 0.222 0.278 0.369 -7.046 0.000<br>resolu 0.225 0.248 0.451 1.3.763 0.000<br>resolu 0.380 0.361 0.399 -11.947 0.000<br>resolu 0.380 0.361 0.399 -11.947 0.000<br>runcpoulos-2 0.537 0.463 0.500<br>runcpoulos-2 0.537 0.463 0.510 0.912<br>runcpoulos-2 0.537 0.463 0.529 -0.770 0.442<br>runcpoulos-2 0.537 0.463 0.510 0.925 0.2468 1.0000<br>runcpoulos-2 0.537 0.463 0.529 -0.770 0.442<br>runcpoulos-2 0.537 0.463 0.529 0.770 0.442<br>runcpoulos-2 0.537 0.463 0.529 0.702 0.326<br>runcpoulos-2 0.537 0.463 0.529 0.702 0.326<br>runcpoulos-2 0.537 0.463 0.529 0.702 0.326<br>runcpoulos-2 0.537 0.463 0.500 0.702 0.523 0.000<br>runcpoulos-2 0.537 0.463 0.500 0.702 0.5237 0.000<br>runcpoulos-2 0.537 0.463 0.500 0.702 0.5237 0.000<br>runcpoulos-2 0.537 0.463 0.500 0.702 0.5237 0.000<br>runcpoulos-2 0.537 0.464 0.364 0.364 0.364<br>runcpoulos-2 0.530 0.444 0.372 0.4196 0.000<br>runcpoulos-3 0.340 0.344 0.345 0.529 0.000<br>runcp  |                   |        |         |       |       |       | Hallett                |
| Indem         0.537         0.488         0.585         1.484         0.138           hajabeen         0.551         0.556         0.551         0.556         0.511         0.566         0.001           no         0.553         0.531         0.575         4.759         0.000           no         0.553         0.531         0.575         4.759         0.000           no         0.576         0.740         1.125         0.000           no         0.777         0.702         0.751         15.584         0.000           warence         0.727         0.702         0.751         15.584         0.000           jabexar         0.820         0.779         0.585         1.1651         0.000           jabexar         0.434         0.391         0.478         -2.943         0.003           r         0.466         0.473         0.598         1.000         0.000           jabexar         0.431         0.561         -0.133         0.294         0.214         0.216           rer         0.468         0.431         0.532         0.298         1.000         0.000           jabexar         0.427         0.252         0   |                   |        |         |       |       |       | Chadwick               |
| hejabeen         0.541         0.556         3.198         0.001           re         0.253         0.531         0.574         0.779         0.000           nre         0.250         0.231         0.253         -0.30355         0.000           wrence         0.774         0.776         0.777         1.3258         0.000           wrence         0.727         0.702         0.751         15.584         0.000           grace-Nava         0.779         0.555         1.051         0.000           jid         0.719         0.556         0.329         0.020         1.797           jid         0.719         0.556         0.329         0.298         0.218         0.218           jibexar         0.440         0.320         0.779         0.550         0.399         0.499           jibexar         0.446         0.311         0.560         0.431         0.560         0.431           jibexar         0.446         0.321         0.278         0.209         0.394         0.491           jibexar         0.430         0.560         0.431         0.573         0.450         0.000           jibratarbar         0.430         0.36  | 1 1 7 1           |        |         |       |       |       | Schroth                |
| 0.553         0.531         0.575         4.759         0.000           hroth1         0.710         0.250         0.231         0.263         0.000           hroth1         0.716         0.777         13.258         0.000           nwence         0.727         0.702         15584         0.000           rguez-Nava         0.779         0.755         15584         0.000           rguez-Nava         0.779         0.855         11.051         0.000           nesombath         0.820         0.779         0.855         11.051         0.000           piblasissiene         0.566         0.477         0.558         0.039         0.997           put         0.284         0.211         0.350         -5184         0.000           rgibkar         0.434         0.391         5.288         0.000           mainhamy         0.222         0.278         0.399         7.046         0.000           rer         0.422         0.278         0.399         7.046         0.000           righ         0.400         0.365         0.451         -3.753         0.000           righ         0.420         0.527         0.278   |                   |        |         |       |       |       | Tsai                   |
| ro         0.250         0.237         0.283         -0.0835         0.000           ne         0.740         0.767         0.772         0.726         0.000           merce         0.727         0.702         0.771         13.258         0.000           merce         0.727         0.702         0.751         15.584         0.000           jid         0.719         0.158         0.202         -19.873         0.000           jid         0.719         0.158         0.202         -19.873         0.000           bisinskine         0.506         0.475         0.538         0.389         0.987           ou         0.244         0.218         0.218         0.218         0.218         0.218           ou         0.225         0.278         0.399         -7.046         0.000           maithamy         0.322         0.278         0.389         -7.046         0.000           ips         0.420         0.279         0.399         -7.046         0.000           ips         0.423         0.277         0.744         16.632         0.000           ips         0.423         0.374         16.832         0.000  |                   |        |         |       |       |       | Mahejabeen             |
| Indeh         0.710         0.878         0.716         0.774         0.716         0.776         0.775         1.728         0.000           wrence         0.727         0.702         0.751         1.5584         0.000           gugezNawa         0.179         0.864         0.752         0.755         1.1584         0.000           esombath         0.820         0.779         0.855         1.1651         0.000           bisinskiene         0.656         0.477         0.558         0.133         0.897           ou         0.824         0.218         0.389         0.897         0.000           iphexar         0.434         0.319         0.478         0.243         0.000           iphexar         0.434         0.319         0.7046         0.000           kash         0.272         0.278         0.399         -7046         0.000           kash         0.272         0.278         0.399         -7046         0.000           irsoto         0.380         0.437         -5.344         0.000         0.001           irsoto         0.380         0.381         0.375         0.000         0.002         0.001           irso  |                   |        |         |       |       |       | Du<br>Ferro            |
| ne 0.748 0.716 0.777 13.288 0.000<br>rapus2-Nava 0.179 0.58 0.202 -19.873 0.000<br>rapus2-Nava 0.179 0.58 0.202 -19.873 0.000<br>rapus2-Nava 0.179 0.58 0.202 -19.873 0.000<br>rapus2-Nava 0.179 0.864 0.752 10.948 0.000<br>rapus2-Nava 0.506 0.475 0.538 0.389 0.697<br>rou 0.284 0.214 0.390 0.390 0.597<br>rou 0.224 0.214 0.390 -5194 0.000<br>ref 0.496 0.431 0.560 0.013 0.084<br>ref 0.496 0.431 0.560 0.010<br>rera 0.322 0.278 0.377 -5.304 0.000<br>rera 0.322 0.278 0.377 -5.304 0.000<br>raps 0.490 0.451 0.3753 0.000<br>raps 0.490 0.451 0.3753 0.000<br>raps 0.623 0.613 0.533 2.2388 0.000<br>raps 0.623 0.613 0.533 2.2388 0.000<br>raps 0.623 0.613 0.575 0.000<br>raps 0.623 0.510 0.395 -7.046 0.000<br>rera 0.320 0.276 0.457 -5.304 0.000<br>rera 0.320 0.276 0.457 -5.304 0.000<br>rep 0.490 0.821 0.774 16.632 0.000<br>raps 0.623 0.510 0.925 0.246 0.100<br>raps 0.490 0.821 0.774 16.632 0.000<br>raps 0.490 0.821 0.774 16.632 0.000<br>raps 0.490 0.821 0.474 16.632 0.000<br>raps 0.490 0.824 0.451 -3.573 0.000<br>raps 0.141 0.455 0.529 0.070 0.442<br>ref 0.380 0.361 0.399 -114 -171 0.000<br>raps 0.141 0.457 0.541 1.047 0.000<br>raps 0.141 0.457 0.541 1.047 0.000<br>raps 0.442 0.022 0.444 -3.651 0.000<br>raps 0.442 0.022 0.444 -3.653 0.000<br>raps 0.441 0.457 0.541 1.034 0.301<br>raps 0.473 0.752 0.463 0.420 0.227 0.070 -4.422<br>raps 0.421 0.22 0.423 -4.43 -3.540 0.000<br>raps 0.444 0.457 0.541 1.034 0.301<br>raps 0.473 0.752 0.464 -3.634 0.000<br>raps 0.444 0.457 0.541 1.034 0.301<br>raps 0.473 0.752 0.464 -3.634 0.000<br>raps 0.444 0.457 0.541 1.034 0.301<br>raps 0.473 0.752 0.464 -3.634 0.000<br>raps 0.444 0.477 0.427 +2.144 0.000<br>raps 0.444 0.446 -3.644 -3.644 -3.646<br>raps 0.033 0.1494 0.000<br>raps 0.441 0.116 0.171 -1.5660 0.000<br>raps 0.444 0.511 0.590 0.000<br>raps 0.444 0.511 0.590 0.000  | 1 1 - 1 1         |        |         |       |       |       | Schroth1               |
| typez-Nava         0         0         0         158         0.202         -19.873         0.000           nesombath         0.820         0.779         0.845         0.1762         0.0440         0.000           bisinskene         0.560         0.475         0.533         0.389         0.697           ou         0.284         0.218         0.319         0.478         -2.943         0.000           jahekar         0.434         0.319         0.478         -2.943         0.000           ighekar         0.436         0.319         0.578         0.039         5.288         0.000           manharm         0.222         0.228         0.238         -7.046         0.000           kash         0.275         0.253         0.288         -7.046         0.000           tera         0.322         0.278         0.369         -7.046         0.000           tera         0.322         0.278         0.369         -7.046         0.000           tera         0.322         0.278         0.4681         0.000           tera         0.326         0.877         0.533         0.000           tera         0.453         0.510   |                   | 0.000  | 13.258  | 0.777 | 0.716 | 0.748 | Wyne                   |
| idi         0.719         0.844         0.752         10.449         0.000           bbinssiene         0.500         0.779         0.553         0.380         0.597           ou         0.284         0.218         0.380         0.597           ou         0.434         0.391         0.478         2.243         0.003           r         0.436         0.391         0.478         2.243         0.003           r         0.486         0.431         0.560         -0.133         0.894           manihamy         0.322         0.278         0.389         -7.046         0.000           igh         0.400         0.365         0.437         -5.304         0.000           igh         0.400         0.365         0.437         -5.304         0.000           igh         0.400         0.365         0.437         -5.304         0.000           ips         0.623         0.613         0.532         -24.86         0.000           ips         0.623         0.614         0.552         -0.000         -37.61         0.000           ips         0.267         0.190         0.225         -24.86         0.000         -36.51  |                   |        |         |       |       |       | Lawrence               |
| nesombath 0.820 0.779 0.855 11.651 0.000<br>buinssiene 0.254 0.218 0.350 0.5184 0.000<br>j8hekar 0.434 0.91 0.478 -2.943 0.003<br>er 0.456 0.431 0.560 0.133 0.894<br>0.568 0.543 0.939 5.288 0.000<br>mainhamy 0.222 0.278 0.399 -7.046 0.000<br>jkash 0.222 0.278 0.399 -7.046 0.000<br>jps 0.623 0.613 0.533 2.238 0.000<br>rera 0.322 0.278 0.399 -7.046 0.000<br>jps 0.623 0.613 0.533 2.238 0.000<br>rera 0.322 0.278 0.399 -7.046 0.000<br>jps 0.623 0.613 0.533 2.238 0.000<br>ing 0.349 0.451 -3.753 0.000<br>jps 0.623 0.613 0.533 2.238 0.000<br>ing 0.849 0.821 0.774 16.832 0.000<br>jps 0.623 0.613 0.533 2.238 0.000<br>ing 0.849 0.821 0.774 16.832 0.000<br>jps 0.639 0.340 0.451 -3.753 0.000<br>ing 0.849 0.821 0.774 16.832 0.000<br>ing 0.849 0.821 0.774 15.832 0.000<br>ing 0.849 0.821 0.774 15.832 0.000<br>jps 0.130 0.252 0.278 0.399 -11.947 0.000<br>juropoulos-1 0.380 0.361 0.399 -11.947 0.000<br>juropoulos-2 0.537 0.463 0.610 0.982 0.326<br>ouropoulos-2 0.537 0.463 0.510 0.982 0.326<br>juropoulos-2 0.537 0.463 0.510 0.982 0.326<br>juropoulos-2 0.537 0.463 0.510 0.982 0.326<br>juropoulos-2 0.537 0.463 0.511 0.000<br>juropoulos-2 0.537 0.463 0.510 0.982 0.326<br>juropoulos-2 0.537 0.686 7.333 0.000<br>juropoulos-2 0.537 0.868 7.33 0.000<br>juropoulos-2 0.537 0.686 7.533 0.000<br>juropoulos 0.380 0.326 0.424 0.325 1.1105 0.000<br>juropoulos 0.380 0.326 0.424 0.325 0.446 -3634 0.000<br>juropoulos 0.380 0.326 0.446 0.3634 0.000<br>juropoulos 0.380 0.326 0.446 0.3634 0.000<br>juropoulos 0.380 0.345 0.327 0.421045 0.000<br>juropoulos 0.380 0.346 0.326 0.446 0.3634 0.000<br>juropoulos 0.380 0.346 0.346 0.327 0.421045 0.000<br>juropoulos 0.380 0.346 0.348 0.326 0.446 0.3634 0.000<br>juropoulos 0.380 0.346 0.346 0.346 0.346 0.340<br>juropoulos 0.380 0.345 0.346 0.000<br>ju  | 1 1 - 1 -         |        |         |       |       |       | Vazquez-Nava<br>Jigjid |
| bbinsiene 0.506 0.475 0.538 0.389 0.697<br>ou 0.284 0.218 0.360 5.194 0.000<br>jshekar 0.434 0.391 0.478 -2.943 0.003<br>er 0.496 0.431 0.560 -0.133 0.894<br>manhamy 0.322 0.278 0.369 -7.046 0.000<br>manhamy 0.322 0.278 0.369 -7.046 0.000<br>ips 0.400 0.365 0.437 -5.304 0.000<br>ips 0.420 0.365 0.437 -5.304 0.000<br>ips 0.420 0.365 0.437 -5.304 0.000<br>ips 0.623 0.613 0.333 2.2388 0.000<br>ang 0.849 0.451 0.375 0.250 0.456 1.000<br>ips 0.623 0.613 0.399 -7.046 0.000<br>ips 0.623 0.613 0.399 -7.046 0.000<br>ips 0.623 0.613 0.339 2.2486 1 0.000<br>ips 0.623 0.613 0.399 -7.046 0.000<br>ips 0.623 0.613 0.599 0.344 -3.653 0.000<br>ips 0.380 0.361 0.399 -7.70 0.442<br>ips 0.410 0.425 0.529 -0.770 0.442<br>inguin 0.411 0.415 0.529 0.770 0.442<br>inguin 0.411 0.415 0.529 0.070<br>inguin 0.677 0.868 0.866 45.328 0.000<br>ingu 0.677 0.868 0.464 -3.634 0.000<br>ingu 0.677 0.868 0.382 0.477 -2.286 0.000<br>ingu 0.677 0.868 0.386 45.328 0.000<br>ingu 0.677 0.968 0.386 45.328 0.000<br>ingu 0.677 0.868 0.000<br>ingu 0.677 0.868 0.000 0.33 -1.1966 0.000<br>ingu 0.677 0.868 0.000 0.000<br>ingu 0.782 0.424 0.521 -1.115 0.265<br>ingu 0.441 0.116 0.717 +1.2184 0.000<br>ingu 0.782 0.344 0.325 0.446 -3.634 0.000<br>ingu 0.782 0.340 0.345 0.345 0.340 0.000<br>ingu 0.782 0.340 0.335 0.340 0.335 0.340 0.34  |                   |        |         |       |       |       | Senesombath            |
| jahekar 0,434 0,391 0,478 -2.943 0,003<br>er 0,466 0,431 0,590 -7.046 0,000<br>marihamy 0,322 0,278 0,253 0,209 -7.046 0,000<br>jgh 0,400 0,356 0,437 -5.304 0,000<br>ips 0,420 0,356 0,437 -5.304 0,000<br>ips 0,420 0,356 0,437 -5.304 0,000<br>ips 0,623 0,613 0,533 2,2388 0,000<br>ang 0,849 0,451 0,375 0,000<br>ang 0,849 0,821 0,874 16,632 0,000<br>ang 0,849 0,821 0,874 16,632 0,000<br>iouropoulos-1 0,926 0,876 0,925 2,4681 0,000<br>iouropoulos-1 0,926 0,876 0,925 2,4681 0,000<br>iouropoulos-3 0,360 0,351 0,399 -11,947 0,000<br>iouropoulos-3 0,380 0,242 0,444 -3.653 0,000<br>ing 0,849 0,382 0,477 -2.886 0,004<br>ing 0,849 0,382 0,477 -2.886 0,004<br>ing 0,877 0,588 0,866 45,328 0,000<br>ing 0,877 0,584 0,595 -11,1067 0,000<br>ing 0,877 0,584 0,866 45,328 0,000<br>ing 0,877 0,986 0,886 45,328 0,000<br>ing 0,872 0,447 0,541 1,034 0,301<br>ing 0,877 0,986 0,886 45,328 0,000<br>ing 0,872 0,447 0,541 1,034 0,301<br>ing 0,877 0,986 0,386 45,338 0,000<br>ing 0,872 0,446 0,341 0,344 0,301<br>ing 0,873 0,428 0,421 0,541 0,000<br>ing 0,872 0,447 0,541 1,034 0,301<br>ing 0,873 0,428 0,423 0,521 -1,115 0,287<br>ing 0,441 0,116 0,171 -15,980 0,000<br>ing 0,782 0,762 0,801 2,1986 0,000<br>ing 0,782 0,340 0,337 -1,2144 0,000<br>ing 0,782 0,340 0,337 -1,315 0,000<br>ing 0,333 0,340 0,333 0,310 0,335 0,340 -1,315 0,000<br>ing 0,333 0,320 0,345 0,310 0,300  | 1 1 🛊             |        |         | 0.538 |       | 0.506 | Slabsinskiene          |
| ef         0.496         0.431         0.560         -0.133         0.894           0.568         0.543         0.593         5.288         0.000           maithamy         0.322         0.278         0.369         -7.046         0.000           kash         0.275         0.233         0.298         -6.000           gh         0.400         0.365         0.437         -5.304         0.000           rera         0.322         0.278         0.369         -7.046         0.000           rsoto         0.389         0.431         0.533         2.238         0.000           rsoto         0.399         0.441         0.3723         0.000         -16522         0.000           naka         0.207         0.190         0.225         -24.681         0.000         -16522         0.000           naka         0.207         0.190         0.225         -27.681         0.000         -11.947         0.000           utropoulos-1         0.360         0.252         -0.770         0.442         0.324         0.453         0.529         -0.770         0.442         0.324         0.427         0.324         1.17103         0.000         -11.865   | =_                |        |         |       |       |       | Zhou                   |
| 0.668         0.543         0.593         5.288         0.000           kash         0.275         0.259         0.268         -7.046         0.000           kash         0.275         0.253         0.268         -7.046         0.000           tran         0.222         0.278         0.369         0.369         0.364         0.600           tran         0.222         0.278         0.469         0.000   |                   |        |         |       |       |       | Rajshekar<br>Ozer      |
| manhamy         0.322         0.278         0.259         0.746         0.000           tksh         0.727         0.250         0.269         0.7677         0.269         0.7677         0.269         0.7677         0.269         0.7677         0.260         0.260         0.2778         0.250         0.261         0.262         0.261         0.363         0.22388         0.000           trans         0.222         0.278         0.363         0.2388         0.000           tsoto         0.399         0.341         0.3723         0.800         0.811         0.3783         0.000           tsoto         0.399         0.341         0.3753         0.000         0.025         0.463         0.139         0.341         0.3753         0.000           tombo         0.380         0.361         0.399         1.147         0.000           puropoulos-1         0.926         0.876         0.956         8.751         0.000           singut         0.481         0.399         1.147         0.000         0.026         0.015         0.453         0.501         0.242         0.362         0.477         0.286         0.004           ustedt         0.131         0.750 <td>I I T.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Li1</td>  | I I T.            |        |         |       |       |       | Li1                    |
| iph         0.400         0.365         0.437         -5.304         0.000           rera         0.322         0.278         0.369         -7.046         0.000           rsoto         0.399         0.340         0.451         -3.763         0.000           rsoto         0.399         0.340         0.451         -3.763         0.000           raka         0.207         0.949         0.821         0.374         0.652         0.600           raka         0.207         0.190         0.225         -24.081         0.000           puropoluos-1         0.926         0.876         0.956         8.751         0.000           puropoluos-2         0.537         0.463         0.510         0.982         0.326           puropoluos-1         0.926         0.877         0.956         8.751         0.000           puropoluos-2         0.537         0.463         0.529         -0.770         0.442           ustedt         0.131         0.929         -0.771         -0.442         0.382         0.447         -0.548         0.004           ustedt         0.131         0.755         0.968         45.238         0.004         9.97         9.97 <td></td> <td>0.000</td> <td>-7.046</td> <td>0.369</td> <td>0.278</td> <td>0.322</td> <td>Kumarihamy</td>   |                   | 0.000  | -7.046  | 0.369 | 0.278 | 0.322 | Kumarihamy             |
| rera         0.322         0.278         0.389         -7.046         0.000           risolto         0.339         0.349         0.451         -3.763         0.000           risolto         0.399         0.349         0.451         -3.763         0.000           naka         0.227         0.190         0.225         -2.24881         0.000           lombo         0.380         0.361         0.299         -11.947         0.000           utropoulos-10         0.380         0.361         0.999         -11.947         0.000           utropoulos-2         0.537         0.463         0.610         0.982         0.226         -2.4863         0.000           utropoulos-2         0.530         0.463         0.610         0.982         0.326         0.870         0.483         0.751         0.000           utropoulos-2         0.537         0.463         0.410         0.442         0.424         0.425         0.224         -2.486         0.004           uteledt         0.313         0.599         0.717         -11.103         0.600         0.664         45.2328         0.000           nps-2         0.424         0.422         0.521         -1.1155   |                   |        |         |       |       |       | Prakash                |
| ipps         0.623         0.613         0.238         0.000           inside         0.399         0.349         0.451         0.753         0.000           ang         0.849         0.821         0.874         16.632         0.000           nag         0.849         0.821         0.874         16.632         0.000           naka         0.207         0.190         0.225         22.681         0.000           iombo         0.380         0.381         0.399         1.1947         0.000           puropoulos-1         0.252         0.876         0.596         8.751         0.000           puropoulos-3         0.360         0.252         0.434         -3.653         0.000           puropoulos-3         0.381         0.529         0.770         0.442         0.451           ustext         0.131         0.099         1.1147         0.000         0.000         0.011         0.117         1.1037         0.000           nps-1         0.262         0.451         0.529         0.000         0.000         0.015         0.667         0.590         0.000         0.014         0.601         0.590         0.000         0.014         0.022   | 1 1 471           |        |         |       |       |       | Singh                  |
| risotto 0.399 0.349 0.451 -3.763 0.000<br>naka 0.207 0.190 0.225 -24.681 0.000<br>naka 0.207 0.190 0.225 -24.681 0.000<br>iombo 0.380 0.361 0.399 -11.947 0.000<br>outropoulos-2 0.537 0.463 0.510 0.992 0.326<br>outropoulos-2 0.537 0.463 0.510 0.992 0.326<br>nutropoulos-2 0.537 0.463 0.510 0.992 0.326<br>refes 0.429 0.382 0.473 -3.653 0.000<br>singut 0.481 0.435 0.529 -0.770 0.442<br>usted 0.131 0.099 0.111 -11.703 0.000<br>npc-1 0.028 0.015 0.051 -11.067 0.000<br>npc-2 0.042 0.025 0.068 -11.865 0.000<br>npc-2 0.043 0.350 0.862 7.333 0.000<br>pt-2 0.043 0.250 0.068 -11.865 0.000<br>nmar 0.613 0.750 0.862 7.333 0.000<br>pt-3 0.514 0.467 0.541 1.034 0.301<br>bass 0.043 0.325 0.464 -3.634 0.000<br>enka 0.651 0.596 0.702 5.237 0.000<br>enka 0.643 0.325 0.464 -3.634 0.000<br>enka 0.651 0.596 0.702 5.237 0.000<br>enka 0.326 0.446 0.372 -21.945 0.000<br>pt-1 0.013 0.750 0.862 7.3540 0.000<br>c 0.384 0.325 0.446 -3.634 0.000<br>enka 0.326 0.424 0.322 1.21.15 0.255<br>0.384 0.325 0.446 -3.634 0.000<br>enka 0.326 0.424 0.322 1.21.956 0.000<br>pterin 0.141 0.116 0.171 -15.960 0.000<br>enka 0.320 0.342 0.321 -1.115 0.265<br>0.000<br>0.782 0.762 0.001 1.21.986 0.000<br>0.782 0.762 0.001 1.21.986 0.000<br>0.782 0.762 0.001 1.21.986 0.000<br>0.782 0.762 0.001 2.1986 0.000<br>0.782 0.762 0.001 2.1986 0.000<br>0.782 0.762 0.001 2.1986 0.000<br>0.782 0.762 0.003 1.11.965 0.000<br>0.782 0.762 0.001 2.1986 0.000<br>0.782 0.762 0.003 1.11.965 0.000<br>0.782 0.762 0.001 2.1986 0.000<br>0.782 0.762 0.003 1.21.966 0.000<br>0.782 0.762 0.001 2.1986 0.000<br>0.782 0.762 0.003 1.21.986 0.000<br>0.782 0.762 0.003 1.21.986 0.000<br>0.782 0.762 0.001 2.1986 0.000<br>0.782 0.762 0.001 2.1986 0.000<br>0.782 0.762 0.001 2.1986 0.000<br>0.782 0.762 0.003 1.21.986 0.000<br>0.782 0.762 0.003 1.21.986 0.000<br>0.782 0.762 0.001 2.1986 0.000<br>0.782 0.762 0.001 2.1986 0.000<br>0.782 0.782 0.782 0.71.71.71.71.71.71.71.71.71.71.71.71.71.  |                   |        |         |       |       |       | Phipps                 |
| naša 0.207 0.190 0.225 -24.681 0.000<br>lombo 0.300 0.361 0.399 -11.947 0.000<br>puropoulos-1 0.926 0.876 0.396 8.751 0.000<br>puropoulos-2 0.537 0.463 0.510 0.992 0.326<br>puropoulos-2 0.537 0.463 0.500 0.434 -3653 0.000<br>singut 0.481 0.435 0.529 -0.770 0.442<br>usted 0.481 0.435 0.529 -0.770 0.442<br>usted 0.131 0.099 0.171 -11.703 0.000<br>npa-1 0.028 0.015 0.051 -11.057 0.000<br>npa-1 0.028 0.015 0.051 -11.057 0.000<br>npa-2 0.042 0.025 0.068 45.328 0.000<br>nmra 0.813 0.750 0.862 7.333 0.000<br>0.514 0.487 0.541 1.034 0.301<br>0.588 0.86 0.525 1.115 0.265<br>0.682 7.333 0.000<br>0.514 0.467 0.541 1.034 0.301<br>0.588 0.426 0.521 -1.115 0.265<br>0.680 0.428 0.326 0.466 -3.634 0.000<br>enka 0.651 0.598 0.702 5.237 0.000<br>modan 0.432 0.342 0.423 -5.490 0.000<br>c. 0.384 0.325 0.464 -3.634 0.000<br>c. 0.384 0.326 0.446 -3.634 0.000<br>c. 0.384 0.326 0.446 -3.634 0.000<br>c. 0.384 0.326 0.445 -1.395 0.000<br>0.782 0.762 0.801 2.1986 0.000<br>c. 0.384 0.326 0.446 -3.634 0.000<br>enka 0.326 0.446 -3.634 0.000<br>c. 0.384 0.342 0.423 0.546 0.000<br>c. 0.782 0.762 0.801 2.1986 0.000<br>c. 0.782 0.300 0.345 -9.495 0.000<br>c. 0.280 0.343 0.325 0.446 -3.634 0.000<br>c. 0.280 0.343 0.325 0.446 -3.634 0.000<br>c. 0.384 0.326 0.448 0.325 0.446 -3.634 0.000<br>c. 0.384 0.326 0.448 0.325 0.446 -3.634 0.000<br>c. 0.384 0.326 0.448 0.326 0.446 -3.634 0.000<br>c. 0.384 0.342 0.428 0.326 0.446 -3.634 0.000<br>c. 0.384 0.328 0.346 0.333 0.1396 0.000<br>c. 0.384 0.328 0.340 0.333 0.1396 0.000  | = -               |        |         |       |       |       | Parisotto              |
| lombo         0.380         0.361         0.399         -11.947         0.000           puropoulos-2         0.262         0.876         0.956         0.876         0.966         0.8751         0.000           puropoulos-2         0.537         0.463         0.610         0.982         0.326         0.600           puropoulos-3         0.360         0.292         0.434         -3.655         0.600           singuiti         0.481         0.435         0.529         -0.770         0.442           ntes         0.429         0.382         0.477         -2.886         0.000           npe-1         0.028         0.061         -11.067         0.000           npe-2         0.042         0.025         0.066         -11.865         0.000           nmura         0.613         0.750         0.442         0.227         0.000           nmura         0.614         0.487         0.541         1.034         0.301           bass         0.043         0.027         0.707         -2.104         0.000           uph         0.514         0.467         0.541         1.034         0.301           bass         0.042         0.027   |                   |        |         |       |       |       | Zhang                  |
| Duropoulos-1 0.926 0.876 0.956 8.751 0.000<br>Duropoulos-2 0.537 0.453 0.510 0.982 0.326<br>Duropoulos-3 0.360 0.292 0.434 -3.653 0.000<br>singut 0.481 0.435 0.529 -0.770 0.442<br>nets 0.429 0.382 0.477 -2.866 0.004<br>Uatedt 0.131 0.099 0.171 -11.703 0.000<br>npe-1 0.028 0.015 0.051 -11.067 0.000<br>npe-2 0.042 0.025 0.068 -11.865 0.000<br>npe-2 0.042 0.025 0.068 -13.828 0.000<br>mar 0.877 0.868 0.866 45.328 0.000<br>mar 0.813 0.750 0.862 7.333 0.000<br>0 0.514 0.487 0.541 1.034 0.301<br>Dass 0.043 0.027 0.070 -12.104 0.000<br>effica 0.651 0.596 0.702 5.237 0.000<br>effica 0.382 0.342 0.423 -5.490 0.000<br>c 0.384 0.325 0.446 -3.834 0.000<br>c 0.384 0.325 0.446 -3.834 0.000<br>c 0.782 0.762 0.801 1.1589 0.000<br>c 0.782 0.762 0.801 1.1589 0.000<br>c 0.782 0.762 0.801 1.1589 0.000<br>effica 0.366 0.418 0.574 -1.385 0.166<br>grife 0.141 0.116 0.514 -1.385 0.166<br>grife 0.148 0.514 -1.385 0.000<br>l 0.428 0.325 0.446 0.514 -1.385 0.000<br>l 0.466 0.418 0.514 -1.385 0.000<br>l 0.466 0.418 0.514 -1.385 0.000<br>l 0.466 0.518 0.514 -1.385 0.000<br>l 0.466 0.418 0.514 -1.385 0.000<br>l 0.466 0.418 0.514 -1.385 0.000<br>l 0.428 0.325 0.446 0.516 -1.385 0.000<br>l 0.428 0.325 0.443 0.516 0.000<br>l 0.428 0.325 0.443 0.516 0.000<br>l 0.428 0.325 0.443 0.514 -1.385 0.000<br>l 0.428 0.325 0.445 0.514 -1.385 0.000<br>l 0.428 0.325 0.443 0.514 -1.385 0.000<br>l 0.428 0.248 0.514 -1.385 0.000<br>l 0.428 0.328 0.342 0.433 0.318 0.000<br>l 0.428 0.428 0.514 -1.385 0.166<br>l 0.428 0.328 0.448 0.514 -1.315 0.000<br>l 0.428 0.248 0.248 0.431 0.556 0.400<br>l 0.428 0.248 0.248 0.431 0.556 0.400<br>l 0.428 0.248 0.248 0.433 0.000<br>l 0.428 0.248 0.438 0.348 0.000<br>l 0.428 0.248 0.438 0.348 0.000<br>l 0.428 0.248 0.248 0.431 0.556 0.000<br>l 0.428 0.248 0.250 0.448 0.000<br>l 0.448 0.418 0.514 0.514 0.514 0.000<br>l 0.448 0.428 0.428 0.438 0.448 0.000<br>l 0.448 0.428 0.438 0.448 0.000<br>l 0.448 0.428 0.438 0.448 0.000<br>l 0.448 0.448 0.514 0.514 0.514 0.000<br>l 0.448 0.428 0.428 0.438 0.448  | ■,                |        |         |       |       |       | Tanaka                 |
| putopedios-2         0.537         0.463         0.610         0.982         0.326           utopedios-2         0.360         0.226         0.434         -3.653         0.000           singuti         0.481         0.450         0.529         -0.770         0.442           othes         0.429         0.382         0.477         -2.866         0.004           ustedt         0.131         0.099         0.171         -11.703         0.000           npe-1         0.028         0.051         0.051         1.1067         0.000           npe-2         0.042         0.022         0.068         1.1865         0.000           nmra         0.613         0.750         0.686         45.328         0.000           nmra         0.614         0.486         0.526         0.000         0.000           nmra         0.651         0.596         0.702         5.237         0.000         0.000           utha         0.422         0.521         1.115         0.286         0.000         0.034         0.272         1.2144         0.000         0.024         0.226         0.014         0.000         0.034         0.027         1.2196         0.000   |                   |        |         |       |       |       |                        |
| singuz         0.481         0.435         0.529         -0.770         0.442           rks         0.429         0.382         0.477         -2.886         0.004           subedt         0.131         0.099         0.171         -11.703         0.000           nps-1         0.028         0.015         0.051         -11.067         0.000           nps-1         0.028         0.086         1.1865         0.000           nmg         0.877         0.886         0.886         45.328         0.000           nmg         0.613         0.750         0.682         7.333         0.000           nmax         0.651         0.596         0.702         5.237         0.000           enka         0.651         0.596         0.702         5.237         0.000           enka         0.651         0.596         0.702         5.237         0.000           colase         0.426         0.521         -1.115         0.265           ugh         0.473         0.426         0.521         -1.115         0.265           ugh         0.372         2.1965         0.000         1.001         1.001           colase         0.3   | +                 |        |         |       |       |       | Agouropoulos-2         |
| ntes 0.429 0.382 0.477 -2.886 0.004 usteat 0.131 0.099 0.171 -11.1703 0.000 npe-1 0.028 0.015 0.051 -11.067 0.000 npe-2 0.042 0.025 0.068 -11.855 0.000 mura 0.817 0.868 0.868 45.228 0.000 mura 0.813 0.750 0.862 7.833 0.000 mura 0.814 0.872 0.521 1.115 0.265 mura 0.430 0.22 0.443 -5.440 0.000 mura 0.473 0.428 0.521 1.115 0.265 0.0384 0.322 0.446 -3.634 0.000 mura 0.782 0.762 0.801 21.896 0.000 0.782 0.762 0.801 21.896 0.000 0.782 0.762 0.801 21.896 0.000 mura 0.141 0.116 0.171 -15.690 0.000 mura 0.431 0.116 0.171 -15.690 0.000 mura 0.431 0.275 0.945 0.166 mura 0.332 0.300 0.33 -1.944 0.000 mura 0.332 0.300 0.33 -9.495 0.000 mura 0.328 0.342 0.3105 0.000 mura 0.328 0.342 0.3105 0.000 mura 0.328 0.342 0.3105 0.000 mura 0.332 0.340 0.3105 0.000 mura 0.334 0.342 0.345 0.3105 0.000 mura 0.341 0.218 0.55 0.000 mura 0.334 0.345 0.3105 0.000 mura 0.334 0.345 0.3105 0.000 mura 0.334 0.345 0.3105 0.000 mura 0.341 0.518 0.519 mura 0.534 0.519 mura 0.534 0.534 0.55 mura  | <b>₽</b>          |        |         |       |       |       | Agouropoulos-3         |
| ustedt 0.131 0.099 0.171 -11.703 0.000<br>npe-1 0.028 0.015 0.051 -11.057 0.000<br>npe-2 0.042 0.025 0.068 -11.865 0.000<br>ng 0.877 0.868 0.866 45.328 0.000<br>mura 0.873 0.750 0.862 7.333 0.000<br>0.0514 0.487 0.541 1.034 0.301<br>0.0614 0.487 0.541 1.034 0.301<br>0.061 0.596 0.702 5.237 0.000<br>enka 0.651 0.596 0.702 5.237 0.000<br>ugh 0.473 0.426 0.521 -1115 0.255<br>0.384 0.325 0.446 -3.634 0.000<br>c 0.384 0.325 0.446 -3.634 0.000<br>c 0.380 0.342 0.423 5.490 0.000<br>0.782 0.762 0.801 21.986 0.000<br>0.782 0.782 0.782 0.713 0.782 0.7136 0.000<br>0.784 0.723 0.782 0.7136 0.000<br>0.784 0.723 0.7136 0.000<br>0.784 0.723 0.7136 0.000<br>0.784 0.723 0.7136 0.000<br>0.784 0.723 0.71305 0.000   | 1 1 5             |        |         |       |       |       | Musinguzi              |
| npe-1 0.028 0.015 0.051 -11.067 0.000<br>np-2 0.042 0.022 0.068 -11.865 0.000<br>mura 0.813 0.750 0.868 45.328 0.000<br>mura 0.813 0.750 0.862 7.833 0.000<br>0.814 0.487 0.541 1.034 0.301<br>bass 0.043 0.027 0.070 -12.104 0.000<br>emka 0.651 0.596 0.702 5.237 0.000<br>ugh 0.473 0.428 0.521 -1.115 0.265<br>1.0384 0.342 0.423 0.423 -5.400 0.000<br>b 0.382 0.342 0.423 -5.400 0.000<br>b 0.782 0.762 0.801 21.896 0.000<br>0.782 0.782 0.782 0.984 0.77 -77.194 0.000<br>0.800 0.000 0.000 0.000<br>0.782 0.000 0.000 0.000 0.000<br>0.782 0.000 0.000 0.000 0.000 0.000<br>0.782 0.000 0.000 0.000 0.000 0.000 0.000 0.000<br>0.782 0.0000 0.0000 0.000 0.000 0.000 0.000 0.000 0.  |                   |        |         |       |       |       | Boustedt               |
| ng 0.877 0.868 0.886 45.228 0.000<br>mara 0.813 0.750 0.862 7.33 0.000<br>n 0.514 0.487 0.541 1.034 0.301<br>bass 0.043 0.027 0.070 -12.104 0.000<br>menka 0.651 0.566 0.702 5.237 0.000<br>ugh 0.473 0.428 0.521 -1.115 0.265<br>to 0.384 0.342 0.423 -5.400 0.000<br>c 0.384 0.342 0.424 -3.634 0.000<br>b 0.782 0.762 0.801 21.896 0.000<br>0.782 0.772 0.71 0.71 1.5560 0.000<br>0.782 0.713 0.7111 0.7111 0.7111 0.711 0.71111 0.71111 0.7111 0.7111 0.7111 0.71111 0.7111   |                   |        |         |       |       |       | Tonpe-1                |
| mura 0.813 0.750 0.862 7.833 0.000<br>v 0.514 0.467 0.541 1.034 0.301<br>bass 0.043 0.027 0.070 -12.104 0.000<br>emka 0.651 0.596 0.702 5.237 0.000<br>ugh 0.473 0.428 0.521 -1.115 0.265<br>rdana 0.382 0.342 0.423 -5.490 0.000<br>c 0.384 0.322 0.423 -5.490 0.000<br>to 0.380 0.348 0.372 -21.956 0.000<br>0.782 0.466 0.416 0.514 0.000<br>ren 0.141 0.116 0.171 -15.990 0.000<br>ren 0.141 0.116 0.514 -1.365 0.166<br>ugne 0.018 0.009 0.033 -11.964 0.000<br>ah 0.322 0.300 0.365 -9.495 0.000  |                   |        |         |       |       |       | Tonpe-2                |
| 0.514         0.467         0.541         1.034         0.301           bass         0.043         0.027         0.070         12.104         0.000           enka         0.651         0.596         0.702         5.237         0.000           ugh         0.473         0.429         0.521         -1.115         0.286           ugh         0.473         0.429         0.521         -1.115         0.286           ugh         0.473         0.322         0.446         -3.634         0.000           c         0.384         0.322         0.446         -3.634         0.000           c         0.384         0.322         0.446         -3.634         0.000           c         0.384         0.372         -21.965         0.000   | 1 1 1             |        |         |       |       |       | Wang                   |
| bass         0.043         0.027         0.070         -12.104         0.000           enka         0.651         0.596         0.702         5.237         0.000           ugh         0.473         0.426         0.521         1.115         0.265           dana         0.382         0.342         0.423         -5.490         0.000           c         0.384         0.322         0.496         0.000         9           to         0.360         0.344         0.372         -21.956         0.000           ngla         0.210         0.177         0.247         -12.194         0.000           ren         0.141         0.116         0.711         -15.590         0.000           up         0.466         0.418         0.514         -1.355         0.166           up         0.466         0.099         0.033         -11.964         0.000           an         0.332         0.305         0.305         -9.495         0.000  | 1 1 1             |        |         |       |       |       | Wu                     |
| ugh 0.473 0.428 0.521 1.115 0.265<br>ndana 0.382 0.342 0.423 -5.490 0.000<br>c. 0.384 0.326 0.446 -3.634 0.000<br>0.782 0.762 0.846 0.372 -21956 0.000<br>0.782 0.762 0.801 2.1988 0.000<br>ngla 0.210 0.177 0.247 -12.194 0.000<br>ren 0.141 0.116 0.711 -15.690 0.000<br>l 0.466 0.418 0.514 -1.335 0.166<br>gape 0.016 0.099 0.033 -11.944 0.000<br>ah 0.332 0.300 0.355 -9.495 0.000<br>ah 0.321 0.253 0.310 -13.105 0.000  |                   |        |         |       |       |       | Abbass                 |
| ndana 0.382 0.342 0.423 0.540 0.000 c 0.000 c 0.384 0.325 0.446 -3.634 0.000 c 0.000 c 0.384 0.325 0.446 -3.634 0.000 c 0.000 c 0.382 0.372 -21.956 0.000 c 0.782 0.762 0.801 21.988 0.000 c 0.782 0.762 0.801 21.988 0.000 c 0.782 0.762 0.911 0.156 0.000 c 0.000 c 0.384 0.332 0.333 -11.944 0.000 c 0.000 c 0.333 -11.944 0.000 c 0.000 c 0.333 -11.964 0.000 c 0.332 c 0.303 -11.964 0.000 c 0.333 -11.  |                   | 0.000  | 5.237   | 0.702 | 0.596 | 0.651 | Goenka                 |
| c         0.384         0.325         0.446         -3.634         0.000           to         0.380         0.348         0.372         -21.966         0.000           0.782         0.762         0.762         0.762         0.762         0.762         0.762           orgla         0.210         0.177         0.247         -12.194         0.000         1           orgla         0.141         0.116         0.717         -15.690         0.000         1         1           ordef         0.456         0.418         0.514         -1.385         0.166         1         1         1         1         1         0.900         1         1         0.466         0.418         0.514         -0.000         1         1         0.466         0.418         0.514         -1.385         0.166         1         1         1         0.416         1         0.90         0.33         -1.945         0.000         1         1         1         0.425         0.210         0.255         0.210         1         1         1         0.000         1         1         1         1         0.000         1         1         1         1         1         1 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Chugh</td>   |                   |        |         |       |       |       | Chugh                  |
| to 0.380 0.348 0.372 -21.956 0.000<br>0.782 0.762 0.801 21.996 0.000<br>ren 0.141 0.116 0.717 -12.194 0.000<br>10.466 0.418 0.514 -1.385 0.166<br>10.466 0.418 0.514 -1.385 0.166<br>10.332 0.300 0.335 -9.495 0.000<br>ah 0.322 0.253 0.310 -1.3105 0.000  |                   |        |         |       |       |       | Vandana<br>Igic        |
| 0.782 0.762 0.801 21.898 0.000<br>ngla 0.210 0.177 0.247 -12.194 0.000<br>ven 0.141 0.116 0.171 -15.690 0.000<br>0.466 0.418 0.514 -1.365 0.166<br>gne 0.168 0.090 0.33 -11.994 0.000<br>ah 0.332 0.300 0.365 -9.495 0.000<br>ah 0.3281 0.253 0.310 -1.3105 0.000   |                   |        |         |       |       |       | Kato                   |
| ven 0.141 0.116 0.171 -15.690 0.000<br>I 0.465 0.418 0.514 -1.325 0.165<br>igne 0.018 0.009 0.033 -11.964 0.000<br>ah 0.332 0.300 0.365 -9.495 0.000<br>an 0.281 0.253 0.310 1.3105 0.000   |                   | 0.000  | 21.898  | 0.801 | 0.762 | 0.782 | u                      |
| I 0.466 0.418 0.514 -1.385 0.166<br>gme 0.018 0.009 0.033 -11.944 0.000<br>ah 0.332 0.300 0.365 -9.495 0.000<br>an 0.281 0.253 0.310 -13.105 0.000  | _•                |        |         |       |       |       | Mangla                 |
| igne 0.016 0.009 0.033 -11.954 0.000 an 0.332 0.300 0.365 -9.495 0.000 an 0.322 0.300 0.365 -9.495 0.000 ■  |                   |        |         |       |       |       | Owen<br>Pal            |
| ah 0.332 0.300 0.365 -9.495 0.000 an 0.281 0.253 0.310 -13.105 0.000  | 1 6 7             |        |         |       |       |       | Wagne                  |
|   |                   | 0.000  | -9.495  | 0.365 |       |       | Shah                   |
|   |                   |        |         |       | 0.253 | 0.281 | Yuan                   |
| ng 0.714 0.690 0.736 16.041 0.000<br>ssignan 0.391 0.352 0.432 -5.133 0.000   |                   | 0.000  | 16.041  | 0.736 | 0.690 | 0.714 | Jiang                  |
|   |                   |        |         |       |       |       | Massignan<br>Koya      |
|   | I I 74            |        |         |       |       |       | Mothupi                |
| htb 0.892 0.847 0.925 10.361 0.000  | I I _T            | 0.000  | 10.361  | 0.925 | 0.847 | 0.892 | Alkhtib                |
|   |                   |        |         |       |       |       | Henry                  |
|   | ■   _             |        |         |       |       |       | Sacic<br>Al-Meedani    |
|   | I I 🛓 🖥           |        |         |       |       |       | Elidrissi              |
| pal 0.273 0.234 0.314 -9.548 0.000  | I I ■ Γ           | 0.000  | -9.548  | 0.314 | 0.234 | 0.273 | Gopal                  |
| 0.462 0.416 0.508 -1.633 0.102  | − ◀               | 0.102  |         |       |       |       |                        |
| -1.00 -0.50 0.00 0.50   | -0.50 0.00 0.50   | -1.00  |         |       |       |       |                        |
|   |                   |        |         |       |       |       |                        |
| Favours A Favours B   | Vours A Favours B |        |         |       |       |       |                        |
|   |                   |        |         |       |       |       |                        |
|   |                   |        |         |       |       |       |                        |
|   |                   |        |         |       |       |       |                        |
|   |                   |        |         |       |       |       | 15                     |
| A. (  |                   |        | i       |       |       | ~     |                        |
| /leta Analysis  |                   |        | S       | vsi   | าลเ   | Ar    | Meta                   |



nutritional habits and behaviors, and lifestyle [144]. The effects of parents' lack of awareness of their children's tooth decay status as well as neglect and attention discrimination can also be well documented

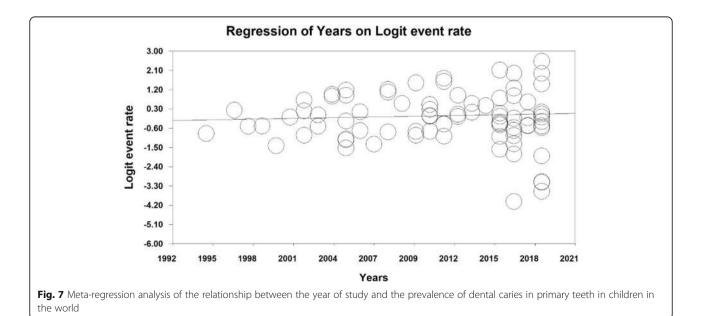
in the study of Nag et al. [160], suggesting that in the age group of 6 to 18 years, caries rates were higher in girls than in boys, as girls are more neglected by parents than boys. Although there has been no difference

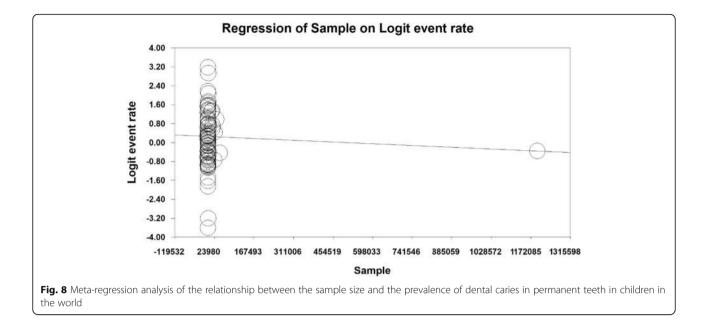


in the prevalence rate of both sexes in the current systematic study, terms of access to health services and lack of parental awareness of and attention to children's dental caries are known as the most important factors in its development [2], so discrimination and inequality in the upbringing of children in the family can also multiply the impact of such a situation.

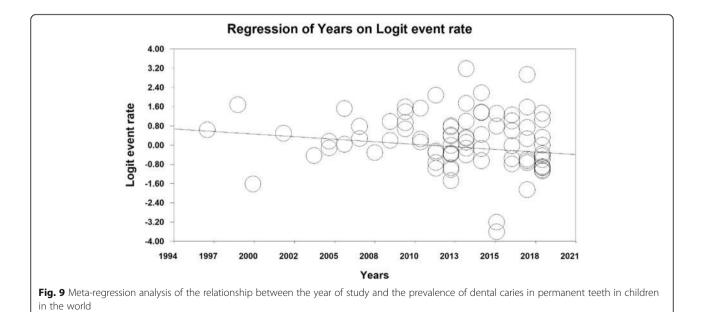
In the present meta-analysis study, the prevalence of dental caries in primary and permanent teeth in different continents is presented in Table 3 and Fig. 10, which was higher in the African continent and secondarily in the Asian continent.

According to the World Health Organization's Healthy People Plan, 90% of children between the ages of 5 and 6 should be free of tooth decay by 2010. However, according to the findings of this study which were based on the reviews performed in the studies searched, the prevalence of dental caries in children in most countries was found to be very high. Such a situation gives rise to worrying conditions in terms of tooth decay in adulthood and will also





impose enormous tooth repair costs on the country's health sector. Such a situation in the country, in addition to what has been said, as well as conditions such as inequality in access to health care services, inequality in developmental and economic situation in different countries and different parts of countries may indicate that the lack of awareness of the health and preservation of primary teeth in all families with different socioeconomic status has been considered a serious problem [3] and a barrier to the provision of preventive and health services. Families and parents should know that child dental care must start from the mother's pregnancy; children born to mothers with multiple dental caries are more likely to develop caries in the later stages of their lives. Cariogenic bacteria are usually transferred through the use of a spoon or a bottle of milk from the mother's moth to the child's mouth for the first time, so breast feeding should be avoided as much as possible during the baby's sleep. Regular dental appointments should be provided from the beginning of the baby's primary teeth eruption, especially with the eruption of the first



| Tooth type              | continents | Number of articles | Sample Size | l <sup>2</sup> | Egger Test | Prevalence %             |
|-------------------------|------------|--------------------|-------------|----------------|------------|--------------------------|
| Caries in primary teeth | Asia       | 50                 | 54,680      | 99.3           | 0.756      | 52.6 (95% Cl: 46.7–58.5) |
|                         | Europe     | 10                 | 9977        | 98.4           | 0.152      | 21.4 (95% Cl: 15.3–29.1) |
|                         | America    | 14                 | 6825        | 98.7           | 0.742      | 45.8 (95% Cl: 34.2–58)   |
|                         | Africa     | 5                  | 3004        | 95.5           | 0.220      | 53.1 (95% Cl: 44.3–61.7) |
|                         | Australia  | 3                  | 6472        | 98.3           | 0.296      | 28.5 (95% Cl: 20.3–38.5) |
| Permanent dental caries | Asia       | 50                 | 1,334,133   | 99.8           | 0.284      | 58.8 (95% Cl: 53.4–64)   |
|                         | Europe     | 22                 | 115,141     | 99.8           | 0.175      | 44.1 (95% Cl: 36.1–52.5) |
|                         | America    | 7                  | 5009        | 98.2           | 0.763      | 48.9 (95% Cl: 37.6–60.3) |
|                         | Africa     | 5                  | 2794        | 99.3           | 0.220      | 58.9 (95% Cl: 29.4–83.1) |
|                         | Australia  | 1                  | 612         | _              | -          | 54.9 (95% Cl: 50.9–58.8) |

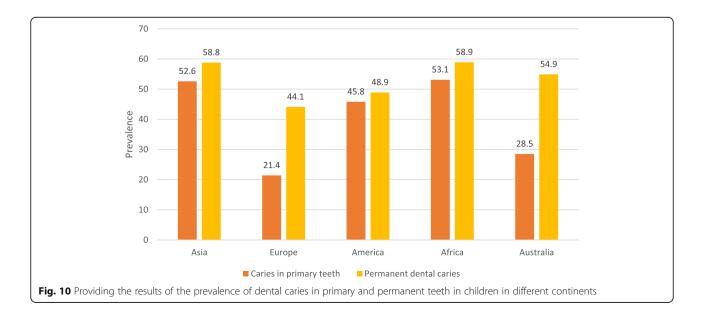
Table 3 Investigating the prevalence of dental caries in primary and permanent teeth in children in different continents

permanent tooth, first molar tooth or the 6the tooth. The tooth develops immediately after the last primary tooth at the age of six and is most likely to be decayed. The American Academy of Pediatric Dentistry, the American Dental Association, and the American Academy of General Dentistry all recommend making sure to see a dentist 6 months after the eruption of teeth in children, before the age of one year's [161-166]. One of the most important and available measures to prevent caries, especially primary teeth in children, is performing dental procedures such as fissure sealant and fluoride therapy. In the fissure sealant method, deep grooves in the surface of the tooth are covered with a thin layer of toothcolored material, thereby preventing the spread of cariogenic bacteria in tooth grooves. Other methods are caries prevention [167]and[168].

Given the high prevalence of primary and permanent dental caries in children worldwide, it is recommended that providing educational programs and interventions in primary and permanent dental health care especially for mothers, nurses, and child educators be of special interest to health services policy-makers and providers. Planning to provide educational programs and inexpensive dental and oral health services as well as ease of access to such services for children by the health system of countries is noted as well.

## Strength and limitation

The most important strength of this study is that it has been studied for the first time in the world, includes all data sources and high-quality studies, and also analysis based on different continents for the use of the World Health Organization. The most important limitation of the present study is inaccessibility to the full text of the articles, incomplete search, and poor quality of some studies, as well as restricted search based on Persian and English languages.



| Kalantari<br>Abedini<br>Hematyar<br>Nabipour<br>Pahlavani | Point       | Lower          | linner         |                  |                | Cumulative event rate (95% CI) |  |      |  |
|---|-------------|----------------|----------------|------------------|----------------|--------------------------------|--|------|--|
| Abedini<br>Hematyar<br>Nabipour<br>Pahlavani              |             | limit          | Upper<br>limit | Z-Value          | p-Value        |                                |  |      |  |
| Abedini<br>Hematyar<br>Nabipour<br>Pahlavani              | 0.635       | 0.587          | 0.681          | 5.332            | 0.000          | Ĩ.                             |  | 1    |  |
| Nabipour<br>Pahlavani                                     | 0.563       | 0.416          | 0.700          | 0.835            | 0.404          |                                |  | 6    |  |
| Pahlavani   | 0.586       | 0.485          | 0.681          | 1.666            | 0.096          |                                |  | 2    |  |
|   | 0.623       | 0.517          | 0.718          | 2.262 0.758      | 0.024          |                                |  |      |  |
| Amiri   | 0.629       | 0.465          | 0.768          | 1.546            | 0.122          |                                |  | -    |  |
| Ajami   | 0.651       | 0.512          | 0.767          | 2.130            | 0.033          |                                |  | -    |  |
| Javadinezhad<br>Karimi                                    | 0.666       | 0.540 0.571    | 0.772          | 2.549 3.085      | 0.011          |                                |  | E    |  |
| Amanlou   | 0.669       | 0.558          | 0.765          | 2.920            | 0.002          |                                |  |      |  |
| Toutouni  | 0.664       | 0.561          | 0.754          | 3.064            | 0.002          |                                | - I - <b>F</b>   | F    |  |
| Bagherian   | 0.652       | 0.554          | 0.739          | 2.995            | 0.003          |                                |  | -    |  |
| Mohebbi<br>Ramos-Gomez                                    | 0.628       | 0.522 0.497    | 0.724          | 2.345            | 0.019          |                                |  |      |  |
| Rosenblatt  | 0.584       | 0.472          | 0.687          | 1.472            | 0.141          |                                |  |      |  |
| Rajab   | 0.577       | 0.472          | 0.676          | 1.440            | 0.150          |                                | + <b>_</b>   |      |  |
| Douglass<br>Hallett1                                      | 0.565       | 0.464 0.458    | 0.662          | 1.261            | 0.207          |                                |  |      |  |
| Sayegh  | 0.555       | 0.450          | 0.647          | 1.110            | 0.267          |                                |  |      |  |
| Hallett   | 0.551       | 0.467          | 0.633          | 1.187            | 0.235          |                                | - F  |      |  |
| Peressini   | 0.534       | 0.450          | 0.615          | 0.793            | 0.428          |                                |  |      |  |
| Chadwick<br>Schroth                                       | 0.519       | 0.437          | 0.600          | 0.453            | 0.651 0.624    |                                | 1 1  |      |  |
| Tsal  | 0.522       | 0.447          | 0.596          | 0.561            | 0.575          |                                | - I - I  |      |  |
| Mahejabeen  | 0.522       | 0.452          | 0.591          | 0.624            | 0.533          | 1                              | <b>₽</b>   |      |  |
| Du<br>Ferro   | 0.523       | 0.459          | 0.588          | 0.708            | 0.479          | 1                              | <u>*</u>   |      |  |
| Ferro<br>Schroth1   | 0.512       | 0.442          | 0.582          | 0.339            | 0.735          | 1                              | 1 1  |      |  |
| Wyne  | 0.529       | 0.458          | 0.598          | 0.797            | 0.425          | 1                              | - F  |      |  |
| Lawrence  | 0.536       | 0.465          | 0.605          | 1.000            | 0.317          | 1                              | 1 <del>2</del>   |      |  |
| Vazquez-Nava<br>Jigjid                                    | 0.522       | 0.451 0.458    | 0.593          | 0.612            | 0.540          | 1                              | <mark>╡<sup>┿┯┯┯┯┯┯┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿┿</sup></mark> |      |  |
| Senesombath   | 0.540       | 0.469          | 0.609          | 1.096            | 0.273          |                                | - E  |      |  |
| Slabsinskiene   | 0.539       | 0.470          | 0.606          | 1.107            | 0.268          |                                | -  |      |  |
| Zhou  | 0.531       | 0.464 0.463    | 0.598          | 0.905            | 0.366          |                                | 1 <u>t</u>   |      |  |
| Rajshekar<br>Ozer   | 0.528       | 0.463          | 0.593          | 0.845            | 0.398          |                                | 1 1  |      |  |
| LI1   | 0.529       | 0.466          | 0.590          | 0.900            | 0.368          |                                |  |      |  |
| Kumarihamy  | 0.523       | 0.462          | 0.584          | 0.737            | 0.461          |                                | 1 ±  |      |  |
| Prakash<br>Singh  | 0.516       | 0.455          | 0.577          | 0.525            | 0.599          |                                | 1 1  |      |  |
| Perera  | 0.509       | 0.450          | 0.567          | 0.290            | 0.772          |                                |  |      |  |
| Phipps  | 0.512       | 0.456          | 0.567          | 0.403            | 0.687          |                                | - E  |      |  |
| Parisotto<br>Zhang  | 0.509 0.518 | 0.454 0.463    | 0.564 0.573    | 0.317 0.646      | 0.752 0.518    |                                | 1 1  |      |  |
| Tanaka  | 0.518       | 0.454          | 0.567          | 0.361            | 0.518          |                                | - I I  |      |  |
| Colombo   | 0.508       | 0.452          | 0.563          | 0.270            | 0.787          |                                |  |      |  |
| Agouropoulos-1  | 0.519       | 0.464          | 0.574          | 0.685            | 0.494          |                                | 1 E  |      |  |
| Agouropoulos-2<br>Agouropoulos-3                          |             | 0.465          | 0.574          | 0.706            | 0.480          |                                | - I I  |      |  |
| Musinguzi   | 0.516       | 0.463          | 0.568          | 0.580            | 0.562          |                                | - E  |      |  |
| Montes  | 0.514       | 0.462          | 0.566          | 0.525            | 0.600          |                                | ±  |      |  |
| Boustedt<br>Tonpe-1                                       | 0.505       | 0.453 0.439    | 0.557          | 0.189            | 0.850          |                                | 1 1  |      |  |
| Tonpe-2   | 0.478       | 0.426          | 0.530          | 0.836-           | 0.403          |                                |  |      |  |
| Wang  | 0.487       | 0.429          | 0.545          | 0.452-           | 0.651          |                                | •  |      |  |
| Nomura<br>Wu  | 0.493       | 0.438          | 0.551          | 0.234-0.225-     | 0.815          |                                | 1 <u>±</u>   |      |  |
| Abbass  | 0.481       | 0.426          | 0.537          | 0.652-           | 0.514          |                                |  |      |  |
| Goenka  | 0.484       | 0.429          | 0.540          | 0.556-           | 0.578          |                                |  |      |  |
| Chugh   | 0.484       | 0.430          | 0.539          | 0.569-           | 0.569          |                                | 1 1  |      |  |
| Vandana<br>Igic   | 0.482       | 0.429 0.427    | 0.537          | 0.637-<br>0.701- | 0.483          |                                | 1 1  |      |  |
| Kato  | 0.479       | 0.427          | 0.531          | 0.797-           | 0.425          |                                |  |      |  |
| Li III  | 0.484       | 0.432          | 0.536          | 0.595-           | 0.552          | 1                              | <b>±</b>   |      |  |
| Mangla<br>Owen  | 0.479       | 0.428          | 0.531          | 0.779-           | 0.436          | 1                              | 1 1  |      |  |
| Pal   | 0.473       | 0.421          | 0.525          | 1.036-           | 0.300          | 1                              | - I - I  |      |  |
| Wagne   | 0.460       | 0.410          | 0.512          | 1.516-           | 0.129          | 1                              |  |      |  |
| Shah  | 0.458       | 0.408          | 0.509          | 1.606-           | 0.108          |                                |  |      |  |
| Yuan<br>Jiang   | 0.456       | 0.406          | 0.506          | 1.724-           | 0.085          |                                |  |      |  |
| Massignan   | 0.458       | 0.409          | 0.508          | 1.638-           | 0.101          |                                |  |      |  |
| Koya  | 0.458       | 0.410          | 0.507          | 1.690-           | 0.091          |                                |  |      |  |
| Mothupi   | 0.458       | 0.411          | 0.507          | 1.691-           | 0.091          |                                |  |      |  |
| Alkhtib<br>Henry  | 0.466       | 0.418 0.418    | 0.514          | 1.401-           | 0.161<br>0.146 |                                | 1 1  |      |  |
| Sacic   | 0.460       | 0.414          | 0.508          | 1.648-           | 0.099          |                                |  |      |  |
| Al-Meedani  | 0.463       | 0.417          | 0.510          | 1.531-           | 0.126          |                                | -  |      |  |
| Elidrissi<br>Gopal  | 0.464       | 0.418 0.416    | 0.511 0.508    | 1.514-           | 0.130          |                                | 1 1  |      |  |
| Gopai   | 0.462       | 0.416          | 0.508          | 1.633-           | 0.102          |                                |  |      |  |
|   |             |                |                | 11000            | 1002           | -0.50                          | 0.00 0.50  | 1.00 |  |
|   |             |                |                |                  |                |                                |  |      |  |
|   |             |                |                |                  |                | Favours A                      | Favours B  |      |  |
|   |             |                |                |                  |                |                                |  |      |  |
|   |             |                |                |                  |                |                                |  |      |  |
|   |             |                |                |                  |                |                                |  |      |  |
| 55 C  |             |                |                |                  |                |                                |  |      |  |
|   |             | a constanti di | S              |                  |                |                                |  |      |  |
| Meta  | ιΔ          | na             | VS             | IS               |                |                                |  |      |  |

| Providenci Pr  | Study name           | ne Cumulative statistics Cumulative event rate (95% CI) |       |       |       |       |      |           |                   |       |
|--|----------------------|---|-------|-------|-------|-------|------|-----------|-------------------|-------|
| Name       No       <  |                      | Lower Upper<br>Point limit limit Z-Value p-Value        |       |       |       |       |      |           |                   |       |
| Markan <p< td=""><td>Aahiahi</td><td>0.663</td><td>0.649</td><td>0.677</td><td></td><td></td><td>12</td><td>1</td><td>1 1 =</td><td>т</td></p<>   | Aahiahi              | 0.663   | 0.649 | 0.677 |       |       | 12   | 1         | 1 1 =             | т     |
| Image of the state of the   |                      |   |       |       |       |       |      |           |                   |       |
| Andream N,   |                      |   |       |       |       |       |      |           | - I- <del>-</del> | 8     |
| mini ni   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   | Yousofi              | 0.778   | 0.703 | 0.838 | 6.240 | 0.000 |      |           |                   | 6 I - |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   |                      |   |       |       |       |       |      |           |                   | 4     |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   |                      | 0.742   |       |       | 3.877 |       |      |           |                   | 4     |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   |                      |   |       |       |       |       |      |           |                   | ° 1   |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   | Mohd Nor             | 0.685   | 0.576 | 0.777 | 3.224 | 0.001 |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   |                      | 0.600   | 0.499 |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   | Alhabdan             | 0.631   | 0.539 | 0.714 | 2.776 | 0.006 |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.578 1.4283 0.207<br>Outis-2 0.538 0.484 0.578 1.428 0.145<br>Outis-2 0.538 0.494 0.528 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>1.00 .0.50 0.000 0.50 1.00   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.216<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.538 0.494 0.552 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>Dissa 0.500 0.575 1.951 0.051<br>Dissa 0.500 0.575 Dissa 0.510<br>Dissa 0.500 0.575 Dissa Diss   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.219<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.538 0.494 0.558 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.051<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Dissar 0.538 0.500 0.575 1.951 0.051<br>Dissar 0.538 0.500 0.575 0.951 0.051 Dissar 0.550 0.557 Dissar 0.550 Di | Dutra                |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.219<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.538 0.494 0.558 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.051<br>Mestriner 0.537 0.489 0.575 1.870 0.051<br>Dissar 0.538 0.500 0.575 1.951 0.051<br>Dissar 0.538 0.500 0.575 0.951 0.051 Dissar 0.550 0.557 Dissar 0.550 Di | Al-Akwa              | 0.582   | 0.515 | 0.647 | 2.380 | 0.017 |      |           |                   | 1     |
| Suberdar 0.529 0.483 0.573 1.231 0.219<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.538 0.494 0.558 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.219<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.538 0.494 0.558 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051   |                      |   |       |       |       |       |      |           | 1                 |       |
| Suberdar 0.529 0.483 0.573 1.231 0.219<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.538 0.494 0.558 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051   | Dobbiani-1           | 0.579   | 0.517 | 0.639 | 2.497 | 0.013 |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.219<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.538 0.494 0.558 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.800 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.769 0.072<br>Bissar 0.539 0.496 0.583 1.769 0.072<br>Schulte 0.538 0.496 0.583 1.769 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.051<br>Mestriner 0.537 0.498 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051  | Kim                  | 0.563   | 0.504 | 0.620 |       | 0.038 |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.769 0.072<br>Bissar 0.539 0.496 0.583 1.769 0.072<br>Schulte 0.538 0.496 0.583 1.769 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.051<br>Mestriner 0.537 0.498 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.769 0.072<br>Bissar 0.539 0.496 0.583 1.769 0.072<br>Schulte 0.538 0.496 0.583 1.769 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.051<br>Mestriner 0.537 0.498 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.533 0.489 0.578 1.848 0.145<br>Outis-2 0.533 0.494 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Brown 0.540 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.061<br>Mestriner 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           | - F               |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.538 0.494 0.558 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Bissar 0.539 0.496 0.583 1.769 0.072<br>Bissar 0.539 0.496 0.583 1.769 0.072<br>Schulte 0.538 0.496 0.582 1.800 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051   |                      |   |       |       |       |       |      |           | - E               | - I   |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.533 0.489 0.578 1.848 0.145<br>Outis-2 0.533 0.494 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Brown 0.540 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.061<br>Mestriner 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           | 1 1               |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.538 0.494 0.558 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Bissar 0.539 0.496 0.583 1.769 0.072<br>Bissar 0.539 0.496 0.583 1.769 0.072<br>Schulte 0.538 0.496 0.582 1.800 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051   |                      |   |       |       |       |       |      |           | - E               | - I   |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.533 0.489 0.578 1.848 0.145<br>Outis-2 0.533 0.494 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Brown 0.540 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.061<br>Mestriner 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  | Goel-2               | 0.522   |       |       | 0.779 |       |      |           | - F               |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.800 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           | 1 E               |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.800 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  | Arora<br>Sukhabogi-1 |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.533 0.489 0.578 1.848 0.145<br>Outis-2 0.533 0.494 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Brown 0.540 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.061<br>Mestriner 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           | - I - E           |       |
| Suberdar 0.529 0.484 0.573 1.231 0.218<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.533 0.489 0.578 1.848 0.145<br>Outis-2 0.533 0.494 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Brown 0.540 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.061<br>Mestriner 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           | 1 E               |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.800 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.800 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  | Sofola               |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.219<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.538 0.494 0.558 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.800 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           | 1 E               |       |
| Suberdar 0.529 0.483 0.573 1.231 0.219<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.538 0.494 0.558 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.800 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  | Riziwaguli           | 0.524   | 0.476 | 0.572 | 0.993 | 0.320 |      |           | - E               |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.800 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           | 1 E               |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.800 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.800 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           | - I - E           |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.800 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  | Koposova             |   |       | 0.577 | 1.225 | 0.221 |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.800 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           | 1 1               |       |
| Suberdar 0.529 0.483 0.573 1.231 0.219<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.538 0.494 0.558 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051   |                      |   |       |       |       |       |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.218<br>Dulis-1 0.523 0.484 0.574 1.283 0.207<br>Dulis-1 0.533 0.489 0.578 1.458 0.145<br>Dulis-2 0.533 0.489 0.578 1.848 0.093<br>Jamelii 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.800 0.051<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051  | Shailee-1            | 0.523   | 0.477 | 0.568 | 0.969 | 0.333 |      |           |                   |       |
| Suberdar 0.529 0.483 0.573 1.231 0.219<br>Outis-1 0.523 0.484 0.574 1.283 0.207<br>Outis-1 0.533 0.489 0.578 1.458 0.145<br>Outis-2 0.538 0.494 0.558 1.804 0.071<br>Kanagaratham 0.541 0.496 0.585 1.804 0.071<br>Kanagaratham 0.541 0.496 0.583 1.799 0.072<br>Bissar 0.539 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.583 1.799 0.072<br>Schulte 0.538 0.496 0.575 1.870 0.061<br>Mestriner 0.537 0.499 0.575 1.870 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051   |                      |   |       |       |       |       |      |           | E E               |       |
| Shekar         0.529         0.484         0.574         1.283         0.207           Oulis-1         0.533         0.449         0.578         1.458         0.093           Jamelli         0.533         0.449         0.578         1.458         0.093           Jamelli         0.541         0.490         0.575         1.844         0.071           Kanagaratimi         0.541         0.497         0.584         0.068           Bissar         0.539         0.496         0.583         1.799         0.072           Moreira         0.538         0.496         0.582         1.800         0.072           Schulte         0.538         0.496         0.575         1.870         0.071           Moreira         0.537         0.496         0.575         1.800         0.072           Schulte         0.538         0.496         0.575         1.800         0.061           Mestimer         0.537         0.499         0.575         1.951         0.051           D.538         0.500         0.575         1.951         0.051         1.00           Mestimer         0.538         0.500         0.575         1.951         0.051 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td>   |                      |   |       |       |       |       |      |           |                   | 1     |
| Oulis-1 0.533 0.489 0.578 1.458 0.145<br>Oulis-2 0.533 0.449 0.578 1.458 0.145<br>Oulis-2 0.533 0.494 0.555 1.604 0.071<br>Xanagaratnam 0.541 0.497 0.584 1.824 0.068<br>Bissar 0.539 0.496 0.583 1.769 0.077<br>Ferro 0.540 0.496 0.583 1.769 0.072<br>Schulte 0.538 0.499 0.576 1.998 0.058<br>Paredes 0.537 0.498 0.575 1.870 0.061<br>Mestriner 0.533 0.409 0.575 1.851 0.051<br>0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051<br>Traebert 0.538 0.500 0.575 1.951 0.051  |                      |   |       |       |       |       |      |           | 5                 | 1     |
| Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>.1.00 .0.50 0.00 0.50 1.00<br>Favours A Favours B   | Oulis-1              | 0.533   | 0.489 | 0.578 | 1.458 | 0.145 |      |           |                   |       |
| Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>.1.00 .0.50 0.00 0.50 1.00<br>Favours A Favours B   |                      |   |       |       |       |       |      |           |                   |       |
| Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>.1.00 .0.50 0.00 0.50 1.00<br>Favours A Favours B   |                      |   |       |       |       |       |      |           |                   |       |
| Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>.1.00 .0.50 0.00 0.50 1.00<br>Favours A Favours B   | Bissar               | 0.539   | 0.496 | 0.583 | 1.769 | 0.077 |      |           |                   |       |
| Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>.1.00 .0.50 0.00 0.50 1.00<br>Favours A Favours B   |                      |   |       |       |       |       |      |           |                   |       |
| Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>.1.00 -0.50 0.00 0.50 1.00<br>Favours A Favours B   |                      |   |       |       |       |       |      |           |                   |       |
| Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>.1.00 -0.50 0.00 0.50 1.00<br>Favours A Favours B   |                      |   |       |       |       |       |      |           |                   |       |
| Traebert 0.538 0.500 0.575 1.951 0.051<br>0.538 0.500 0.575 1.951 0.051<br>.1.00 .0.50 0.00 0.50 1.00<br>Favours A Favours B   | Mestriner            |   |       | 0.575 | 1.884 | 0.060 |      |           |                   |       |
| -1.00 -0.50 0.00 0.50 1.00<br>Favours A Favours B  | Traebert             |   |       |       |       |       |      |           |                   |       |
| Favours A Favours B  |                      | 0.538   | 0.500 | 0.575 | 1.951 | 0.051 | 1.00 | 0.50      |                   | 1.00  |
|  |                      |   |       |       |       |       | 1.00 | 0.50      | 0.00              | 1.00  |
| <br>Meta Δnalvsis  |                      |   |       |       |       |       |      | Favours A | Favours B         |       |
| <br>Meta Δnalvsis  |                      |   |       |       |       |       |      |           |                   |       |
| Meta Analysis  |                      |   |       |       |       |       |      |           |                   |       |
| Meta Δnalvsis  |                      |   |       |       |       |       |      |           |                   |       |
| Meta Analysis  |                      |   |       |       |       |       |      |           |                   |       |
| Meta Analysis  |                      |   |       |       |       |       |      |           |                   |       |
|  |                      |   |       |       |       |       |      |           |                   |       |

## Conclusion

The results of this study showed that the prevalence of dental caries in primary and permanent teeth in children in the world was found to be high. Therefore, appropriate strategies should be implemented to improve the aforementioned situation and to troubleshoot and monitor at all levels by providing feedback to hospitals. Also, the prevalence of dental caries in primary and permanent teeth in children of Africa is higher than other continents and requires special attention of the World Health Organization to this continent in improving the oral health of children. These strategies can include providing educational programs to parents, periodic dental care for children, and fluoride therapy in childhood for the African continent.

#### Abbreviations

ECC: Early Childhood Caries; WHO: World Health Organization; DMF: Decay-Missing-Filled; SID: Scientific Information Database; MESH: Medical Subject Headings; ISI: Web of Science; PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analysis; STROBE: Strengthening the Reporting of Observational Studies in Epidemiology for cross- sectional Study

#### Acknowledgements

We hereby express our gratitude and appreciation to the respected authorities of that center for bearing the financial costs of this study.

#### Authors' contributions

MK and AA contributed to the design, MM and RJ statistical analysis, participated in most of the study steps. AVR and SHSH prepared the manuscript. NS and MM assisted in designing the study, and helped in the, interpretation of the study. All authors have read and approved the content of the manuscript.

#### Funding

By Student Research Committee of Kermanshah University of Medical Sciences, Deputy for Research and Technology, Kermanshah University of Medical Sciences (IR) (3009346).

#### Availability of data and materials

Datasets are available through the corresponding author upon reasonable request.

#### Ethics approval and consent to participate

Not declared.

#### Consent for publication

Not applicable.

#### Competing interests

The authors declare that they have no conflict of interest.

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#### Received: 20 April 2020 Accepted: 17 September 2020 Published online: 06 October 2020

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