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ECONOMIC IMPACT

2018 SUNDANCE FILM FESTIVAL

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KEY DATA POINTS

At least 124,000 people attended the Sundance Film Festival between January 18 and January 28, 2018. Approximately 44,600 attendees came from out of state. These out-of-state visitors spent an estimated $157 million in Utah during the festival. Sundance Institute also directly contributed to the Utah economy via the costs of planning and producing the 2018 festival. In total, the Sundance Film Festival contributed the following to Utah's economy in 2018:

- $191.6 million in Utah gross domestic product
- 3,323 jobs for Utah residents
- $100 million in Utah wages
- $19.2 million in state and local tax revenue

BACKGROUND

The Sundance Film Festival is the flagship annual event of the non-profit Sundance Institute. The 2018 festival ran for 11 days between January 18th–28th, 2018 and drew at least 124,000 attendees to film screenings, panel discussions, and other interactive storytelling events in Park City, Salt Lake City, and at the Sundance Resort. Just over a third of the attendees came from out of state. These out-of-state visitors contributed to Utah's economy by participating in festival activities and purchasing lodging, meals, and entertainment during their stay. Sundance Institute also contributed directly to the local economy via direct spending on planning and producing festival events.

This report estimates the total economic impact of the 2018 Sundance Film Festival using observational and self-reported survey data about festival attendees, their attendance patterns, and their spending habits; and using Sundance Institute direct spending data. The report was sponsored by Sundance Institute.

There are additional sources of economic activity not accounted for in this report. We omit impacts due to spending by official festival sponsors, unaffiliated businesses that operated around the event, airport taxes for attendees that traveled through Salt Lake International Airport, and secondary spending for visitors that return to the state post-festival since these data sources were not made available to either Sundance Institute or to our research team.

This report includes a more accurate estimate of a hard-to-reach population of festival attendees, namely short-term visitors that attended one festival event but did not stay at the festival. New technological developments have enabled our team to better quantify this population and include them in our estimates this year.

METHODOLOGY

The estimates in this report rely on three categories of data: 1) Blyncsy radio signal sensors installed in each festival venue that collected passive data about devices moving in and around festival events, 2) self-reported

spending data collected through random samples via intercept surveys during the festival and online surveys immediately after the festival, and 3) accounting records from Sundance Institute about direct spending to produce the festival. Using these data sources, we produced estimates for attendance and average spending for both in-state and out-of-state attendees.

METHODOLOGICAL INNOVATIONS

Studies prior to 2017 relied almost wholly on intercept sampling at the festival to estimate attendance and spending. Intercept studies are incredibly useful, but in the context of a busy festival getting a true random sample is challenging. Interviewers can be prone to oversample attendees that are approachable, perhaps those who better match the interviewers own age, socioeconomic status, or other characteristics. We used a variant of a Systematic Random Sample—randomly sampling the locations and times as well as a random start and fixed interval of interviewing to assure interviewers did not subconsciously bias the sample. Additionally, we conducted a separate random sample survey of ticketholders via online invitation immediately after the festival concluded. The results of that survey closely match the intercept survey, giving us the same demographic results across two separate survey modes.

Prior to 2017, attendance was estimated using a combination of the number of filled seats at film venues and an adjusted self-report of films attended per survey respondent. The self-reports were adjusted because film attendance by attendees is demonstrably over reported in the surveys. For example, the average survey respondent reports attending five films, which is not consistent with objective ticket redemption data. Additionally, the attendance estimate methodology has not been consistent over time. Instead of relying on self-reported attendance, technological advances allow us to take advantage of sensor technology that tracks devices that have Wi-Fi or Bluetooth radios inside of the festival venues. This allows us to directly and anonymously observe mobile devices as they enter the festival, move from venue to venue, and leave. The resulting attendance estimate is both higher and more accurate than previous years.

Our team first used this technology to estimate attendance in 2017 with twenty-two sensors installed in main festival venues. This year there were thirty-six sensors installed across nearly all the festival venues. These additional sensors captured more devices and allowed our team to quantify and estimate a population of attendees that has been undercounted in past years – short-term attendees. These are visitors that come to one single event at the festival and then leave. Historically they have been challenging to quantify because their short visit does not facilitate interviewing them. These additional sensors allow us a chance to see their impact on the festival.

ATTENDANCE ESTIMATES

For our attendance estimates, we rely on data provided by Blyncsy, an innovative Utah company that specializes in sensors that anonymously track individuals throughout an environment via their cell phones. For this analysis, each device is assigned a unique ID and the Blyncsy data reports where and when that device is seen at various festival venues as measured by thirty-six sensors installed across the festival footprint (including venues in Park City, Sundance Resort, and Salt Lake City). The Blyncsy sensor system captures any device equipped with a WiFi or Bluetooth radio, but the captured data does not make a distinction between which devices belong to identified festival attendees and other devices. In order to be conservative about attendance estimates, we

implemented a set of rules to determine which devices counted as devices in the hands and pockets of festival attendees. We counted as festival attendees devices that either attended two or more events or that stayed the entire time at one ticketed event (generally a film screening). Additionally, to identify Park City regulars, we screened out devices that were seen in the geographic vicinity before or after the festival. Using these parameters, we estimate 124,985 unique attendees over the course of the festival. We also assume that all or nearly all attendees carry a cell phone or other mobile device with them during the festival. Festival attendees without mobile devices do not count toward this attendance estimate. This estimate is significantly higher than prior years because it includes a population of short-term attendees that was difficult to estimate using prior methodologies.

For an apples-to-apples comparison to 2017, we ran a version of attendance estimates that only includes the twenty-two sensors that were in place last year. Using that limited set of sensors, we show an attendance of 71,669 participants – just a few hundred more than estimated in 2017. Importantly, this limited sensor set does not include a sensor installed at a new theater venue this year. This suggests that while the festival has definitely seen some year-over-year growth in attendance, the large increase in attendance we are reporting this year is mostly a factor of undercounting short-term attendees in prior festivals.

SURVEY METHODS

Our research team conducted three surveys to determine spending among festival attendees: 1) random intercept interviews during the festival at festival screenings and other official festival venues, 2) an online survey among ticket-buyers immediately after the festival, and 3) an online survey immediately after the festival among festival attendees that were not available in the screening lines, which generally consists of industry professionals, VIPs, and other contributors to the festival.

Intercept interviewers from Y² Analytics were on site throughout the festival. The interviewers were assigned to events in Park City, Salt Lake City, and at the Sundance Resort using a random assignment algorithm. We used Systematic Random Sampling techniques to select survey respondents. At film screenings, interviewers were given a random starting place and a fixed interval (for example, start on the 13th person in line and interview every 5th person) to approach festival-goers in line waiting to enter the film. Similarly, when assigned to non-film events interviewers were given a random starting place and a fixed interval to approach attendees as they passed by. Surveys were self-administered on paper questionnaires, which allowed interviewers to maintain the random interval and interview multiple attendees simultaneously. In total, we interviewed 1,049 festival attendees in person.

Additionally, we fielded a similar instrument via an online survey among Sundance Institute database ticket buyers shortly after the festival. Ticket buyers were selected at random to participate and invited over email with one follow up reminder. Those who had already been sampled to take the intercept survey were screened out of this sample. In total, we interviewed 1,197 festival attendees online. The results of the online survey weighted to attendance proportions between Park City and Salt Lake City were statistically equivalent to the intercept survey.

Finally, we fielded the same online instrument among a database of festival pass-holders. These attendees included industry professionals, VIPs, and other festival contributors who are not generally available in the lines outside theaters. In total, we interviewed 169 festival pass-holders.

ECONOMIC IMPACT

Spending during the Sundance Film Festival generates many positive economic benefits. Tourism-related industries are beneficiaries of spending that would not otherwise be part of the state's economy, and that spending entering the state induces additional spending as companies hire additional labor, increase their capacity, and purchase the goods that are necessary to accommodate the additional visitors.

The detailed surveys conducted of festival attendees provide data on how much attendees spend on a variety of services: lodging, meals, transportation, recreation, and other retail expenses. For each category of spending, we apply the latest available (2015) RIMS II economic multipliers produced by the U.S. Bureau of Economic Analysis. These multipliers capture how much additional spending is induced by the festival. The RIMS II model also estimates the effect of the festival on earnings in the state, and the number of jobs produced.

Sundance Institute spending that is necessary to sustain the festival also contributes to the economic impact and its contribution to the total economic impact is also included.

The primary economic impact of spending coming from outside the state is referred to as *State Gross Domestic Product (State GDP)*. This is the *value-added* of all goods and services. It includes direct spending by visitors to the festival, indirect spending, which is the value of inputs that are produced by other local businesses, and induced expenditures, which result from the increased spending by Utah households. State GDP removes the value of intermediate inputs and, thereby, captures new spending that occurs because of the festival.

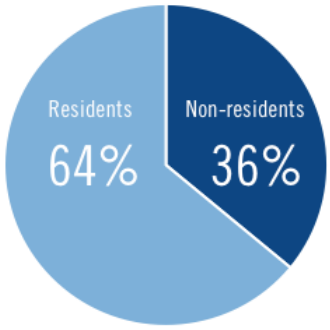
We also report a measure of *Total Output*. This measures the value of every dollar *associated* with spending on the festival. However, Total Output includes intermediate goods and, therefore, contains some double-counting. We include this as a reference value but note that the true economic impact is captured best by the State GDP estimate.

Finally, using data from a number of sources, we develop estimates of state and local taxes (sales taxes and income taxes) that result from the increase in spending and earnings in the state.

RESULTS

ATTENDEES: NUMBERS & CHARACTERISTICS

Figure 1: Proportion of non-resident attendees



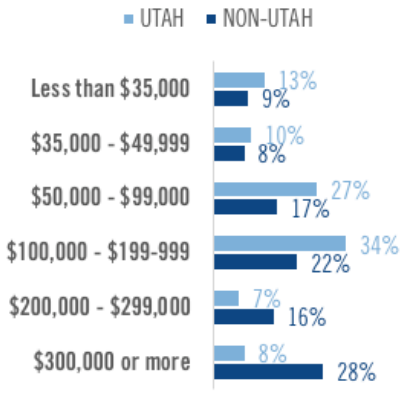
About 124,985 attendees filled 232,594 seats at events over the course of the festival. An estimated 64% of attendees were Utah residents (about 80,000 individuals) while 36% came from out of state (about 45,000 individuals). About 37% of non-residents came from California, 10% from New York, 6% from Texas, 4% from Florida, 4% from Illinois, 4% from Colorado, 3% from Massachusetts, and 33% from other states. Approximately 3% of non-resident attendees traveled from outside the United States to attend the festival, representing at least 26 different countries.

The estimated number of out-of-state attendees is up from prior years (up from an estimated ~37,500 last year) , however the percentage of attendees coming from Utah is significantly higher than in prior year's reports. This is because the historically undercounted short-term attendees are disproportionately Utah residents. By including them in the attendance figures, the percentage of in-state attendees goes up significantly even though the absolute count of out-of-state attendees has increased.

94% of non-resident attendees reported attending multiple days of the festival, with 61% of non-residents staying between 2 and 5 days. 87% of Utah residents attended only one or two days of events. A majority of Utah resident attendees came from Salt Lake County (37%), Davis County (26%), and Summit County (16%).

Out-of-state festival-goers tended to come from relatively high-income households. 44% of non-resident respondents reported a household income of $200,000 or more. Resident attendees also came from relatively high-income households in Utah; the modal category is $100,000 – $199,999 per year.

Figure 2: Attendee income



Though this is an industry event, many attendees are not entertainment industry professionals (47%). 8% of non-resident participants are students, about 2% are press, and 42% work in non-entertainment fields.

SPENDING

Table 1below provides estimates of aggregate spending by both residents and non-residents of Utah. Utahns spend almost $27 million dollars to participate in the festival. This number is far exceeded, however, by the amount spent by non-residents. People coming to the state spend over $156 million during their stay here, not including purchases of tickets to the festival.

TABLE 1: AGGREGATE SPENDING

	UTAH	NON-UTAH	COMBINED
Lodging	$-	$62,603,231	$62,603,231
Car Rental	$127,318	$6,166,295	$6,293,613
Other Transportation	$2,674,029	$11,273,223	$13,947,252
Meals	$9,891,170	$30,478,623	$40,369,794
Recreation & Entertainment	$12,194,069	$37,760,443	$49,954,512
Other Spending	$1,980,107	$8,566,096	$10,546,203
Total	$26,866,694	$156,847,911	$183,714,605

Tables 2 & 3 summarize spending on a per-person basis. Spending across all categories was $3,518 for each out of state visitor or a total of $688 per day. Utahns, primarily because they seldom need lodging, spent less but still purchased $334 in goods and services during the festival, or $120 per day.

TABLE 2: AVERAGE TOTAL SPENDING BY CATEGORY

	UTAH	NON-UTAH
Lodging	$-	$1,404
Car Rental	$2	$138
Other Transportation	$33	$253
Meals	$123	$684
Recreation & Entertainment	$152	$847
Other Spending	$25	$192
Total	$334	$3,518

TABLE 3: AVERAGE DAILY SPENDING BY CATEGORY

	UTAH	NON-UTAH
Lodging	$-	$218
Car Rental	$0	$22
Other Transportation	$13	$51
Meals	$44	$152
Recreation & Entertainment	$52	$206
Other Spending	$10	$39
Total	$120	$688

ECONOMIC IMPACTS

The spending by non-residents and by Sundance Institute contribute economically to the state. Table 4 summarizes the economic impact of this spending. We estimate that the economic impact of the festival (State GDP) is over $191 million. Most of this is due to spending brought in by visitors to the state. The total amount of economic activity associated with the festival is $331 million, though we caution again that this value contains significant double-counting for some types of expenditures. Nonetheless, the festival has a sizeable impact on the state economy.

TABLE 4: ECONOMIC IMPACTS

	NON-RESIDENT	SUNDANCE INSTITUTE	COMBINED
Total Spending	$156,847,911	$12,479,760	$169,327,671
Economic Impact (State GDP)	$179,794,290	$11,776,360	$191,570,651
Total Output	$310,527,314	$20,167,595	$330,694,910
Earnings	$93,720,914	$6,294,064	$100,014,978
State and Local Taxes	$18,909,746	$260,294	$19,170,040
Jobs	3,158	164	3,323

The festival has other economic impacts. We estimate that the annual employment associated with the festival is 3,323 jobs and total earnings of those employees is over $100 million. Additionally, we estimate that the festival generates $19 million in state and local taxes. These are revenues that would not be available to the state without the festival.

APPENDICIES

APPENDIX A: ATTENDEE RESIDENCY STATUS

Utah	64.3%
Non-Utah	35.7%

APPENDIX B: ATTENDEE AGE

	TOTAL	UTAH	NON-UTAH
Under 18	0.1%	0.0%	0.1%
18-25	15.9%	18.9%	10.6%
26-35	26.0%	27.1%	24.1%
36-45	19.2%	18.5%	20.4%
46-55	18.2%	19.0%	16.6%
56-64	15.1%	11.1%	22.1%
Over 65	5.6%	5.3%	6.1%

APPENDIX C: ATTENDEE GENDER

	TOTAL	UTAH	NON-UTAH
Male	31.7%	26.9%	40.3%
Female	66.9%	71.3%	59.0%
Other	1.4%	1.8%	0.6%

APPENDIX D: ATTENDEE EDUCATION

	TOTAL	UTAH	NON-UTAH
High School Graduate or Less	2.8%	3.2%	2.0%
Some College	16.9%	21.3%	9.0%
Bachelor's Degree	48.1%	47.2%	49.6%
Master's Degree	23.1%	20.1%	28.5%
Doctorate/Other Post-Grad	9.1%	8.2%	10.8%

APPENDIX E: ATTENDEE INCOME

	TOTAL	UTAH	NON-UTAH
Less than $35,000	11.9%	13.4%	9.2%
$35,000 - $49,999	9.4%	10.1%	8.3%
$50,000 - $99,000	23.2%	26.9%	16.6%
$100,000 - $199-999	29.8%	34.2%	21.8%
$200,000 and Over	10.1%	7.0%	15.7%
$300,000 or more	15.6%	8.4%	28.4%

APPENDIX F: ATTENDEE OCCUPATION

	TOTAL	UTAH	NON-UTAH
Entertainment Industry	11.8%	2.8%	28.1%
Non-Entertainment Industry	47.0%	50.1%	41.6%
Press	1.8%	1.5%	2.2%
Student	10.6%	12.1%	7.9%
Other	28.8%	33.5%	20.2%

APPENDIX G: ATTENDEE INTENDED TO SKI OR SNOWBOARD DURING FESTIVAL

	TOTAL	UTAH	NON-UTAH
Yes	24.7%	26.1%	22.2%
No	75.3%	73.9%	77.8%

APPENDIX H: COUNTY OF RESIDENCE (UTAH)

	UTAH
Salt Lake	36.8%
Davis	26.3%
Summit	15.6%
Utah	10.7%
Wasatch	5.9%
Weber	3.0%

Other	1.7%

APPENDIX I: MOST ATTENDED VENUE

	TOTAL	UTAH	NON-UTAH
Park City	57.9%	45.6%	80.0%
Salt Lake City	35.4%	45.6%	17.1%
Sundance Resort	6.7%	8.8%	2.9%

APPENDIX J: EVER ATTENDED SUNDANCE FILM FESTIVAL BEFORE

	TOTAL	UTAH	NON-UTAH
Yes	72.0%	73.5%	69.4%
No	28.0%	26.5%	30.6%

APPENDIX K: PLANNING TO RETURN AND ATTEND FILM FESTIVAL NEXT YEAR

	TOTAL	UTAH	NON-UTAH
Yes, Definitely	50.0%	50.4%	49.2%
Yes, Probably	41.8%	43.0%	39.7%
No, Probably not	8.0%	6.5%	10.8%
No, Definitely not	0.2%	0.0%	0.4%

APPENDIX L: STATE OF RESIDENCE (NON-UTAH)

	NON-UTAH
California	36.8%
New York	9.5%
Texas	5.6%
Florida	4.4%
Illinois	4.1%
Colorado	4.0%
Massachusetts	2.9%

Other	32.7%

APPENDIX M: COUNTRY OF RESIDENCE (NON-US)

	NON-US
Algeria	1.1%
Argentina	2.2%
Australia	10.2%
Austria	1.1%
Brazil	3.3%
Canada	37.6%
China	1.1%
Colombia	2.2%
France	1.1%
Germany	2.2%
Iceland	2.1%
Indonesia	1.1%
Italy	2.2%
Japan	2.2%
Korea	1.6%
Mexico	3.3%
Norway	1.1%
Russia	1.1%
Slovenia	1.1%
South Africa	1.1%
South Korea	1.1%
Spain	2.2%
Sweden	2.1%
Switzerland	2.1%
United Kingdom	12.2%
Uruguay	1.1%

APPENDIX N: FESTIVAL DAYS ATTENDED

	TOTAL	UTAH	NON-UTAH
1	25.2%	36.0%	5.8%
2	36.7%	51.0%	10.9%
3	7.9%	1.2%	20.0%
4	5.7%	1.6%	13.2%
5	7.3%	1.9%	16.9%
6	4.2%	1.3%	9.4%
7	3.6%	1.3%	7.6%
8	1.6%	0.9%	2.8%
9	1.3%	1.1%	1.8%
10	3.1%	1.9%	5.3%
11	3.4%	1.8%	6.1%
Average	3.2	2.3	5.0

ABOUT THE AUTHORS

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Quin Monson is a recognized survey researcher and a founding Partner at Y² Analytics. He has extensive experience executing scientific surveys nationally and in dozens of states. He has particular expertise with sampling, weighting, and online modes. He has fielded numerous political, academic, and professional surveys via traditional phone techniques, novel internet modes, and increasingly rare in-person interviews. Quin received his Ph.D. from the Ohio State University where he focused on public opinion, elections, and survey research methods. He is a Senior Scholar of the Center for the Study of Elections and Democracy and an Associate Professor of Political Science at Brigham Young University.

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Sven E. Wilson is an economist with over 25 years of experience doing empirical analysis in the areas of economics, public policy and demographics. He is a founding Partner of Notalys, a Utah-based economic and public policy consulting firm that has done numerous policy analyses in the state of Utah in recent years. He is a graduate of Brigham Young University and holds a Ph.D. in economics from the University of Chicago. He is professor of public policy at BYU, where he has taught policy research and data analysis, and he is a research economist at the National Bureau of Economic Research.

JAY GOODLIFFE, Ph.D., Notalys Chief Methodologist

Jay Goodliffe is a Partner and Chief Methodologist at Notalys. Dr. Goodliffe has taught and researched public policy in Utah and nationally for 20 years, with primary specialty in statistical methodology and applying advanced methods to practical problems. He received his bachelor's degree from MIT, and his master's degree and Ph.D. from the University of Rochester. His experience includes designing, administering, and analyzing complex survey data; assessing incentive and information systems in market and non-market environments; compiling and synthesizing disparate databases to identify patterns and relationships; and conducting cost-benefit analyses. He has published numerous articles in the areas of methodology, game theory, and social network theory. At BYU, Dr. Goodliffe teaches classes on statistical analysis, econometrics, multilevel models, game theory, and data visualization.