

```
read.csv("petrophysics_bertolini_2020")
```

	Sample	X	well	depth	h1	h2	h3	h4	h5	h6	
1	RB	1	TG-27	1.25	25.98	26.86	25.70	26.56	25.46	25.93	26
2	RB	2	TG-27	1.90	44.92	44.93	45.04	44.94	44.78	44.80	44
3	RB	3	TG-27	2.90	44.04	43.49	43.50	42.96	42.76	43.45	43
4	RB	4	TG-27	3.90	47.45	46.67	46.45	46.14	46.52	47.06	47
5	RB	5	TG-27	4.90	45.59	45.43	45.28	45.34	45.30	45.24	45
6	RB	0	TG-27	89.50	46.04	45.92	45.61	45.21	45.32	46.06	45
7	RB	6	TG-27	97.20	66.27	66.45	66.88	66.22	66.24	66.12	66
8	RB	7	TG-27	97.70	48.28	48.54	48.38	48.14	48.00	48.35	48
9	RB	8	TG-27	98.30	39.79	40.02	39.80	39.68	39.82	39.68	39
10	RB	9	TG-27	98.55	47.79	47.75	47.87	47.40	47.54	47.77	47
11	RB	10	TG-27	99.00	52.47	51.84	52.36	52.15	52.23	51.95	51
12	RB	11	TG-100	223.00	44.78	44.73	44.82	44.88	45.62	44.86	44
13	RB	12	TG-100	223.50	51.78	51.72	51.89	51.72	51.76	51.99	51
14	RB	13	TG-100	224.50	47.66	47.47	47.10	46.98	47.03	47.21	47
15	RB	14	TG-100	228.50	50.44	50.11	50.38	50.62	50.22	49.98	50
16	RB	15	TG-100	232.40	39.59	39.46	39.21	39.46	39.45	39.41	39
17	RB	16	TG-100	236.40	50.84	50.63	50.90	50.86	50.72	51.33	51
18	RB	17	TG-100	240.40	41.66	40.27	41.99	41.88	42.07	42.09	41
19	RB	18	TG-100	246.25	47.34	47.20	47.64	47.25	47.01	47.43	47
20	RB	19	TG-100	252.60	30.77	30.51	29.92	29.11	29.67	30.85	29
21	RB	20	TG-100	259.50	48.92	48.57	48.72	49.08	48.90	48.75	48
22	RB	21	TG-100	268.50	33.70	33.34	33.38	33.95	33.65	33.03	33
23	RB	22	TG-100	277.95	38.07	38.12	37.93	38.05	37.97	38.13	38
24	RB	23	TG-100	286.70	46.93	46.92	46.85	46.88	46.79	46.44	46
25	RB	24	TG-100	297.80	48.63	49.11	48.40	48.74	49.17	49.09	48
26	RB	25	TG-100	305.10	39.34	39.56	39.42	39.79	39.51	39.42	39
27	RB	26	TG-100	312.80	50.64	50.28	50.57	50.23	50.24	50.43	50
28	RB	27	TG-100	316.85	49.58	48.64	49.72	48.68	48.65	49.09	49
29	RB	28	TG-179	286.35	51.50	51.46	51.54	51.27	51.26	51.04	51
30	RB	29	TG-179	284.35	48.63	49.03	48.83	48.47	48.91	48.81	48
31	RB	30	TG-179	281.90	51.34	51.61	51.47	51.91	51.37	51.35	51

```

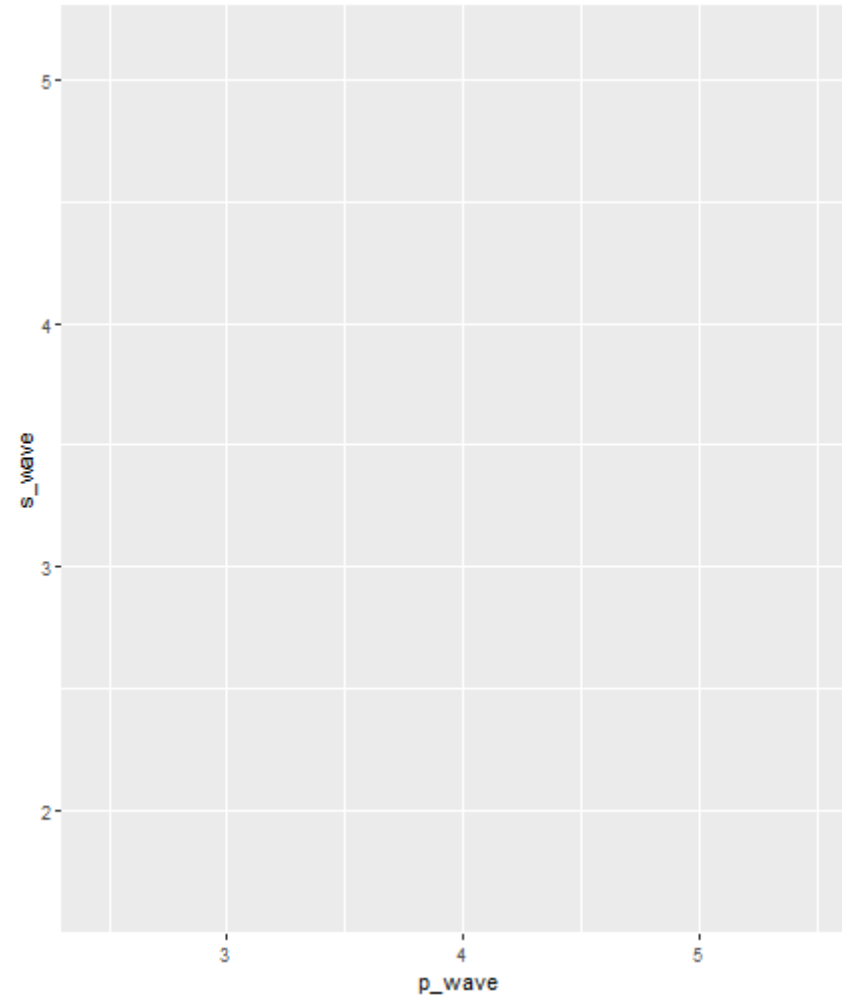
read.csv("petrophysics_bertolini_2020
as_tibble()
# A tibble: 72 × 29
  Sample      X well depth    h1    h2    h3    h4    h5    h6
  <chr>    <int> <chr> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
1 RB          1 TG-27  1.25  26.0  26.9  25.7  26.6  25.5  25.9
2 RB          2 TG-27  1.9   44.9  44.9  45.0  44.9  44.8  44.8
3 RB          3 TG-27  2.9   44.0  43.5  43.5  43.0  42.8  43.4
4 RB          4 TG-27  3.9   47.4  46.7  46.4  46.1  46.5  47.1
5 RB          5 TG-27  4.9   45.6  45.4  45.3  45.3  45.3  45.2
6 RB          0 TG-27 89.5   46.0  45.9  45.6  45.2  45.3  46.1
7 RB          6 TG-27 97.2   66.3  66.4  66.9  66.2  66.2  66.1
8 RB          7 TG-27 97.7   48.3  48.5  48.4  48.1  48    48.4
9 RB          8 TG-27 98.3   39.8  40.0  39.8  39.7  39.8  39.7
10 RB         9 TG-27 98.6   47.8  47.8  47.9  47.4  47.5  47.8
# ... with 62 more rows, and 15 more variables: h_mean <dbl>, pw_t1
# pw_t3 <dbl>, sw_t1 <dbl>, sw_t2 <dbl>, p_wave <dbl>, s_wave <
# subm_mass <dbl>, sat_mass <dbl>, bulk_vol <dbl>, pore_volum <
# density <dbl>

```

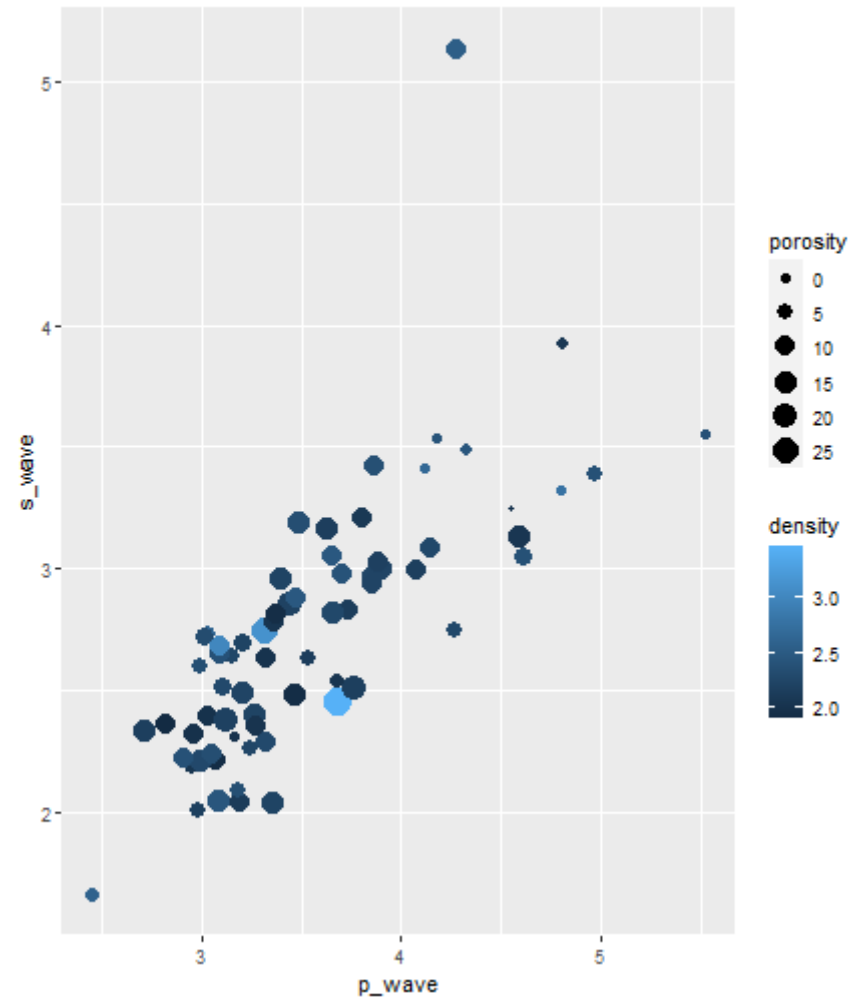
```
read.csv("petrophysics_bertolini_2020")
as_tibble() %>%
drop_na(p_wave, s_wave)
```

```
# A tibble: 69 × 29
  Sample      X well depth    h1    h2    h3    h4    h5    h6
  <chr>    <int> <chr> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
1 RB          1 TG-27  1.25  26.0  26.9  25.7  26.6  25.5  25.9
2 RB          2 TG-27  1.9   44.9  44.9  45.0  44.9  44.8  44.8
3 RB          3 TG-27  2.9   44.0  43.5  43.5  43.0  42.8  43.4
4 RB          4 TG-27  3.9   47.4  46.7  46.4  46.1  46.5  47.1
5 RB          5 TG-27  4.9   45.6  45.4  45.3  45.3  45.3  45.2
6 RB          0 TG-27 89.5   46.0  45.9  45.6  45.2  45.3  46.1
7 RB          6 TG-27 97.2   66.3  66.4  66.9  66.2  66.2  66.1
8 RB          7 TG-27 97.7   48.3  48.5  48.4  48.1  48    48.4
9 RB          8 TG-27 98.3   39.8  40.0  39.8  39.7  39.8  39.7
10 RB         9 TG-27 98.6   47.8  47.8  47.9  47.4  47.5  47.8
# ... with 59 more rows, and 15 more variables: h_mean <dbl>, pw_t1
# pw_t3 <dbl>, sw_t1 <dbl>, sw_t2 <dbl>, p_wave <dbl>, s_wave <
# subm_mass <dbl>, sat_mass <dbl>, bulk_vol <dbl>, pore_volum <
# density <dbl>
```

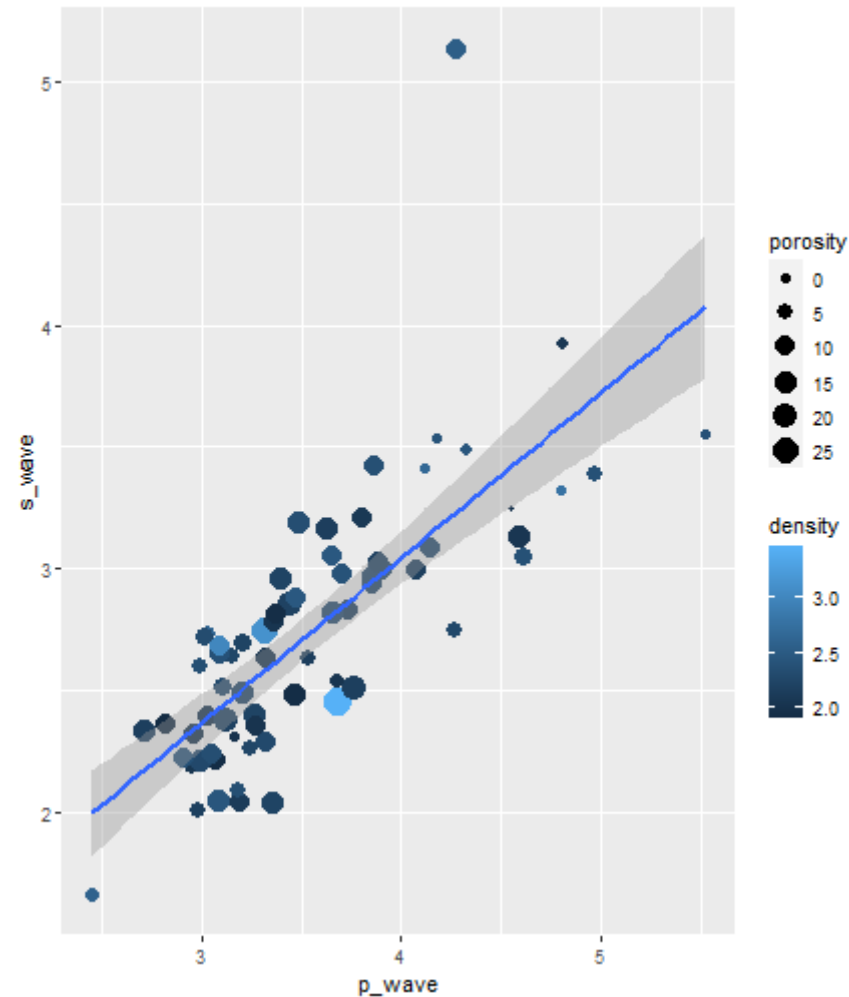
```
read.csv("petrophysics_bertolini_2020")  
  as_tibble() %>%  
  drop_na(p_wave, s_wave) %>%  
  ggplot(aes(x=p_wave,  
             y=s_wave))
```



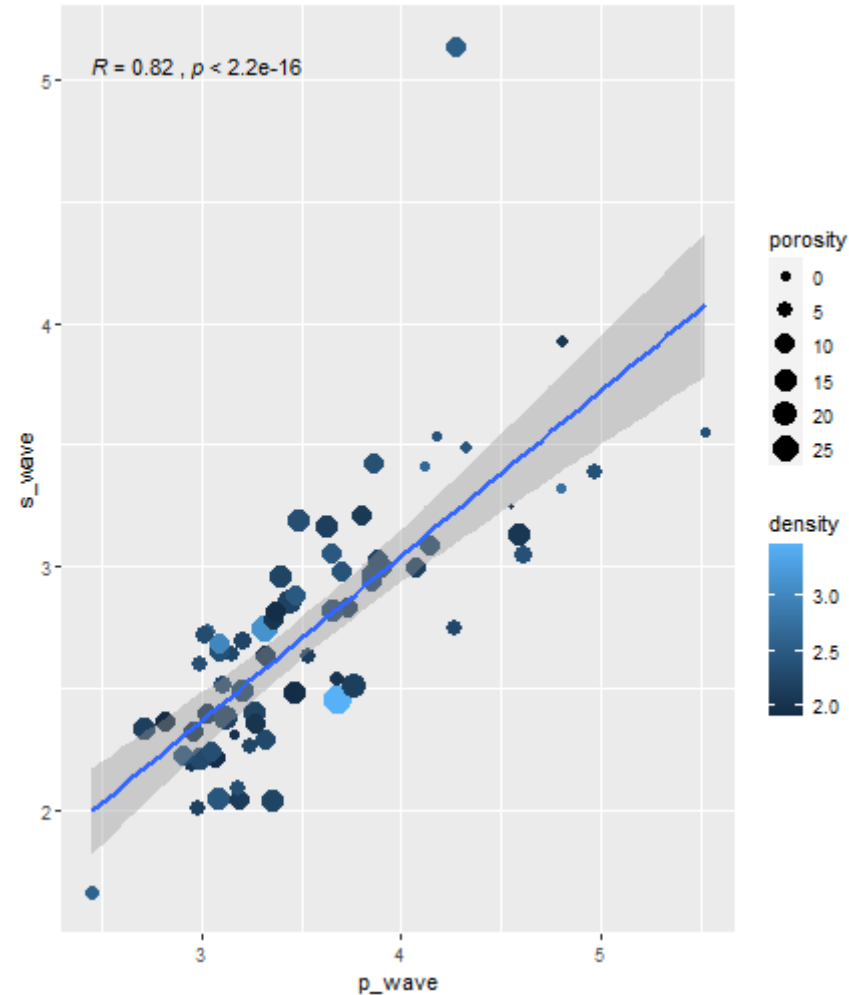
```
read.csv("petrophysics_bertolini_2020")  
  as_tibble() %>%  
  drop_na(p_wave, s_wave) %>%  
  ggplot(aes(x=p_wave,  
             y=s_wave)) +  
  geom_point(aes(col=density,  
                 size=porosity))
```



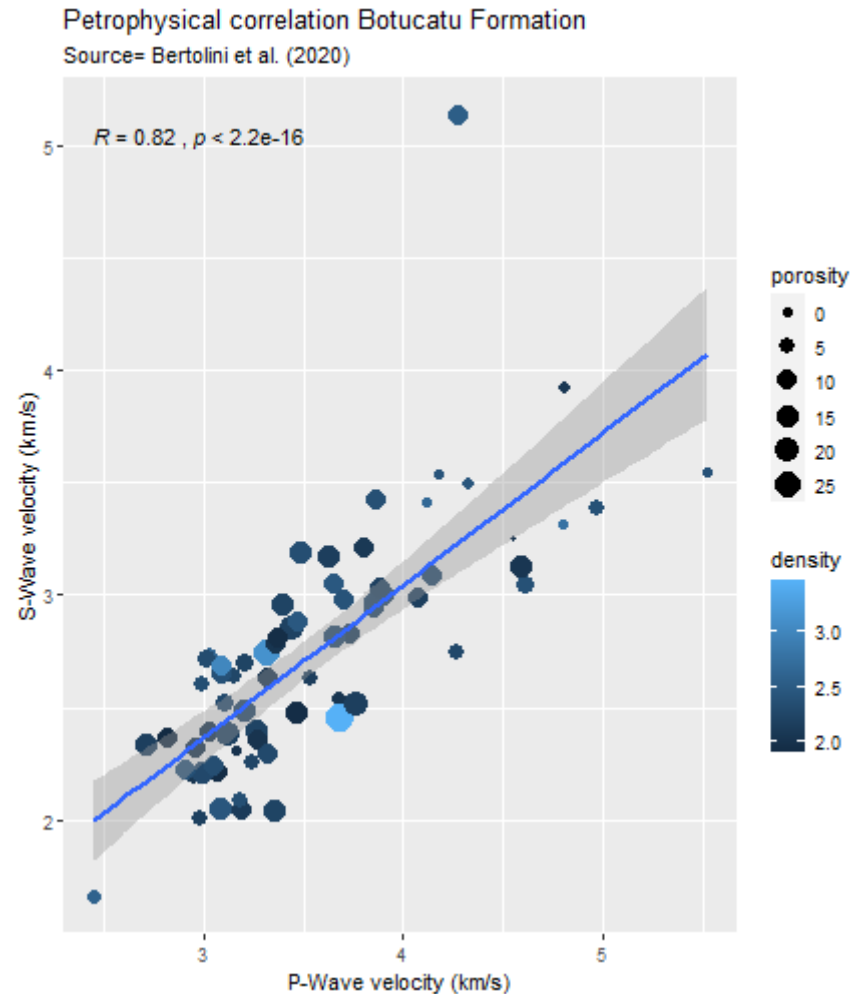
```
read.csv("petrophysics_bertolini_2020")
as_tibble() %>%
drop_na(p_wave, s_wave) %>%
ggplot(aes(x=p_wave,
            y=s_wave)) +
geom_point(aes(col=density,
               size=porosity)) +
geom_smooth(method="lm")
```



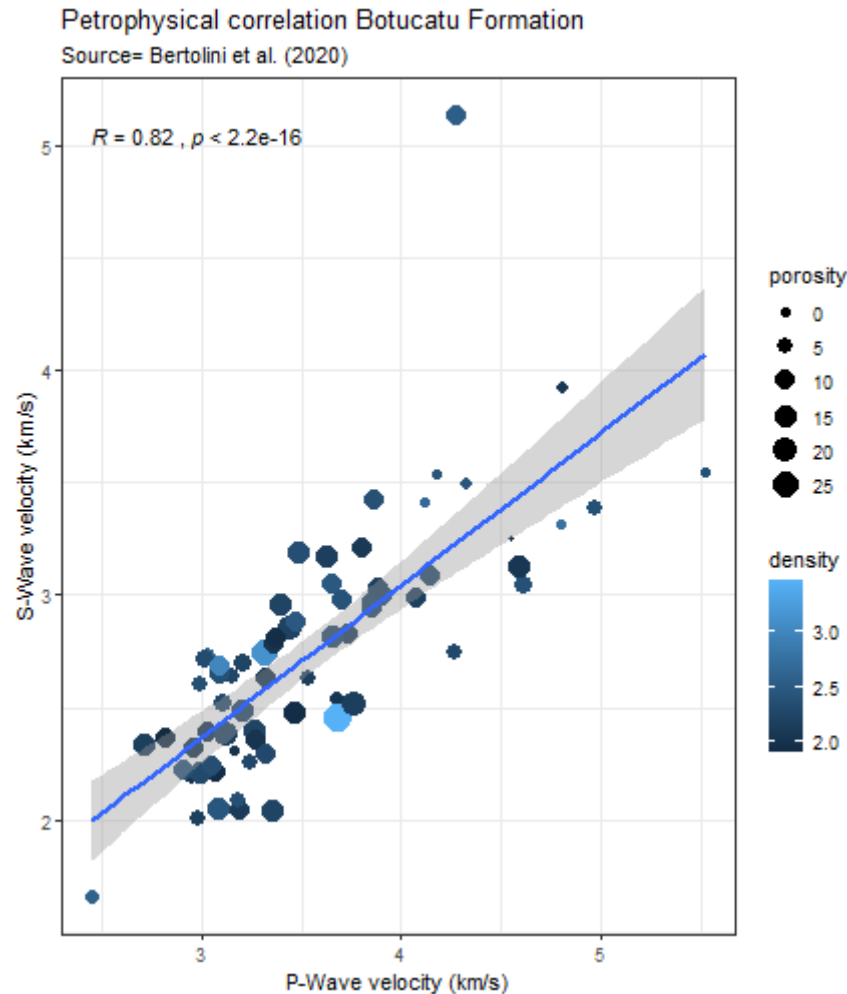
```
read.csv("petrophysics_bertolini_2020")
as_tibble() %>%
drop_na(p_wave, s_wave) %>%
ggplot(aes(x=p_wave,
            y=s_wave)) +
geom_point(aes(col=density,
                size=porosity)) +
geom_smooth(method="lm") +
stat_cor(aes(label=paste(..r.label..,
                        method="spearman")))
```



```
read.csv("petrophysics_bertolini_2020")
as_tibble() %>%
drop_na(p_wave, s_wave) %>%
ggplot(aes(x=p_wave,
            y=s_wave)) +
geom_point(aes(col=density,
               size=porosity)) +
geom_smooth(method="lm") +
stat_cor(aes(label=paste(..r.label..,
                        method="spearman"))) +
labs(title="Petrophysical correlation",
      x="P-Wave velocity (km/s)",
      y="S-Wave velocity (km/s)",
      subtitle = "Source= Bertolini et al. (2020)")
```




```
read.csv("petrophysics_bertolini_2020
as_tibble() %>%
drop_na(p_wave,s_wave) %>%
ggplot(aes(x=p_wave,
            y=s_wave)) +
geom_point(aes(col=density,
                size=porosity))+
geom_smooth(method="lm")+
stat_cor(aes(label=paste(..r.label.
                        method="spearman")+
labs(title="Petrophysical correlati
x="P-Wave velocity (km/s)",
y="S-Wave velocity (km/s)",
subtitle = "Source= Bertolini e
theme_bw()
```



```
read.csv("petrophysics_bertolini_2020.csv", sep=";") %>%
as_tibble() %>%
drop_na(p_wave,s_wave) %>%
ggplot(aes(x=p_wave,
            y=s_wave)) +
```