**Summary Structures**

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|  | Report Structure-1 |
| 1 | “*stop\_name*” is a stop where "*line\_number*" lines pass, and the density rate is “*density\_level”*. |
| 2 | Looking at the crowd daily, it is the highest on “*day*” and other days in order of density are as follows: “*days\_density\_order*”. |
| 3 | During the week, hourly density is generally “*density\_level*” in the “*morning*”. |
| 4 | It is “*density\_level*” in the “*midday*” and towards “*evening*”, it reaches a “*density\_level*” level. |
| 5 | In the “*night*”, density is at a “*density\_level*” level. |
| 6 | The busiest hour of the stop is *“hour”* clock, with “*boarding\_number*” boarding. |
| 7 | At the weekend, just like on weekdays, the density is “*density\_level*” in the “*morning”*. |
| However, the density during the day is slightly different on the weekend. Unlike weekdays, the density is “*density\_level*” in the “*morning”*. |
| 8 | It is “*density\_level*” in the “*midday”*. |
| 9 | and towards “*evening”*, it reaches a “*density\_level*” level. |
| 10 | In the “*night*”, it is at “*density\_level*” level. |
| 11 | The busiest hour of the stop is “*hour”* clock, with *“boarding\_number”* boarding on weekends. |
| 12 | The passenger type most commonly seen at this bus stop is the “*card\_type*” card with *the “boarding\_number”* boarding. |
| 13 | The highest density of this card type is seen in the “*day\_part*” hours, especially at *“hour”* and the “*line\_number*” line is mostly preferred. |
| 14 | While the density of “*card\_type*” card types is at a *“normal”* level, the “*card\_type*” type has a *“low”* level with “*boarding\_number*” boarding. |
| 15 | In terms of lines, the *“busiest”* at the stop is line *“line\_number”*, while line *“line\_number”* has a *“low”* level. |
| 16 | In summary, the *“highest”* level of the stop density during the week is on the “*line\_number*” line around “*hour*” on “*day*”, and mostly “*card\_type*”card-type passengers are seen. |

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|  | Report Structure-2 |
| 1 | When considered according to these four stops chosen heterogeneously throughout **Kayseri** **province;** the *“highest”* density throughout the week is seen on “*day*”, and other days in order of density are as follows: “*days\_density\_order*”. |
| 2 | The density during the day is generally “*density\_level*” in the *“morning”.* |
| 3 | It is “*density\_level*” in the *“midday”* and towards *“evening”*, it reaches “*density\_level*” level. |
| 4 | In the *“night”*, density is at a “*density\_level*” level. |
| 5 | The *“busiest”* hour in Kayseri with “*boarding\_number*” boarding is at “*hour”* o'clock. |
| 6 | Overall, the passenger type most commonly seen is the “*card\_type”* card with “*boarding\_number*” boarding. |
| 7 | While the density of “*card\_type”* card types is at a “*normal*” level, the “*card\_type”* type has a “*low*” level with “*boarding\_number*” boarding. |
| 8 | In terms of lines, the *“busiest”* line in Kayseri is line *“line\_number”*, while line *“line\_number”* has a *“low”* density level. |

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**SUMMARIES**

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| **İnönü Boulevard Transfer Stop 4** is a stop where 31 lines pass and the density rate is high. Looking at the crowd on a daily basis, it is the highest on Tuesday and other days in order of density are as follows: Wednesday Monday Thursday Saturday Sunday Friday. During the week, hourly density is generally low in the mornings. It is normal in the midday and towards evening, it reaches high level. In the night, density is at a low level. The busiest hour of the stop is 18:00 clock, with 11880 boarding. At the weekend, just like on weekdays, the density is low in the mornings. It is normal in the midday and towards evening, it reaches high level. In the night, it is at low level. The busiest hour of the stop is 18:00 clock, with 3957 boarding at the weekends. At this bus stop, the most seen passenger type is full card with 49516 boarding. The highest density of this card type is seen in the evening hours, especially at 18:00 and mostly prefers the 558 line. While the density of discounted card types is at a normal level, free type has a low level with 11177 boarding. In terms of lines, the busiest at the stop is line 558, while line 491 has a low level. As a summary, the highest level of the stops density during the week is on the 558 line on around 18:00 on Tuesday and mostly full card type passengers are seen. [0.42] |
| **İnönü Boulevard Transfer Stop 2** is a stop where 34 lines pass and the density rate is normal. Looking at the crowd on a daily basis, it is the highest on Tuesday and other days in order of density are as follows: Wednesday Saturday Friday Thursday Monday Sunday. During the week, hourly density is generally low in the mornings. It is low in the midday and towards evening, it reaches high level. In the night, density is at a low level. The busiest hour of the stop is 18:00 clock, with 6029 boarding. At the weekend, just like on weekdays, the density is low in the mornings. It is normal in the midday and towards evening, it reaches high level. In the night, it is at low level. The busiest hour of the stop is 16:00 clock, with 1786 boarding at the weekends. At this bus stop, the most seen passenger type is full card with 24266 boarding. The highest density of this card type is seen in the evening hours, especially at 18:00 and mostly prefers the 595 line. While the density of discounted card types is at a normal level, free type has a low level with 6133 boarding. In terms of lines, the busiest at the stop is line 595, while line 22 has a low level. As a summary, the highest level of the stops density during the week is on the 595 line on around 18:00 on Tuesday and mostly full card type passengers are seen.[0.46] |
| **Osman Kavuncu Boulevard no 26** is a stop where 17 lines pass and the density rate is low. Looking at the crowd on a daily basis, it is the highest on Monday and other days in order of density are as follows: Thursday Wednesday Tuesday Friday Saturday Sunday. During the week, hourly density is generally normal in the mornings. It is low in the midday and towards evening, it reaches normal level. In the night, density is at a low level. The busiest hour of the stop is 18:00 clock, with 55 boarding. However, the density during the day is slightly different on the weekend. Unlike weekdays, the density is normal in the mornings. It is high in the midday and towards evening, it reaches high level. In the night, it is at low level. The busiest hour of the stop is 15:00 clock, with 12 boarding at the weekends. At this bus stop, the most seen passenger type is full card with 181 boarding. The highest density of this card type is seen in the evening hours, especially at 17:00 and mostly prefers the 535 line. While the density of discounted card types is at a normal level, free type has a low level with 38 boarding. In terms of lines, the busiest at the stop is line 535, while line 144 has a low level. As a summary, the highest level of the stops density during the week is on the 535 line on around 18:00 on Monday and mostly full card type passengers are seen. [0.44] |
| **Wonderland Transfer Stop** is a stop where 12 lines pass and the density rate is low. Looking at the crowd on a daily basis, it is the highest on Tuesday and other days in order of density are as follows: Wednesday Saturday Friday Thursday Monday Sunday. During the week, hourly density is generally low in the mornings. It is low in the midday and towards evening, it reaches normal level. In the night, density is at a low level. The busiest hour of the stop is 16:00 clock, with 913 boarding. At the weekend, just like on weekdays, the density is low in the mornings. It is normal in the midday and towards evening, it reaches high level. In the night, it is at normal level. The busiest hour of the stop is 18:00 clock, with 286 boarding at the weekends. At this bus stop, the most seen passenger type is full card with 3773 boarding. The highest density of this card type is seen in the evening hours, especially at 17:00 and mostly prefers the 253 line. While the density of discounted card types is at a normal level, free type has a low level with 1065 boarding. In terms of lines, the busiest at the stop is line 253, while line 89 has a low level. As a summary, the highest level of the stops density during the week is on the 253 line on around 16:00 on Tuesday and mostly full card type passengers are seen. [0.51] |
| When considered according to these four stops chosen heterogeneously throughout **Kayseri** **province,** while the highest density throughout the week is seen on Tuesday and other days in order of density are as follows: Wednesday Thursday Monday Saturday Sunday Friday. The density during the day is generally low in the mornings. It is normal in the midday and towards evening, it reaches high level. In the night, density is at a low level. The busiest hour in Kayseri with 21417 boarding is at 18:00 o'clock. Overall, the most seen passenger type is full card with 77736 boarding. While the density of discounted card types is at a normal level, free type has a low level with 18413 boarding. In terms of lines, the busiest line in Kayseri is line 558, while line 89 has a low density level. [0.54] |

**Membership Functions**

Two different label set were used when creating summaries. The first set {morning, midday, evening, night} was used to express the fuzziness of day parts and a fixed membership function was created (Fig. 1). Other label set (low, normal, high) is used to express the fuzziness of some parameter (stop density and line density etc.) for each sentences. For this label set, membership function is not fixed, differ based on data set and created by fuzzy c-means for each sentences. An example is presented in Fig. (2) for this membership function type

Figure 1. Membership Function for Day Parts

Figure 2. Membership Function for Line Density