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Weather and summit success on Denali: Evidence from daily weather data

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Abstract

This study examines the relationship between daily weather conditions and daily summit success on Denali, the highest peak in North America, using data from the 2015 to 2023 climbing seasons. Combining hand collected Field Report data with hourly observations from the 14,200 foot camp weather station, the highest station operating on the mountain during this period, we construct a measure of new summits per day as a percent of registered climbers and test its association with temperature, wind speed, and calendar date. Higher temperatures at 14,200 foot camp are associated with significantly higher summit success rates across all model specifications, while higher wind speeds show a weaker and less consistent negative association once calendar controls are included. Time based variables, including a quadratic specification and semi monthly and weekly dummies, explain substantially more of the variance in summit success than weather alone, with predicted summit success peaking in early to mid June. These findings suggest that while weather conditions at high camp meaningfully influence daily summit outcomes, private and guided expeditions can improve their odds of success by scheduling attempts for early June, well before reliable short range weather forecasts become available. This is the first study to analyze daily weather data alongside daily summit success rates on Denali.

Keywords: Climbing, Denali, Highpointing, Mount McKinley, Mountaineering, Seasonality, Seven Summits, Weather

JEL Classification: Q54, Z20, Z30

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1. Introduction

This is the first paper to look at the association between daily weather conditions on Mt. McKinley and the number of summits per day. Mt. McKinley, also known as Denali, at 20,310 feet (6,190 meters) in elevation is the highest point in North America. According to Wilson (2026), over 1,000 climbers attempted the summit annually from 2015 to 2023. Nevertheless, prior to this paper, no study has looked at the association between daily weather conditions and summit success. We find there is a statistically significant association between the percent of climbers summitting on a given day and the temperature high on the mountain. Higher temperatures at 14,200-foot camp are associated with a higher probability of summits around that day. We find a sometimes statistically significant negative association between wind speeds and daily summits.

Mt. McKinley, previously named Denali, is a major commercial mountaineering objective. American Alpine Institute (2026) says guided climbers often pay more than $12,000 for a chance at the summit in what are typically 17-to-21-day expeditions, according to National Park Service (2025a). According to Arnette (2024), Denali (Mt. McKinley) is one of the Seven Summits, the highest summits on each of the seven continents. It is listed on the Bass and Messner definitions of the Seven Summits. National Park Service (2025b) and National Park Service (2025c) write that its name has alternated between Mt. McKinley and Denali. Denali is the Native Alaskan name of the peak. Since 2025, the mountain has been officially named Mt. McKinley, but the name of the national park in which it is located did not change from Denali National Park in 2025, according to National Park Service (2025c).

2. Literature Review

This study is the first to associate daily weather data with daily summit success rates. Wilson (2026) looks at summit success rates by dates using a quadratic model, semi-monthly dummies, and weekly dummy variables in the April to July Mt. McKinley (Denali) climbing season. Wilson (2026) finds summit success peaks the first three weeks in June. Wilson (2025) looked at a smaller sample of 50 U.S. state high point completers, "50-completers", than Wilson (2026) which relied on the larger Gualtieri (2024) data set as we do. Wilson (2025) finds most of the 44 50-completers, who finished their high points with Denali, reached the summit in June. In contrast to Wilson (2026) and Wilson (2025), the present study looks at weather data and its association with Denali or Mt. McKinley summit success rates. Washburn (1952) argued that Mt. McKinley generates its own weather and is susceptible to storms coming from Cook Inlet leading to large accumulations of snow on the north slopes, but limited snow on its southeastern faces. Hartl (2023) writes during our sample period of 2015 to 2023 that the highest weather station on Denali was the 14,200-foot station, which is the source of our weather data here. There was a higher station at 18,750 feet of elevation, which provided data for Hartl *et al.* (2020a) and Hartl *et al.* (2020b). The 18,750-foot weather station near Denali Pass was no longer operational after 2007. Unfortunately, the daily summit data is based on Gualtieri (2024)'s Field Reports which only go back to 2015.

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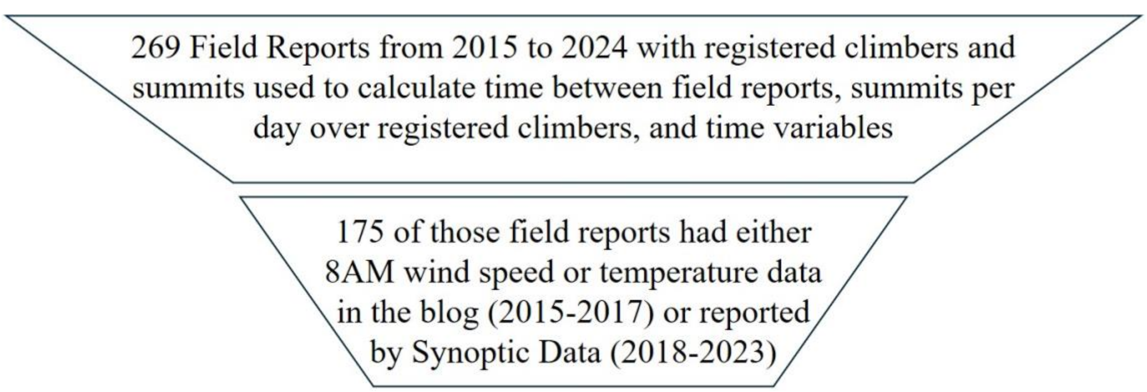
Like this study, Hartl *et al.* (2020a) and Hartl *et al.* (2020b) look at wind and temperature data on the West Buttress, standard, route of Denali. Hartl *et al.* (2020a) and Hartl *et al.* (2020b) do not look at summit success data. Hartl *et al.* (2020a) found that very windy days during the April to July Denali climbing season have declined over time, making high winds less of a barrier to summit success on the standard, West Buttress route. Hartl *et al.* (2020a) found that the number of cold days in the April to July climbing season below -30 Centigrade (30 C) over their sample period declined. Hartl *et al.* (2020b) found that temperatures at the altitude of 18,750 feet on Mt. McKinley (Denali) were the highest in July of the climbing season. The average temperatures at that altitude were -27 C, -19 C, and -18 C in May, June, and July, respectively. Thus, temperatures rise dramatically in June but only rise one degree on average in July.

This is not the only study to look at factors associated with summit success on Denali. Shea *et al.* (2016) found that climbers who summitted had a significantly quicker climb to 14,000-foot camp, were significantly less likely to suffer from prior altitude illness, and could walk significantly farther in six minutes at 14,000 feet. It seems climber speed and a lack of prior altitude sickness was positively correlated with summit success in Shea *et al.* (2016). McIntosh *et al.* (2010b) found that summit success from 1990 to 2008 was positively associated with being male, younger, and coming from North America. About one percent of registered climbers received a search and rescue response from 1990 to 2008 according to McIntosh *et al.* (2010a). McIntosh *et al.* (2008) found fatality rates per 1,000 climbers declined from 1970 to 2006 from over 1.6 percent to 0.1 percent of climbers in 1970 and 2006, respectively. The leading cause of death was falls followed by hypothermia. Weber (2012) writes, for example, that there were nine deaths in 2011, with falls accounting for over half of climbing deaths on Denali.

3. Methodology

Most of our data comes from the Denali Dispatches blogs begun before the 2015 season.

Figure 1. Sample Selection Criteria



The field reports written by Maureen Gualtieri, Mountaineering Administration and Public Information Officer at the Denali National Park went through the 2024 season. They are referred

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to as Gualtieri (2024). In 2025, Maureen Gualtieri stopped writing the Field Reports, and that season lacked the data which was provided from 2015 to 2024. There were no climbers in 2020 due to COVID-19 restrictions. Thus, we had data from nine climbing seasons. During the years studied the official name of the mountain was Denali. Data from Gualtieri (2024) was hand-collected and it contained the dates of the field report, weather conditions, registered climbers, climbers on the mountain, and summits. We used 269 field reports from 2015 to 2024 for this data.

In Table 1, we have summary statistics for merged weather data from Gualtieri (2024) and Synoptic Data's hourly weather observations from 14,200-foot camp.

Table 1. 14,200 Foot Camp Weather Summary Statistics, 2015 to 2023

Statistic	Temperature (°F)	Wind Direction (°)	Wind Speed (mph)	Wind Gust (mph)	Low Temperature (°F)	High Temperature (°F)	24 Hour Snowfall (in.)
Average	2.79	104.41	4.72	14.13	0.92	7.53	1.61
Median	3.00	83.20	3.10	9.40	0.50	7.00	0.00
Mode	0.00	45.00	0.00	8.00	12.00	0.00	0.00
Minimum	−24.70	0.00	0.00	0.00	−26.00	−18.00	0.00
Maximum	31.50	352.20	32.00	80.00	19.00	28.00	12.99
SD	10.70	88.48	5.03	12.62	8.80	8.60	2.62
n	172	144	170	174	78	78	77

Note. All statistics are drawn from Synoptic Data hourly observations and Gualtieri (2024) Field Report data at the 14,200 foot camp weather station, the highest operating weather station on Denali during the sample period. Temperature is measured in degrees Fahrenheit, wind direction in degrees, wind speed and wind gust in miles per hour, and snowfall in inches. Sample sizes vary by variable because high and low temperature and snowfall data were reported only in Field Reports from 2015 to 2017. SD = standard deviation.

Since Gualtieri (2024) reported 8 AM weather observations from 2015 to 2017, we combine those values with the observations from Synoptic Data, which are available from 2018 to 2023 during the sample period. Observations are dates of Field Reports in which we had weather data. We have no weather data for 2024 to match with the Field Report data for that year. There was no climbing

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on Denali in 2020 due to COVID-19 restrictions. Thus, our sample only includes field report and weather data from 2015, 2016, 2017, 2018, 2019, 2021, 2022, and 2023. Only temperature, wind speed, and wind gust speed have over 170 observations in this sample according to table 1. Much of the weather data was only available in the field reports from 2015 to 2017. Those variables were high temperature, low temperature, and 24-hour snow fall accumulation. That means, high and low temperatures and snow fall all have less than 80 observations, making it significantly harder to draw inferences about those weather variables and inferences are limited to three climbing seasons not eight.

On average, during the season it was 3 F (Fahrenheit) at 14,200-foot camp. The modal temperature was zero and the range was -24.7 F to 31.5 F. Wind speeds ranged from 0 to 32 mph (miles per hour) with an average of 4.7 mph. Wind gusts averaged 14.1 mph with a range of 0 to 80 mph. High and low temperatures averaged 7.5 F to 0.9 F. 24-hour snow fall was on average 1.6 inches with a range of 0 to 13.0 inches.

Table 2. Summary Statistics of Denali Dispatches Field Reports, 2015 to 2023

Statistic	Registered Climbers	Number of Summits	Time Between Field Reports (days)	New Summits Per Day	New Summits Per Day Over Registered Climbers
Average	1,044.63	202.39	2.75	9.17	1.16%
Median	1,051	111	2	4	0.51%
Mode	1,084	0	1	0	0.00%
Minimum	785	0	1	0	0.00%
Maximum	1,239	793	9	52	6.53%
SD	102.36	224.81	1.87	12	1.48%
n	175	175	171	171	171

Note. Observations are dates for which both Field Report data and 14,200 foot camp weather data are available, excluding 2020 due to COVID-19 climbing restrictions and 2024 due to unavailable weather data. New Summits Per Day is the change in cumulative summits between consecutive Field Reports divided by the number of days between reports. SD = standard deviation.

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Observations in Table 2 are dates where we have both one piece of weather data, and Field Report data. There was no weather data in 2024 thus the sample only goes from 2015 to 2023, excluding the COVID-19-year, 2020. Register climbers averaged 1,045 and summits averaged 202. There was on average 2.75 days between field reports.

The dependent variable in the subsequent regression analysis is “New Summits Per Day Over Registered Climbers”. It is constructed from the “Time Between Field Reports”. That is the number of days that passed from between the current and previous Field Report within a season. The change in field reports divided by the time between field reports is the “New Summits Per Day” which averaged 9.2 and ranged from 0 to 52. “New Summits Per Day Over Registered Climbers” is just the new summits per day divided by registered climbers. There were only 171 observations of “New Summits Per Day Over Registered Climbers” with weather data from 2015-2019 and 2021-2023. “New Summits Per Day Over Registered Climbers” ranged from 0.0 percent to 6.5 percent. The average daily summit rate was 1.2 percent with a median if 0.5 percent. For convenience, we will refer to “New Summits Per Day Over Registered Climbers” as the summit success rate. We want to test two main hypotheses with respect to daily weather and daily summit success rates.

Hypothesis 1

H1. Higher temperatures at 14,200-foot camp are associated with higher summit success rates.

Summit temperatures are assumed to be positively correlated with 14,200 camp temperatures. Higher temperatures will allow climbers to climb longer without suffering from frostbite and hypothermia. That will allow strong and marginal climbing teams more time to reach the summit and return to high camp.

Hypothesis 2

H2. Higher wind speeds at 14,200-foot camp are associated with lower summit success rates.

Summit windspeeds are assumed to be positively correlated with 14,200 camp wind speeds. Higher windspeed makes climbing more dangerous. Higher winds will increase wind chill and accelerate frostbite and hypothermia. That will give strong and marginal climbing teams less time to reach the summit and return to high camp. Other factors than temperature and windspeed on a given date may be associated with summit success. For example, early in the season, snow may be harder with colder temperatures and snowshoes may not be needed lower on the mountain. By late June or July, rain is not uncommon below 8,000 feet, making snowshoes necessary and lower mountain travel slow. Early in the season snow bridges over crevasses may be firm and stable, but later in the season snow bridges sag and crevasse falls may become more likely, forcing climbers to take longer alternate routes or proceed more slowly. Controlling for the date of the year, which we will refer to as “Time”, may be a proxy for other factors associated with the date other than temperature and wind speed.

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Wilson (2026) found that summit success was significantly more likely in the month of June than either May or July, the two other months of the Denali West Buttress climbing season tracked by Gualtieri (2024). We use the time dummy variable definitions of Wilson (2026), but our sample size is smaller because we restrict observations to dates of Field Reports with weather data. Wilson (2026) uses a quadratic model, a semi-monthly dummy model, and a weekly dummy model to determine which calendar days are more likely to see summit success. For the quadratic model time "Time" is measured days between the present field report and April 19, of the current season. April 19 was the date of the earliest field report with data in Gualtieri (2024). Time squared "Time^2" helps test for if there is a date that maximizes summit success.

In Table 3 panel A, we have the quadratic time measures, "Time" and "Time^2", as well as the semi-monthly dummy variables defined in Wilson (2026). In our sample, the average number of days from April 19 was 47. Time ranged from 5 to 89 days. There is no semi-monthly dummy for dates prior to May 1. 13, 28, 24, 22, and 11 percent of the sample of 175 Field Reports lies within May 1-15, May 16-31, June 1-15, June 16-30, and July 1 onward, respectively.

Table 3. Panel A: ***Quadratic Time and Semi Monthly Dummy Variables***

Statistic	Time	Time²	Dummy May 1–15	Dummy May 16–31	Dummy June 1–15	Dummy June 16–30	Dummy July 1 Onward
Average	47.21	2606.42	0.1314	0.2800	0.2400	0.2171	0.1086
Median	46	2116.00	0	0	0	0	0
Mode	48	2304.00	0	0	0	0	0
Minimum	5	25.00	0	0	0	0	0
Maximum	89	7921.00	1	1	1	1	1
SD	19.50	1878.24	0.3388	0.4503	0.4283	0.4135	0.3120
n	175	175	175	175	175	175	175

The weekly dummy variables have summary statistics in tables 3, panel B and C. Over three-quarters of the observations are between May 15 to July 3.

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Panel B: Weekly Dummy Variables, April 19 to June 4

Statistic	Dummy Pre May	Dummy May 1–7	Dummy May 8–14	Dummy May 15–21	Dummy May 22–28	Dummy May 29–June 4
Average	0.0229	0.0514	0.0571	0.1257	0.1143	0.1314
Median	0	0	0	0	0	0
Mode	0	0	0	0	0	0
Minimum	0	0	0	0	0	0
Maximum	1	1	1	1	1	1
SD	0.1499	0.2215	0.2328	0.3325	0.3191	0.3388
n	175	175	175	175	175	175

Panel C: Weekly Dummy Variables, June 5 to July 22

Statistic	Dummy June 5–11	Dummy June 12–19	Dummy June 20–26	Dummy June 27–July 3	Dummy July 4–10	Dummy July 11 Onward
Average	0.1143	0.0857	0.0971	0.1200	0.0629	0.0114
Median	0	0	0	0	0	0
Mode	0	0	0	0	0	0
Minimum	0	0	0	0	0	0
Maximum	1	1	1	1	1	1
SD	0.3191	0.2807	0.2970	0.3259	0.2434	0.1066
n	175	175	175	175	175	175

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Note. Time is measured in days between April 19, the date of the earliest Field Report in the sample, and the date of the current Field Report. Dummy variables equal 1 if the Field Report date falls within the labeled window and 0 otherwise. SD = standard deviation.

4. Results and Discussion

In Tables 4 and 5, we conduct ordinary least squares (OLS) regressions where summit success rates are measured by the dependent variable of new summits per day as a percent of registered climbers. There are at least two lags in the summit data, which does not apply to the weather data in the Field Reports or the Synoptic Data. First, there is an on average 2.75 day lag between Field Reports, according to table 2. In addition, summits are not reported to the NPS rangers until a party checks out in Talkeetna. Gautieri (2024) likely could not record summits until they checked into the ranger station in Talkeetna after the climbing teams had both descended the mountain to base camp and caught a flight (weather permitting) to Talkeetna. Since climbing teams are obligated to turn in clean mountain cans (contaning human feces) at that ranger station in Talkeetna, it is unlikely that teams delayed checking out with Talkeetna rangers once their planes landed in the town.

National Park Service (2025a) implies that the typical descent from the summit takes two to six days. Shikhar Blog (2026) estimated the descent and flight to Talkeetna takes three days. The author's informal observations of groups from the summit, 14,200-camp to base camp indicates a two-day descent is closer to typical. The author descended relatively slowly after summiting Mt. McKinley in five days with a two-day delay in flying out of base camp due to weather, for a total of seven days from summit to checking out in Talkeetna. Taking an average of National Park Service (2025a)'s and Shikhar Blog (2026)'s observations, $[(2+6)/2 + 3]/2 = 3.5$, 3.5 days seems like the average number of days to get to Talkeetna and report the summit success or failure to be recorded in the next field report. That is a lag of approximately one Field Report in addition to the reporting lag of one Field Report on average. For this reason, we lag weather data by two Field Reports. Weather data on a given date, on average, is relevant for summits dated two field reports ahead. Thus, if a two Field Report lag is six days, the summits reported on June 7, likely experience the weather on June 1.

Of course, 14,200-foot weather is assumed to be positively associated with summit weather, but we lack weather observation data for the summit since there is no weather station on the summit. Thus, higher 14,200-foot temperatures or wind speeds are assumed to be positively associated with higher summit temperatures and wind speeds. In models 1, 2, 3 of table 4 we only look at the weather varaibles for which we have the most data, 8 AM temperatures and wind speeds. Table 4, models 1 and 3 show that higher temperatures at 14,200-foot camp are associated with more summits with over 99 percent confidence. Table 4, models 2 and 3, show that higher wind speeds are associated with fewer summits with 95 percent confidence.

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Nevertheless, in models 1, 2, and 3 adjusted R-squared ranges from 3.7 to 7.2 percent. If we add in the quadratic time model in table 4 model 4, the semi-weekly time dummies in table 4 model 5, and the weekly time dummies in table 5, then a greater percentage of the variance is explained with adjusted R-squareds ranging between 26.3 and 38.5 percent.

Table 4. Ordinary Least Squares Regressions of New Summits Per Day as a Percent of Registered Climbers

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	1.065 8.877*** (0.000)	1.506 8.564*** (0.000)	1.392 7.668*** (0.000)	−2.190 −3.427*** (0.000)	−0.270 −0.237 (0.813)
Temperature (°F) at 14,200 ft Camp, 2 Field Reports Prior	0.029 2.752*** (0.007)		0.031 2.784*** (0.006)	0.035 3.121*** (0.002)	0.028 2.696*** (0.008)
Wind Speed (mph) at 14,200 ft Camp, 2 Field Reports Prior		−0.060 −2.537** (0.012)	−0.063 −2.447** (0.016)	−0.044 −1.878* (0.063)	−0.031 −1.425 (0.157)
Time				0.140 5.006*** (0.000)	
Time^2				−0.001 −4.216*** (0.000)	
Dummy May 1–15					0.435 0.371 (0.711)

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Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Dummy May 16–31					0.693 0.597 (0.551)
Dummy June 1–15					2.698 2.328** (0.021)
Dummy June 16–30					2.035 1.769* (0.079)
Dummy July 1 Onward					1.353 1.168 (0.245)
Number of Observations	158	142	134	134	134
Adjusted R^2	0.040	0.037	0.072	0.263	0.385
F-Statistic	7.575***	6.435**	6.172***	12.949***	12.989***

Note. Cell entries show the unstandardized coefficient, t-statistic, and p-value (in parentheses), respectively, for each predictor. Temperature and wind speed are measured at the 14,200 foot camp two Field Reports prior to the summit date. * $p < .10$. ** $p < .05$. *** $p < .01$.

The negative association between wind speed and summit success is less statistically significant when we control for the dates in models 4 and 5 of table 4 and in table 5. Indeed, it is significant only with 10 percent confidence with the quadratic time model of table 4 model 4 and in table 5. With semi-weekly dummies in model 5 of table 4, wind speeds at 14,200-foot camp are not statistically significant predictors of summit success.

Overall, hypothesis 2 receives weak support that is not significant even at the 90 percent level of confidence in model 5 of table 4. In all other models with wind speed controls in tables 4 and 5, there is a negative and significant association between wind speed and summit success rates. Hartl

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et al. (2020a) hints at why wind speeds are not statistically significant. They find wind speeds are minimized in July, the same time when summits and climbers on the mountain according to Wilson (2026) drop as climbers avoid the mountain due to melting snow bridges over crevasses. June is one of the three lowest wind speed months (along with July and August). The winds may not be a big factor given they are typically very low in June, but lower mountain crevasse risk could be more of a factor suppressing July summits.

Table 5. Ordinary Least Squares Model of New Summits Per Day as a Percent of Registered Climbers With Weekly Time Dummy Variables

Variable	Coefficient	t-Statistic	p-Value
Constant	0.046	0.053	(0.958)
Temperature (°F) at 14,200 ft Camp, 2 Field Reports Prior	0.036	3.207***	(0.002)
Wind Speed (mph) at 14,200 ft Camp, 2 Field Reports Prior	−0.043	−1.813*	(0.072)
Dummy May 1–7	−0.034	−0.036	(0.971)
Dummy May 8–14	0.366	0.377	(0.707)
Dummy May 15–21	0.403	0.425	(0.672)
Dummy May 22–28	0.251	0.275	(0.784)
Dummy May 29–June 4	1.764	1.932*	(0.056)
Dummy June 5–11	2.355	2.522**	(0.013)
Dummy June 12–19	1.933	2.126**	(0.036)
Dummy June 20–26	1.821	1.980**	(0.050)
Dummy June 27–July 3	1.640	1.831*	(0.070)
Dummy July 4–10	1.025	1.128	(0.261)

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Variable	Coefficient	t-Statistic	p-Value
Dummy July 11 Onward	0.139	0.116	(0.908)
Number of Observations	134		
Adjusted R^2	0.305		
F-Statistic	5.518***		

Note. Temperature and wind speed are measured at the 14,200 foot camp two Field Reports prior to the summit date. Dummy variables equal 1 if the Field Report date falls within the labeled week and 0 otherwise; the omitted category is the pre May period. * p < .10. ** p < .05. *** p < .01.

In contrast, 14,200-foot temperatures maintain their positive and significant association with summits in all models accounting for the date. We have 99 percent confidence with the quadratic model, the semi-weekly dummies, and the weekly dummies that higher temperatures are associated with a higher summit rate. Roughly a 10 F increase in 14,200-foot temperature is associated with a 0.3 percent rise in the summits per day as a percent of registered climbers. This is strong support for hypothesis 1. With 99 percent confidence in all specifications, higher temperatures are associated with higher summit success rates. McIntosh *et al.* (2008) identified hypothermia as the second leading cause of death on Denali. Higher temperatures would reduce hypothermia risks for climbers going to the summit. The quadratic model has a positive and significant coefficient for time and a negative and significant coefficient for time squared. Both are significant with 99 percent confidence. Stewart (1991, 272) points out this negative quadratic form is indicative of a global maximum. This implies that there is a date where summits are most likely. Setting the first derivative of summit success with respect to time equal to zero as in Stewart (1991, 260) we can solve for the predicted most likely time in days to summit, t^*. If a is the estimated coefficient of Time, t, and b is the estimated coefficient of Time^2, t^2, the most likely day to summit is as follows:

$$t^* = a/(-2b) \qquad (1)$$

t^* = [0.14038/(-2*-0.0123)] = 57 days from day 0, April 19, the date of the earliest Field Report. Fifty-seven days from April 19 is June 15. Thus, model 3 says that, not accounting for weather observations, we should expect the highest summit success rates on June 15 each season.

When not accounting for weather, model 5 in table 4 it is shown that the most likely half-month period for summits is June 1-15, as reported in the Field Reports. During that half of the month, summits as a percent of registered climbers are predicted to increase by 2.3 percent over the pre-May period. Table 5 shows that summits as a percent of registered climbers are predicted to peak

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between June 5-11. In that week, summits are estimated to increase by 2.5 percent over the pre-May period.

5. Conclusion

This study constructs a variable for daily summit success rates on the highest mountain in North America, Mt. McKinley (Denali), which regularly has over one thousand climbers attempting to reach its summit in recent years. Using data for the climbing seasons from 2015 to 2023, we find that higher daily temperatures at 14,200-feet are associated with higher daily summit success rates. This association is significant with over 99 percent confidence. There is a statistically weaker negative association between wind speeds at 14,200-foot camp and summits per day. This is the first paper to look at short-term summit success rates on Denali and daily weather conditions. Weather conditions do seem to predict summit success, but there are other factors than temperatures and wind speeds that are picked up by the calendar variables of Wilson (2026). Those calendar variables explain even more of the variance than 14,200-foot weather conditions. This indicates that parties can time their expedition start dates to the calendar even before reliable weather forecasts for 14,200-foot camp. The timing of and success of these expeditions affects the Talkeetna, Alaska economy and the airlines in that town that ferry rangers, volunteers, and climbers to the Mt. McKinley (Denali) base camp in the April to July climbing season. Most of these expeditions would do well to plan start dates in late May and early June, according to the results here and in Wilson (2026), which did not control for daily weather conditions.

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