

Outdoor Temperature and Attendance at Indoor Swimming Centres: Evidence from Hourly Administrative Data

Background: Indoor swimming centres are an important component of municipal sports infrastructure, yet little is known about how environmental conditions influence their use. While prior research has examined socioeconomic determinants of swimming ability and participation, behavioural responses to weather—particularly at high temporal resolution—remain understudied. **Objective:** This study investigates how outdoor temperature affects hourly attendance at public indoor swimming centres in Vantaa, Finland, and whether single-ticket and multiple-ticket users respond differently to temperature variation. **Methods:** We analyse administrative records of all entries to five municipal swimming centres in 2014 ($N \approx 880,000$). Each entry includes a timestamp and ticket type. Hourly attendance is linked to hourly temperature observations from Helsinki-Vantaa Airport. Log-linear regressions are estimated with day-of-week controls, and additional models examine ticket-type heterogeneity and seasonal subsamples. **Results:** Higher outdoor temperatures are associated with significantly lower indoor swimming attendance, consistent with substitution toward outdoor recreation. Multiple-ticket holders exhibit a stronger negative temperature response than single-ticket users, aligning with microeconomic theory: their lower marginal cost per visit increases flexibility to postpone attendance. Attendance patterns also vary systematically across weekdays and hours. **Conclusions:** The findings provide empirical evidence on weather-driven substitution between indoor and outdoor leisure activities and highlight behavioural differences across user segments. These insights can inform staffing, pricing, and capacity planning in public sports facilities. Future work should incorporate richer weather variables, fixed effects, and survey-based measures of visitor motivation.

Introduction

Swimming is a widely practised recreational activity in many high-income countries, and in the Nordic region swimming ability is particularly high: approximately 90% of adults report being able to swim (Borgonovi et al., 2022). In Finland, swimming instruction is typically provided in elementary schools, although the COVID-19 pandemic disrupted this practice and contributed to a decline in swimming ability among children (Lehtimäki et al., 2022). Prior research has documented socioeconomic and regional inequalities in swimming ability (Kastarinen & Sula, 2023; Kuntz et al., 2016), as well as demographic patterns in swimming participation (Purhonen, 2018).

Despite this, relatively little is known about **how environmental conditions influence the use of indoor swimming facilities**. This gap is surprising given the strong seasonal variation in Finland’s climate and the availability of free outdoor swimming opportunities during the summer. Understanding how

1 weather affects indoor attendance is important for municipalities, which must
 2 plan staffing, maintenance, and pricing strategies for public sports infrastructure.
 3 A second gap concerns **heterogeneity in user behaviour**. Public swimming
 4 centres typically offer both single-visit tickets and multi-visit passes. Standard
 5 microeconomic theory predicts that multi-visit pass holders—who face a lower
 6 marginal cost per visit—should be more flexible in timing their attendance.
 7 Whether this theoretical prediction holds in the context of municipal swimming
 8 centres has not been empirically examined.

9 This study addresses these gaps by analysing a unique dataset of all 2014 entries
 10 to the five public swimming centres in Vantaa, Finland. By linking hourly
 11 attendance records to hourly outdoor temperature, we examine:

- 12
- 13 1. How outdoor temperature affects indoor swimming demand.
- 14 2. Whether the temperature response differs between single-ticket and
 15 multiple-ticket users.
- 16 3. How these patterns vary across hours of the day and seasons.
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18 Although the negative temperature–attendance relationship is theoretically
 19 expected, providing empirical confirmation using high-frequency administrative
 20 data contributes to the literature on weather, leisure substitution, and user
 21 segmentation in public sports facilities.

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24 **Literature and Theoretical Framework**

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 26 Research on swimming has focused primarily on swimming ability (Hakamäki
 27 et al., 2006; Rajala & Kankaanpää, 2011; Borgonovi et al., 2022) and
 28 socioeconomic determinants of participation (Wicker et al., 2010; Thibaut et al.,
 29 2017). Studies also show that swimming participation is constrained by working
 30 hours (Hallmann et al., 2012) and family responsibilities (Pawlowski & Breuer,
 31 2011a).

32 However, **weather effects on indoor leisure** remain understudied. Outdoor
 33 temperature influences participation in many recreational activities, and substitution
 34 between indoor and outdoor options is well documented in other contexts. In
 35 Finland, where lakes are abundant and free to access, warm weather provides a
 36 strong alternative to indoor swimming.

37 A second relevant literature concerns **multi-visit passes and season tickets**. In
 38 sports economics, season ticket holders exhibit habit persistence and different
 39 attendance patterns than single-ticket buyers (Benz et al., 2008; Schreyer & Torgler,
 40 2021; Sung & Pyun, 2023). Because multi-visit passes reduce the marginal cost of
 41 each visit, theory predicts that these users should be more flexible in adjusting
 42 attendance in response to external conditions—including weather.

43 This study provides empirical evidence on both fronts.

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1 **Material and Methods**

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3 *Data*

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5 The dataset includes all entries to the five public swimming centres in
6 Vantaa during 2014. Each entry contains:

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- 8 • a timestamp (to the second)
9 • the swimming centre
10 • the ticket type

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12 For analysis, timestamps are aggregated to the **hour of entry**. Weather data
13 consist of hourly temperature observations from Helsinki-Vantaa Airport,
14 located centrally between the major swimming centres. Table 1 summarises total
15 visitors and operating hours for each centre.

16

17 **Table 1.** *Descriptive statistics of visitors in each swimming center in 2014*

	Myyrmäki	Tikkurila	Hakunila	Korso	Martinlaakso
Visitors in 2014	360520	268042	226057	11712	398
Hours, when at least one visitor	5716	4467	4289	947	49
Visitors / open hour	63	60	53	12	8

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19 *Study Design*

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21 The study uses an observational design linking administrative attendance
22 data to hourly temperature. No personal identifiers are included, and no ethical
23 approval is required.

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25 *Empirical Strategy*

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27 The baseline model estimates: $q_d = q_d(d, \text{temp})$
28 where: d = day and temp is daily average temperature in Helsinki-Vantaa airport.
29 For each of the three largest swimming centers the baseline model is estimated
30 separately.

31

32 Sunday is the reference category.

33 Additional models examine:

- 34 • hour-specific regressions
35 • ticket-type-specific regressions
36 • seasonal subsamples

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38 Although reviewers recommended fixed effects and additional weather
39 controls, the present manuscript retains the original specification for
40 comparability with the existing tables.

1 Results

2 Baseline Temperature Effects

3 Table 2 shows that temperature has a statistically significant negative effect
4 on attendance in all three major centres. A 1°C increase in temperature reduces
5 hourly attendance by 0.5–0.9%.

6 **Table 2.** Regression analysis of each three large swimming center visitors

	Log #visitors in Myyrmäki	Log #visitors in Tikkurila	Log #visitors in Hakunila
Temperature	-0.009*** (0.002)	-0.005** (0.002)	-0.007*** (0.002)
Monday	0.869*** (0.086)	0.813*** (0.069)	0.623*** (0.058)
Tuesday	0.607*** (0.084)	0.643*** (0.069)	0.594*** (0.058)
Wednesday	0.596*** (0.085)	0.783*** (0.069)	0.675*** (0.059)
Thursday	0.466*** (0.086)	0.574*** (0.070)	0.518*** (0.059)
Friday	0.615*** (0.085)	0.582*** (0.069)	0.538*** (0.058)
Saturday	-0.393*** (0.090)	-0.040 (0.076)	-0.021 (0.065)
Constant	3.013*** (0.066)	3.193*** (0.055)	3.240 (0.046)
R ²	0.053	0.063	0.064
F	44.596***	42.857***	42.622***
n	5617	4467	4289

10 *note each hourly observation is one observation, therefore the number of observations is more than the*
11 *number of days (364), standard errors is parenthesis, *, ** and *** indicate significance at 5, 1 and*
12 *0.1% level*

13 Hour-Specific Patterns

14 Table 3 shows that temperature effects vary by hour. Early morning
15 attendance (5–7 a.m.) is less temperature-sensitive, while mid-morning and
16 afternoon hours show stronger negative effects.

17 **Table 3.** Entrances to Myyrmäki (M), Tikkurila (T) and Hakunila (H) swimming
18 centers by hour from 5 to 7 in 2014

Location and time	M, 5- 6	T, 5-6	H, 5- 6	M, 6-7	T, 6-7	H, 6-7	M, 7-8	T, 7-8	H, 7-8
Temperat ure	- 0.032 (0.01 5)	0.006 (0.00 7)	0.014 (0.01 3)	- 0.020*** (0.003)	- 0.017** (0.003)	- 0.009** (0.004)	- 0.022*** (0.004)	- 0.017*** (0.004)	- 0.012*** (0.003)
Monday	1.404 ** (0.46 5)	1.188 *** (0.26 4)	0.266 (0.34 6)	4.358*** (0.255)	4.160** (0.254)	0.638** (0.094)	3.755*** (0.152)	2.990*** (0.122)	2.914*** (0.094)

Tuesday	1.340 ** (0.480)	0.576 * (0.239)		4.237*** (0.255)	4.004** * (0.254)	-0.005 (0.093)	3.522*** (0.151)	2.812*** (0.121)	2.730*** (0.093)
Wednesday	1.209 ** (0.445)	0.799 *** (0.243)	- 0.319 (0.360)	4.166*** (0.255)	4.139** * (0.254)		3.715*** (0.152)	3.004*** (0.122)	2.742*** (0.093)
Thursday	0.935 * (0.453)	0.373 (0.244)	- 0.995 (*) (0.556)	4.044*** (0.256)	3.913** * (0.254)	-0.136 (0.095)	3.242*** (0.153)	2.658*** (0.123)	2.504*** (0.095)
Friday	1.255 * (0.462)	0.573 * (0.239)	- 0.367 (0.340)	4.293*** (0.256)	4.115** * (0.254)	0.064 (0.094)	3.659*** (0.152)	3.074*** (0.123)	2.700*** (0.094)
Saturday	0.035 (0.479)	- 0.006 (0.278)	- 0.915 (0.911)	-0.190 (0.289)	-0.335 (0.351)		0.598*** (0.168)	1.089*** (0.130)	- 0.860*** (0.144)
Constant	0.309 (0.337)	- 0.028 (0.211)	1.603 (0.226)	0.444(*) (0.250)	0.318 (0.248)	3.885 (0.067)	0.711*** (0.126)	1.167*** (0.099)	0.931*** (0.073)
R ²	0.196	0.152	0.050	0.839	0.717	0.260	0.819	0.792	0.874
F	3.646 **	5.355 ***	1.457	182.455 ***	85.561 ***	17.190 ***	186.919 ***	158.338 ***	274.473 ***
n	77	171	53	244	235	232	289	291	276

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The estimation results for other hours, from 8 am to 9 p.m. are in the appendices. The temperature seems to have more influence on the swimming center visitor number at the Myyrmäki swimming hall than in two other large halls that have roughly similar conditions including a gym. A higher temperature reduces on average the number of visitors, which is reasonable since citizens have the possibility to swim in open water (lakes) in the summer. The busy morning hours in relation to Sundays are observed from 5 to 9 a.m. on each weekday except Saturdays. There are less visitors from 10 a.m. to 3 p.m. almost every weekday except Saturdays in relation to Sundays. In the afternoon from 4 p.m. to 8 p.m. there are again more visitors on weekdays in relation to Sundays.

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Ticket-Type Heterogeneity

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1 **Table 4.** Entrances to Myyrmäki swimming center with different ticket
 2 alternatives by hour from 6 to 8

Location =Myyrmäki	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket	Gym + Swimming, season (30 days)	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket
Time	6–7	6–7	6–7	6–7	7–8	7–8	7–8
Temperature	-0.017*** (0.006)	-0.050*** (0.006)	-0.035 (0.028)	-0.017(*) (0.009)	-0.024** (0.009)	-0.060*** (0.011)	-0.026 (0.024)
Monday	6.531*** (0.538)	8.747*** (0.516)	3.974 (2.577)	0.284 (0.800)	9.026*** (0.309)	9.016*** (0.388)	2.895** *
Tuesday	6.511*** (0.538)	8.737*** (0.516)	3.219 (2.575)	0.272 (0.800)	8.476*** (0.306)	8.342*** (0.384)	3.891** *
Wednesday	6.265*** (0.538)	8.551*** (0.516)	3.190 (2.575)	0.294 (0.800)	8.902*** (0.308)	8.873*** (0.386)	3.260** *
Thursday	6.344*** (0.539)	8.618*** (0.517)	2.048 (2.580)	-0.031 (0.801)	8.156*** (0.310)	7.920*** (0.389)	3.902** *
Friday	6.549*** (0.539)	8.518*** (0.516)	3.705 (2.578)	-0.018 (0.801)	8.900*** (0.309)	8.562*** (0.388)	4.103** *
Saturday	-3.419*** (0.609)	0.104 (0.584)	0.073 (2.915)	0.035 (0.905)	-0.697* (0.342)	0.038 (0.429)	0.017 (0.931)
Constant	-3.370*** (0.528)	-6.665*** (0.506)	-6.737 (2.527)	-6.826 (0.785)	-6.096*** (0.256)	-6.659*** (0.321)	- 6.799** *
R ²	0.829	0.834	0.034	0.004	0.892	0.825	0.145
F	169.298***	175.286***	2.228*	1.150	339.473***	195.455***	7.989
n	244	244	244	244	289	289	289

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4 *Seasonal Variation*

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6 Table 5 shows that temperature effects differ across seasons. Single-ticket
 7 users respond mainly to broad seasonal differences, while multiple-ticket users
 8 also respond to day-to-day variation within seasons.

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10 **Table 3.** Entrances to Myyrmäki swimming center with different ticket
 11 alternatives by seasons and some time slots.

Location =Myyrmäki single	Jan, Feb, March	April, May, June	July, Aug, Sept.	Oct, Nov, December	Full year
8 - 9	n.s.	n.s.	n.s.	n.s.	-0.025**
11 - 12	n.s.	n.s.	n.s.	n.s.	-0.036*
14 - 15	n.s.	n.s.	-0.180***	n.s.	-0.035***
17- 18	n.s.	n.s.	n.s.	n.s.	n.s.
Multiple					
8 - 9	n.s.	-0.017**	-0.196***	n.s.	-0.035***
11 - 12	n.s.	n.s.	-0.146***	n.s.	-0.090***
14 - 15	n.s.	-0.142***	-0.265***	n.s.	-0.083***
17- 18	n.s.	n.s.	-0.105(*)	n.s.	-0.057***

1 Table 5 reveals that swimming is related to outside temperature since there are
 2 substantial differences between months and that monthly variation is important by
 3 single ticket users, but multiple ticket users take into account not only temperature
 4 variation between months but also between days within this season.

6 *Gym Attendance*

8 Table 6 shows that gym users—especially single-ticket buyers—are also
 9 sensitive to temperature, with negative effects in most hours.

11 **Table 6.** *Gym attendance at Hakunila swimming center by hour from 6 a.m. to 1*
 12 *p.m.*

Location =Hakunila	Gym, single ticket	Gym, single ticket	Gym, single ticket	Gym, single ticket	Gym, single ticket	Gym, single ticket	Gym, single ticket	Gym, single ticket
Time	6 – 7	7 – 8	8 – 9	9 – 10	10 – 11	11 – 12	12 – 13	13 - 14
Temperature	- 0.065** (0.021)	- 0.105** (0.023)	-0.082*** (0.020)	-0.007 (0.019)	-0.023 (0.019)	- 0.064** (0.017)	- 0.077** (0.016)	- 0.111** (0.016)
Monday	-0.105 (0.544)	2.883** (0.707)	5.288*** (0.662)	5.117*** (0.631)	-1.284* (0.647)	-0.987 (0.608)	-0.702 (0.572)	0.769 (0.575)
Tuesday	-0.274 (0.538)	2.893** (0.701)	5.105*** (0.656)	1.338* (0.631)	-3.343*** (0.647)	-0.642 (0.608)	1.008(*) (0.572)	1.004(*) (0.578)
Wednesday		3.779** (0.701)	6.559*** (0.661)	5.823*** (0.634)	0.142 (0.651)	- 1.720** (0.612)	-0.404 (0.575)	-0.734 (0.578)
Thursday	0.527 (0.551)	1.744* (0.714)	6.930*** (0.667)	4.955*** (0.637)	-4.420*** (0.655)	- 1.061(*) (0.615)	0.378 (0.582)	0.468 (0.585)
Friday	-0.757 (0.544)	2.677** (0.707)	5.881*** (0.661)	4.782*** (0.637)	-1.350* (0.651)	-0.673 (0.612)	0.350 (0.575)	-0.001 (0.578)
Saturday		-0.361 (1.081)	-0.065 (0.792)	0.036 (0.701)	-0.013 (0.651)	-0.738 (0.612)	-1.212* (0.575)	-0.368 (0.578)
Constant	- 5.294** (0.389)	- 6.488** (0.547)	-6.692*** (0.506)	-6.704*** (0.472)	0.534 (0.474)	0.585 (0.448)	0.434 (0.424)	0.530 (0.428)
R ²	0.045	0.164	0.409	0.369	0.202	0.045	0.103	0.148
F	3.186**	8.706**	29.824**	26.732**	12.916**	3.215**	6.414**	9.110**
n	232	276	292	309	331	331	330	329

13
 14 The gym visitors that purchase a single ticket in both Myyrmäki and Hakunila
 15 swimming centers seem to be more sensitive to outside temperature than single ticket
 16 swimmers in Myyrmäki that have on average the lowest sensitivity to temperature or
 17 similar with those who have a multiple ticket both to gym and swimming

1 Discussion

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3 This study provides detailed evidence on how outdoor temperature
4 influences attendance at indoor swimming centres. The negative temperature–
5 attendance relationship is consistent with substitution toward free outdoor
6 swimming opportunities during warm weather. The effect is strongest during
7 midday and afternoon hours, when outdoor conditions are most favourable.

8 A key contribution is the analysis of **ticket-type heterogeneity**.
9 Multiple-ticket holders exhibit greater temperature sensitivity than single-ticket
10 users, consistent with microeconomic theory: their lower marginal cost per visit
11 increases flexibility to delay attendance. These finding parallels evidence from
12 season ticket holders in professional sports, who adjust attendance based on
13 external conditions (Schreyer et al., 2016; Sung & Pyun, 2023).

14 The results also highlight differences between swimming and gym use,
15 suggesting that temperature affects a broad range of indoor recreational
16 activities.

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18 *Limitations*

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- 20 • The data contain no information on visitor motivations or demographics.
- 21 • Only temperature is included; precipitation, wind, and humidity are
22 omitted.
- 23 • No fixed effects are used, limiting causal interpretation.
- 24 • Survey data would help explain behavioural mechanisms.

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26 Future research should incorporate richer weather variables, fixed effects,
27 and survey-based measures of preferences.

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30 Conclusion

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32 Using high-frequency administrative data from five municipal swimming
33 centres, this study shows that outdoor temperature significantly reduces indoor
34 swimming attendance. Multiple-ticket holders are more responsive to
35 temperature than single-ticket users, consistent with theoretical predictions
36 about marginal cost and flexibility. These findings have practical implications
37 for staffing, pricing, and facility management in public sports infrastructure.

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1 **Appendices**

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Table 7.

	M, 8-9	T, 8-9	H, 8-9	M, 9-10	T, 9-10	H, 9-10	M, 10-11	T, 10-11	H, 10-11
Temperature	- 0.024*** (0.002)	- 0.016*** (0.003)	- 0.018*** (0.004)	- 0.030*** (0.005)	- 0.012*** (0.005)	- 0.013*** (0.004)	- 0.031** (0.003)	- 0.013** (0.002)	- 0.013** (0.003)
Monday	1.659*** (0.074)	2.547*** (0.096)	2.453*** (0.137)	2.656*** (0.156)	2.236*** (0.140)	1.965*** (0.133)	-0.245* (0.103)	- 0.504** (0.063)	- 0.758** (0.088)
Tuesday	1.417*** (0.073)	2.526*** (0.095)	2.355*** (0.136)	2.545*** (0.155)	2.232*** (0.139)	2.099*** (0.133)	- 0.490** (0.104)	- 0.647** (0.063)	- 0.962** (0.088)
Wednesday	1.694*** (0.073)	2.669*** (0.096)	2.472*** (0.137)	2.564*** (0.156)	2.427*** (0.141)	2.006*** (0.133)	- 0.327** (0.104)	- 0.388** (0.063)	- 0.782** (0.088)
Thursday	1.316*** (0.075)	2.354*** (0.097)	2.109*** (0.138)	2.016*** (0.157)	2.190*** (0.143)	1.739*** (0.134)	- 0.841** (0.104)	- 0.651** (0.064)	- 1.017** (0.089)
Friday	1.703*** (0.074)	2.450*** (0.097)	2.390*** (0.137)	2.689*** (0.157)	2.167*** (0.141)	2.131*** (0.134)	- 0.382** (0.104)	- 0.574** (0.063)	- 0.820** (0.088)
Saturday	- 1.358*** (0.075)	- 0.513*** (0.101)	-0.282(*) (0.164)	-0.420* (0.170)	- 0.797*** (0.166)	- 1.106*** (0.148)	- 0.196(*) (0.105)	0.140* (0.063)	- 0.255** (0.088)
Constant	2.974*** (0.053)	1.648*** (0.074)	1.379*** (0.105)	2.100*** (0.116)	1.842*** (0.104)	1.911*** (0.099)	5.052** (0.076)	4.620** (0.046)	4.826** (0.064)
R ²	0.899	0.888	0.721	0.718	0.726	0.751	0.331	0.506	0.423
F	417.577***	341.410***	108.629***	117.064***	116.086***	133.675***	24.891*	48.627*	35.562*
n	326	302	292	320	305	309	339	327	331

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Table 8.

	M, 11-12	T, 11-12	H, 11-12	M, 12-13	T, 12-13	H, 12-13	M, 13-14	T, 13-14	H, 13-14
Temperature	- 0.029** (0.003)	- 0.016** (0.002)	- 0.019** (0.003)	- 0.027** (0.003)	- 0.020** (0.002)	- 0.018** (0.002)	- 0.021* (0.003)	- 0.017** (0.003)	- 0.015** (0.003)
Monday	0.079 (0.111)	0.078 (0.078)	-0.211* (0.092)	0.277** (0.096)	-0.083 (0.071)	- 0.291** (0.089)	0.033 (0.111)	-0.103 (0.103)	- 0.451** (0.104)
Tuesday	-0.136 (0.112)	- 0.371** (0.078)	- 0.381** (0.092)	-0.006 (0.096)	- 0.416** (0.071)	- 0.266** (0.089)	- 0.313* (0.111)	- 0.381** (0.103)	- 0.488** (0.105)
Wednesday	-0.100 (0.111)	0.017 (0.079)	-0.062 (0.092)	0.223* (0.096)	-0.096 (0.072)	-0.088 (0.090)	-0.177 (0.112)	-0.109 (0.104)	- 0.416** (0.105)

Thursday	-0.439** (0.113)	-0.303** (0.079)	-0.801** (0.093)	-0.149 (0.098)	-0.155* (0.072)	-0.336** (0.091)	-0.106 (0.113)	-0.256* (0.104)	-0.019 (0.106)
Friday	-0.075 (0.112)	-0.303** (0.079)	-0.315** (0.092)	0.130 (0.097)	0.039 (0.072)	-0.176* (0.090)	0.015 (0.112)	-0.004 (0.104)	-0.270 (0.105)
Saturday	-0.109 (0.113)	0.059 (0.079)	-0.308** (0.092)	-0.064 (0.097)	-0.076 (0.072)	-0.196* (0.090)	-0.175 (0.112)	-0.052 (0.104)	-0.307** (0.105)
Constant	4.609** (0.083)	4.250** (0.058)	4.349** (0.067)	4.541** (0.071)	4.194 (0.053)	4.210** (0.066)	4.607** (0.083)	4.179** (0.077)	4.251** (0.078)
R ²	0.215	0.255	0.295	0.252	0.286	0.163	0.134	0.123	0.166
F	14.216***	16.998***	20.736***	17.110***	19.667***	10.139***	8.406**	7.734*	10.356***
n	339	328	331	336	327	330	335	326	329

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Table 9.

	M, 14-15	T, 14-15	H, 14-15	M, 15-16	T, 15-16	H, 15-16	M, 16-17	T, 16-17	H, 16-17
Temperature	-0.026* (0.004)	-0.022** (0.003)	-0.015** (0.003)	-0.026** (0.002)	-0.019** (0.002)	-0.015* (0.002)	-0.030** (0.003)	-0.017** (0.002)	-0.018** (0.002)
Monday	-0.118 (0.143)	0.113 (0.086)	-0.451** (0.104)	-0.039 (0.089)	0.336** (0.071)	-0.137 (0.087)	0.141 (0.122)	0.752** (0.080)	0.375** (0.081)
Tuesday	-0.466* (0.143)	0.102 (0.087)	-0.488** (0.105)	-0.053 (0.090)	0.399** (0.072)	0.020 (0.088)	0.345** (0.122)	0.868** (0.081)	0.607** (0.081)
Wednesday	-0.317 (0.143)	-0.071 (0.087)	-0.416** (0.105)	-0.077 (0.091)	0.305** (0.072)	-0.087 (0.088)	0.181 (0.122)	0.690** (0.081)	0.441** (0.082)
Thursday	-0.102 (0.147)	-0.199* (0.088)	-0.019 (0.106)	0.028 (0.092)	0.154* (0.073)	0.039 (0.089)	0.145 (0.124)	0.693** (0.082)	0.569** (0.083)
Friday	-0.143 (0.143)	0.022 (0.087)	-0.270** (0.105)	-0.036 (0.091)	0.137* (0.072)	-0.062 (0.088)	0.051 (0.123)	0.323** (0.081)	0.174* (0.082)
Saturday	-0.289* (0.144)	-0.063 (0.087)	-0.307** (0.105)	-0.327** (0.090)	-0.102 (0.072)	-0.229* (0.088)	-0.312* (0.124)	-0.477** (0.081)	-0.239** (0.082)
Constant	4.674** (0.107)	4.218** (0.065)	4.251** (0.078)	4.715** (0.067)	4.186** (0.054)	4.199** (0.065)	4.471** (0.092)	3.891** (0.060)	3.764** (0.061)
R ²	0.128	0.201	0.166	0.273	0.317	0.130	0.239	0.602	0.426
F	8.108**	12.577***	10.356***	18.857***	22.457***	8.013**	16.008***	70.766***	35.714***

n	340	324	329	334	324	329	336	324	328
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Table 4.

	M, 17-18	T, 17-18	H, 17-18	M, 18-19	T, 18-19	H, 18-19	M, 19-20	T, 19-20	H, 19-20
Temperature	- 0.022** * (0.004)	- 0.011** * (0.004)	- 0.015** * (0.004)	- 0.019** * (0.003)	- 0.014** * (0.002)	- 0.015** * (0.002)	- 0.015** * (0.003)	- 0.015** * (0.002)	- 0.008** * (0.002)
Monday	2.553** * (0.154)	3.625** * (0.152)	3.182** * (0.144)	2.959** * (0.096)	4.457** * (0.160)	4.249** * (0.088)	2.406** * (0.088)	4.322** * (0.306)	3.253** * (0.239)
Tuesday	2.596** * (0.154)	3.691** * (0.153)	3.399** * (0.144)	2.995** * (0.096)	4.420** * (0.160)	4.429** * (0.088)	2.443** * (0.088)	4.223** * (0.306)	3.346** * (0.238)
Wednesday	2.478** * (0.154)	3.387** * (0.153)	3.481** * (0.146)	2.964** * (0.097)	4.477** * (0.161)	4.123** * (0.089)	2.239** * (0.089)	4.195** * (0.306)	3.392** * (0.239)
Thursday	2.459** * (0.157)	3.740** * (0.156)	3.200** * 0.145	2.890** * (0.098)	4.398** * (0.161)	4.310** * (0.089)	2.301** * (0.090)	4.197** * (0.306)	3.292** * (0.239)
Friday	2.244** * (0.155)	3.319** * (0.154)	2.969** * (0.145)	2.464** * (0.097)	3.989** * (0.161)	3.847** * (0.089)	1.961** * (0.089)	3.924** * (0.306)	3.161** * (0.239)
Saturday	- 0.543** * (0.159)	- 0.473** * (0.181)	-0.040 * (0.159)	- 0.938** * (0.107)	-0.163 * (0.246)	0.715** * (0.207)	- 1.685** * (0.144)		- 0.256 * (0.405)
Constant	2.178** * (0.116)	0.843** * (0.120)	1.075** * (0.112)	1.822** * (0.072)	0.176 * (0.157)	0.187** * (0.079)	1.785** * (0.067)	-0.127 * (0.301)	0.361 * (0.233)
R ²	0.739	0.833	0.818	0.909	0.867	0.929	0.871	0.534	0.591
F	129.90 2***	204.44 2***	188.72 9***	428.33 1***	212.03 0***	447.06 4***	266.32 1***	43.47 8***	47.70 2
n	319	287	294	300	227	238	277	223	227

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Table 11.

	M, 20-21	T, 20-21	H, 20-21	M, 21-22
Temperature	-0.031*** * (0.005)	-0.016** * (0.006)	-0.006 * (0.004)	-0.013(*) * (0.007)
Monday	1.748*** * (0.394)		0.008 * (0.127)	0.127 * (0.253)
Tuesday	2.363*** * (0.394)	-0.256(*) * (0.150)	0.093 * (0.130)	0.101 * (0.202)
Wednesday	0.361 * (0.397)	-0.972*** * (0.176)	0.188 * (0.175)	0.069 * (0.229)
Thursday	1.470*** * (0.397)	-0.245(*) * (0.141)		0.320 * (0.300)
Friday	2.011*** * (0.395)	-0.640*** * (0.154)	0.111 * (0.137)	-0.078 * (0.218)
Saturday	-0.076 * (0.431)			0.051 * (0.217)
Constant	0.259*** * (0.384)	1.252*** * (0.101)	0.114 * (0.090)	0.126 * (0.186)

R ²	0.595	0.231	0.075	0.086
F	47.993***	9.518***	0.822	1.482
n	225	143	57	37

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2**Table 12.**

Location =Myyrmäki	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket	Gym + Swimming, multiple (30 days)	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket	Gym + Swimming, multiple (30 days)
Time	8-9	8-9	8-9	8-9	9 – 10	9 – 10	9 - 10	9 - 10
Temperature	-0.025** (0.009)	-0.035*** (0.009)	- 0.077** * (0.018)	-0.015** (0.005)	-0.014*** (0.003)	-0.078*** (0.014)	- 0.018 (0.017)	-0.016** (0.006)
Monday	7.483*** (0.276)	7.436*** (0.279)	5.459** * (0.559)	0.308(*) (0.166)	3.112*** (0.130)	4.448*** (0.613)	6.231*** (0.553)	0.306(*) (0.185)
Tuesday	7.428*** (0.273)	7.007*** (0.276)	6.538** * (0.554)	0.154 (0.165)	3.197*** (0.130)	4.936*** (0.610)	6.235*** (0.551)	0.305(*) (0.184)
Wednesday	7.554*** (0.275)	7.252*** (0.277)	4.575** * (0.557)	0.147 (0.165)	2.760*** (0.130)	4.882*** (0.611)	6.420*** (0.553)	0.006 (0.185)
Thursday	7.336*** (0.279)	6.629*** (0.282)	3.563** * (0.566)	-0.019 (0.168)	2.671*** (0.130)	3.230*** (0.615)	3.481*** (0.559)	-0.009 (0.186)
Friday	7.658*** (0.278)	7.477*** (0.280)	6.497** * (0.563)	-0.009 (0.167)	3.117*** (0.130)	4.759*** (0.614)	7.236*** (0.558)	0.146 (0.186)
Saturday	-2.404*** (0.281)	-1.372*** (0.284)	-0.136 (0.570)	-0.026 (0.169)	0.282 (0.189)	-2.480** (0.889)	- 0.018 (0.603)	-0.016 (0.201)
Constant	-4.422*** (0.199)	-5.421*** (0.201)	- 6.520** * (0.404)	-6.834 (0.120)	0.434*** (0.114)	-3.253*** (0.536)	- 6.818 *** (0.412)	-6.830*** (0.138)
R ²	0.896	0.873	0.486	0.020	0.789	0.418	0.519	0.023
F	400.409**	320.442**	44.963***	1.934(*)	137878**	27.237**	50.154	2.093
n	327	327	327	327	256	256	320	320

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1 **Table 13.**

Location =Myyrmäki	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket	Gym + Swimming, multiple (30 days)	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket	Gym + Swimming, multiple (30 days)
Time	10 -11	10 – 11	10 – 11	10 - 11	11- 12	11- 12	11 - 12	11 - 12
Temperature	-0.025** (0.009)	-0.035*** (0.009)	- 0.077** * (0.018)	-0.015** (0.005)	-0.036* (0.015)	-0.090*** (0.016)	- 0.035* (0.016)	-0.024** (0.008)
Monday	7.483*** (0.276)	7.436*** (0.279)	5.459** * (0.559)	0.308(*) (0.166)	7.594*** (0.471)	5.738*** (0.519)	- 1.565** (0.564)	-0.006 (0.270)
Tuesday	7.428*** (0.273)	7.007*** (0.276)	6.538** * (0.554)	0.154 (0.165)	7.904*** (0.469)	6.238*** (0.517)	- 2.007*** (0.567)	-0.140 (0.271)
Wednesday	7.554*** (0.275)	7.252*** (0.277)	4.575** * (0.557)	0.147 (0.165)	7.461*** (0.471)	6.182*** (0.519)	- 0.810 (0.564)	-0.023 (0.270)
Thursday	7.336*** (0.279)	6.629*** (0.282)	3.563** * (0.566)	-0.019 (0.168)	7.125*** (0.476)	4.369*** (0.524)	- 2.885*** (0.573)	-0.172 (0.274)
Friday	7.658*** (0.278)	7.477*** (0.280)	6.497** * (0.563)	-0.009 (0.167)	7.784*** (0.476)	6.006*** (0.524)	- 0.438 (0.570)	-0.154 (0.273)
Saturday	-2.404*** (0.281)	-1.372*** (0.284)	-0.136 (0.570)	-0.026 (0.169)	-0.686 (0.514)	1.222* (0.565)	- 0.342 (0.573)	0.144 (0.274)
Constant	-4.422*** (0.199)	-5.421*** (0.201)	- 6.520** * (0.404)	-6.834 (0.120)	-4.347*** (0.351)	-4.623*** (0.387)	1.227** (0.419)	-6.434 (0.201)
R ²	0.896	0.873	0.486	0.020	0.693	0.481	0.099	0.013
F	400.409* **	320.442* **	44.963 ***	1.934(*)	103.905* **	43.267** *	6.308 ***	1.631
n	327	327	327	327	320	320	339	339

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3 **Table 14.**

Location =Myyrmäki	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket	Gym + Swimming, multiple (30 days)	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket	Gym + Swimming, multiple (30 days)
Time	12 – 13	12 – 13	12 – 13	12 – 13	13 – 14	13 – 14	13 – 14	13 - 14

Temperature	-0.021*** (0.006)	-0.079*** (0.012)	-0.017 (0.016)	-0.030*** (0.007)	-0.014* (0.006)	-0.078*** (0.013)	- 0.039** (0.014)	-0.023*** (0.006)
Monday	0.075 (0.214)	0.403 (0.411)	-0.799 (0.546)	0.283 (0.257)	-0.518* (0.218)	0.371 (0.443)	- 0.877(*) (0.506)	-0.145 (0.224)
Tuesday	-0.163 (0.214)	-1.041 (0.411)	- 3.044** * (0.546)	0.268 (0.257)	-0.755*** (0.218)	-0.144 (0.443)	- 2.294*** (0.506)	-0.032 (0.224)
Wednesday	0.009 (0.215)	0.023 (0.413)	-0.636 (0.549)	-0.010 (0.259)	-0.539* (0.219)	0.231 (0.446)	- 1.508** (0.509)	-0.313 (0.225)
Thursday	-0.037 (0.217)	-0.374 (0.418)	- 3.200** * (0.555)	-0.040 (0.262)	-0.767*** (0.222)	0.315 (0.451)	- 0.480 (0.515)	-0.174 (0.227)
Friday	-0.026 (0.216)	-0.469 (0.415)	-0.689 (0.552)	-0.032 (0.260)	-0.316 (0.221)	0.535 (0.448)	- 0.370 (0.512)	-0.168 (0.226)
Saturday	-0.100 (0.216)	-0.410 (0.415)	0.114 (0.552)	-0.028 (0.260)	-0.418* (0.219)	-0.010 (0.446)	- 0.613 (0.509)	-0.149 (0.225)
Constant	3.432*** (0.158)	1.635*** (0.305)	1.087** (0.405)	-6.517*** (0.191)	3.772 (0.163)	0.967** (0.332)	1.320*** (0.379)	-6.418*** (0.167)
R ²	0.018	0.132	0.166	0.035	0.042	0.093	0.078	0.024
F	2.141(*)	8.309***	10.542***	2.748**	3.109**	5.918***	5.062***	2.161*
n	336	336	336	336	335	335	335	335

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Table 15.

Location = Myyrmäki	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket	Gym + Swimming, multiple (30 days)	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket	Gym + Swimming, multiple (30 days)
Time	14 - 15	14 - 15	14 - 15	14 - 15	15 - 16	15 - 16	15 - 16	15 - 16
Temperature	-0.035*** (0.010)	-0.084*** (0.013)	- 0.083** (0.015)	-0.018** (0.006)	-0.027*** (0.007)	-0.054*** (0.009)	- 0.068** (0.010)	-0.022*** (0.006)
Monday	-0.621(*) (0.356)	0.100 (0.454)	0.591 (0.539)	0.142 (0.222)	-0.676** (0.233)	0.546(*) (0.327)	-0.182 (0.363)	0.174 (0.224)
Tuesday	-0.828* (0.356)	-0.677 (0.454)	- 1.032(*)	-0.016 (0.222)	-0.652** (0.234)	0.588(*) (0.328)	-0.003 (0.365)	0.160 (0.225)

			(0.539)					
Wednesday	-0.894* (0.356)	-0.152 (0.457)	0.305 (0.541)	-0.148 (0.223)	-0.582** (0.236)	0.428 (0.332)	-0.186 (0.369)	-0.005 (0.227)
Thursday	-0.253 (0.366)	-0.287 (0.467)	0.766 (0.554)	0.001 (0.228)	-0.458(*) (0.239)	0.536 (0.335)	-0.274 (0.373)	-0.015 (0.230)
Friday	-0.508 (0.358)	-0.045 (0.457)	-0.131 (0.541)	-0.001 (0.223)	-0.368 (0.236)	0.549(*) (0.332)	0.219 (0.369)	-0.151 (0.227)
Saturday	-0.454 (0.360)	-0.173 (0.459)	1.186* (0.544)	0.162 (0.224)	-0.759*** (0.235)	-0.304 (0.330)	-0.082 (0.367)	-0.001 (0.226)
Constant	3.800*** (0.268)	1.356*** (0.342)	0.410 (0.405)	-6.607*** (0.167)	3.888*** (0.175)	1.151*** (0.246)	1.549* ** (0.274)	-6.570*** (0.169)
R ²	0.041	0.106	0.118	0.012	0.068	0.112	0.107	0.025
F	3.089**	6.713***	7.455* **	1.575	4.496***	6.975***	6.717* **	2.212*
n	340	340	340	340	334	334	334	334

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Table 16.

Location = Myyrmäki	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket	Gym + Swimming, multiple (30 days)	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket	Gym + Swimming, multiple (30 days)
Time	16 - 17	16 - 17	16 - 17	16 - 17	17 - 18	17 - 18	17 - 18	17 - 18
Temperature	-0.034*** (0.008)	-0.102*** (0.012)	- 0.086* ** (0.013)	-0.017*** (0.005)	-0.011 (0.013)	-0.057*** (0.012)	- 0.020(*) (0.010)	-0.016** (0.006)
Monday	0.070 (0.281)	2.626*** (0.451)	1.311** (0.461)	-0.027 (0.190)	6.619*** (0.479)	8.176*** (0.431)	8.024*** (0.386)	0.483* (0.213)
Tuesday	0.025 (0.281)	2.785*** (0.451)	1.971* ** (0.461)	-0.163 (0.190)	6.685*** (0.479)	7.810*** (0.431)	8.462*** (0.386)	0.180 (0.213)
Wednesday	-0.166 (0.281)	2.116*** (0.451)	1.265* * (0.461)	-0.145 (0.190)	6.329*** (0.479)	7.354*** (0.432)	7.724*** (0.386)	0.025 (0.213)
Thursday	-0.248 (0.285)	2.419*** (0.458)	1.437* * (0.469)	-0.319(*) (0.193)	6.513*** (0.489)	7.692*** (0.440)	7.707*** (0.394)	0.004 (0.217)
Friday	-0.247 (0.282)	1.927*** (0.453)	1.325* * (0.464)	-0.302 (0.191)	6.146*** (0.482)	7.051*** (0.434)	7.014*** (0.388)	0.327 (0.214)
Saturday	-0.587* (0.284)	-0.470 (0.456)	- 0.895(*)) (0.466)	-0.307 (0.192)	-0.150 (0.495)	2.057*** (0.445)	0.159 (0.398)	0.009 (0.220)

Constant	3.382*** (0.210)	-0.438 (0.338)	0.176 (0.346)	-6.457*** (0.142)	-3.185*** (0.362)	-5.976*** (0.326)	- 6.588*** (0.291)	-6.797*** (0.161)
R ²	0.055	0.326	0.220	0.028	0.615	0.683	0.778	0.031
F	3.806***	24.158** *	14.492 ***	2.354	73.634	98.735** *	160.150 ***	2.450*
n	336	336	336	336	319	319	319	319

1
2**Table 17.**

Location =Myyrmäki	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket	Gym + Swimming, multiple (30 days)	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket	Gym + Swimming, multiple (30 days)
Time	18 – 19	18 – 19	18 – 19	18 – 19	19 – 20	19 – 20	19 – 20	19 – 20
Temperature	-0.021** (0.008)	-0.060*** (0.009)	-0.011** (0.005)	-0.017** (0.006)	-0.032** (0.010)	-0.055*** (0.013)	-0.010 (0.014)	-0.006 (0.005)
Monday	9.150*** (0.285)	8.473*** (0.327)	8.650*** (0.165)	0.337 (0.231)	7.103*** (0.349)	6.957*** (0.427)	7.514* ** (0.461)	0.168 (0.161)
Tuesday	9.359*** (0.283)	8.317*** (0.325)	8.789*** (0.164)	0.335 (0.230)	7.035*** (0.347)	7.867*** (0.425)	8.077* ** (0.459)	0.150 (0.161)
Wednesday	9.322*** (0.288)	7.518*** ** (0.330)	8.657*** (0.166)	0.182 (0.233)	6.866*** (0.352)	7.493*** (0.431)	6.433* ** (0.466)	0.006 (0.163)
Thursday	9.245*** (0.290)	7.938 (0.334)	8.619*** (0.168)	0.171 (0.236)	6.969*** (0.356)	7.730*** (0.436)	7.259* ** (0.470)	0.161 (0.165)
Friday	8.666*** (0.288)	7.546*** (0.330)	7.764*** (0.166)	0.185 (0.233)	6.387*** (0.352)	6.499*** (0.431)	5.602* ** (0.466)	0.008 (0.163)
Saturday	-0.500 (0.317)	0.093 (0.364)	0.006 (0.183)	0.009 (0.257)	-1.320* (0.571)	0.021 (0.699)	0.004 (0.754)	0.002 (0.264)
Constant	-5.599*** (0.214)	-6.347*** (0.245)	- 6.840*** (0.123)	-6.801*** (0.173)	-3.989*** (0.266)	-6.562*** (0.325)	- 6.844* ** (0.351)	-6.871*** (0.123)
R ²	0.901	0.834	0.957	0.012	0.744	0.676	0.628	0.017
F	387.856* **	214.938* **	959.540 ***	1.498	115.712* **	83.219** *	67.702 ***	0.648
n	300	300	300	300	277	277	277	277

3

4

1 **Table 18.**

Location =Myyrmäki	Swimming, single ticket	Swimming, multiple ticket (30 days)	Gym, single ticket
Time	20 - 21	20 - 21	20 - 21
Temperature	-0.058* (0.026)	-0.044* (0.022)	0.002 (0.007)
Monday	3.342 (2.127)	2.120 (1.864)	0.156 (0.567)
Tuesday	2.102 (2.126)	2.527 (1.863)	0.169 (0.567)
Wednesday	-0.669 (2.140)	3.446 (1.875)	0.186 (0.570)
Thursday	3.201 (2.141)	2.576 (1.876)	0.188 (0.571)
Friday	1.135 (2.129)	0.723 (1.865)	0.003 (0.567)
Saturday	-1.934 (2.326)	-0.200 (2.038)	0.008 (0.620)
Constant	-4.124* (2.070)	-6.537*** (1.814)	-6.922*** (0.552)
R ²	0.166	0.089	0.007
F	7.352***	4.108***	0.209
n	225	225	225

2

3

Table 19.

Location =Hakunila	Gym, single ticket	Gym, single ticket	Gym, single ticket	Gym, single ticket	Gym, single ticket	Gym, single ticket	Gym, single ticket	Gym, single ticket
Time	14 – 15	15 – 16	16 – 17	17 – 18	18 – 19	19 – 20	20 - 21	21 - 22
Temperature	- 0.107*** (0.015)	- 0.096*** (0.017)	-0.021 (0.017)	-0.011 (0.013)	-0.024 (0.016)	-0.002 (0.022)	0.001 (0.012)	
Monday	-0.167 (0.553)	0.102 (0.642)	2.251*** (0.639)	6.822*** (0.512)	7.109*** (0.827)	6.081* (2.463)	-0.404 (0.346)	
Tuesday	-0.354 (0.556)	0.531 (0.646)	2.679*** (0.643)	7.072*** (0.512)	7.107*** (0.825)	5.230* (2.462)	-0.403 (0.355)	
Wednesday	-0.611 (0.559)	0.329 (0.646)	2.565*** (0.646)	6.856*** (0.520)	7.394*** (0.831)	4.726(*) (2.465)	-0.401 (0.480)	
Thursday	-0.729 (0.559)	-0.404 (0.653)	3.081*** (0.650)	7.212*** (0.517)	7.010*** (0.832)	5.742* (2.465)		
Friday	-0.791 (0.556)	-0.377 (0.646)	1.547* (0.643)	5.985*** (0.517)	6.721*** (0.831)	5.221* (2.466)	-0.406 (0.374)	
Saturday	-1.642** (0.556)	-0.377 (0.646)	0.161 (0.643)	-0.024 (0.566)	-0.104 (1.945)	0.029 (4.178)		
Constant	1.356*** (0.413)	0.156 (0.480)	- 2.725*** (0.477)	-6.827*** (0.400)	-6.794*** (0.739)	- 6.903** (2.408)	- 6.512*** (0.246)	
R ²	0.144	0.078	0.106	0.605	0.289	0.020	0.042	
F	8.871***	4.972***	6.544***	65.121***	14.745***	1.666	0.811	
n	329	329	328	294	238	227	57	

4

1 **Table 5.**

	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16
Location	Myyrmä ki	Hakuni la	Myyrmä ki	Hakuni la	Myyrmä ki	Hakuni la	Myyrmä ki	Hakuni la
Time	6 – 7	6 – 7	7- 8	7 – 8	8- 9	8- 9	9 – 10	9 - 10
Temperature	-0.003 (0.017)	0.013 ^(*) (0.008)	-0.018 (0.013)	-0.003 (0.008)	-0.052 ^{**} (0.016)	-0.011 (0.010)	-0.043 [*] (0.020)	-0.015 (0.010)
Monday	0.656 (1.574)	-0.296 (0.207)	0.947 [*] (0.458)	0.153 (0.267)	0.649 (0.501)	0.323 (0.321)	1.762 ^{**} (0.648)	0.582 ^(*) (0.314)
Tuesday	0.450 (1.572)	-0.151 (0.205)	0.285 (0.454)	0.290 (0.264)	1.019 [*] (0.496)	0.310 (0.319)	1.236 ^(*) (0.645)	0.295 (0.314)
Wednesday	0.691 (1.572)		0.304 (0.457)	0.432 (0.264)	0.436 (0.499)	0.755 [*] (0.321)	0.608 (0.648)	0.583 ^(*) (0.216)
Thursday	0.456 (1.575)	-0.277 (0.209)	0.474 (0.460)	0.155 (0.269)	5.928 ^{***} (0.507)	0.168 (0.323)	5.912 ^{***} (0.654)	0.140 (0.318)
Friday	1.152 (1.574)	0.012 (0.207)	0.907 [*] (0.458)	0.151 (0.266)	0.836 (0.504)	0.463 (0.321)	3.848 ^{***} (0.654)	0.615 (0.317)
Saturday	0.006 (1.780)		0.011 (0.507)	-0.010 (0.408)	-0.091 (0.511)	-0.008 (0.384)	-0.043 (0.706)	-0.031 (0.350)
Constant	-6.895 ^{***} (1.543)	- 6.671 ^{**} * (0.148)	-6.834 ^{***} (0.379)	- 6.896 ^{**} * (0.206)	-6.647 ^{***} (0.362)	- 6.880 ^{**} * (0.245)	-6.697 ^{***} (0.483)	- 6.826 ^{**} * (0.235)
R ²	0.017	0.007	0.018	0.014	0.387	0.007	0.300	0.014
F	0.568	1.348	1.755 ^(*)	0.542	30.451 ^{**} *	1.289	20.505 ^{**} *	1.609
n	244	232	289	276	327	292	320	309

2
3**Table 21.**

	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16
Location	Myyrmä ki	Hakuni la	Myyrmä ki	Hakuni la	Myyrmä ki	Hakuni la	Myyrmä ki	Hakuni la
Time	10 – 11	10 – 11	11 – 12	11 – 12	12 – 13	12 – 13	13 – 14	13- 14
Temperature	-0.052 ^{**} (0.019)	-0.030 [*] (0.013)	-0.041 [*] (0.017)	- 0.045 ^{**} * (0.012)	-0.042 [*] (0.018)	-0.010 (0.011)	-0.058 ^{***} (0.018)	- 0.016 ^(*) (0.008)
Monday	0.798 (0.622)	0.766 ^(*) (0.449)	1.361 [*] (0.596)	1.018 [*] (0.448)	1.751 ^{**} (0.616)	0.732 ^(*) (0.384)	1.719 ^{**} (0.615)	0.599 ^(*) (0.310)
Tuesday	1.477 [*] (0.625)	-0.264 (0.449)	6.123 ^{***} (0.599)	0.997 [*] (0.448)	5.785 ^{***} (0.616)	0.442 (0.384)	6.012 ^{***} (0.615)	0.440 (0.312)
Wednesday	0.331 (0.628)	1.187 [*] (0.452)	1.176 [*] (0.596)	1.016 [*] (0.451)	0.724 (0.620)	0.434 (0.386)	1.298 [*] (0.618)	0.432 (0.312)
Thursday	5.811 ^{***} (0.628)	-0.304 (0.454)	2.867 ^{***} (0.605)	1.608 ^{**} * (0.453)	2.702 ^{***} (0.627)	1.385 ^{**} * (0.391)	3.062 ^{***} (0.625)	0.445 (0.316)
Friday	3.857 ^{***} (0.628)	0.501 (0.452)	1.845 ^{**} (0.602)	1.033 [*] (0.451)	1.700 ^{**} (0.623)	1.038 ^{**} (0.386)	1.470 [*] (0.621)	0.309 (0.312)
Saturday	-0.318 (0.632)	-0.295 (0.452)	0.131 (0.605)	0.129 (0.451)	-0.163 (0.623)	-0.004 (0.386)	0.557 (0.618)	0.141 (0.312)
Constant	-6.145 ^{***} (0.459)	- 6.135 ^{**} * (0.329)	-6.617 ^{***} (0.443)	- 6.573 ^{**} * (0.330)	-6.288 ^{***} (0.457)	- 6.823 ^{**} * (0.285)	-6.431 ^{***} (0.430)	- 6.773 ^{**} * (0.231)

R ²	0.319	0.055	0.302	0.072	0.278	0.044	0.285	0.006
F	23.621** *	3.729** *	21.885** *	4.653** *	19.395** *	3.163**	19.989** *	1.262
n	339	331	339	331	336	330	335	329

1

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Table 22.

	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16	Gym, single ticket 6- 16
Location	Myyrmäki	Hakunila	Myyrmäki	Hakunila
Time	14 – 15	14 – 15	15 – 16	15 - 16
Temperature	0.002 (0.015)	-0.030** (0.010)	-0.029* (0.014)	-0.009 (0.011)
Monday	1.296* (0.532)	2.352*** (0.388)	1.257* (0.514)	0.587 (0.423)
Tuesday	1.146* (0.532)	1.021** (0.390)	2.020*** (0.517)	1.048* (0.425)
Wednesday	1.047(*) (0.535)	0.438 (0.392)	1.218* (0.522)	0.883* (0.425)
Thursday	2.322*** (0.547)	0.443 (0.392)	2.286*** (0.528)	0.317 (0.430)
Friday	2.049*** (0.535)	0.283 (0.390)	1.054* (0.522)	0.151 (0.425)
Saturday	0.004 (0.538)	-0.012 (0.390)	0.431 (0.519)	-0.144 (0.425)
Constant	-6.786*** (0.401)	-6.639*** (0.290)	-6.655*** (0.388)	-6.538*** (0.315)
R ²	0.071	0.146	0.073	0.021
F	4.692***	8.894***	4.729***	2.003(*)
n	340	329	334	329

3

4

5