Leveraging Ski Resort Industry Analysis

i.   **Introduction**

a.   Skiing is one of the most popular winter outdoor recreation activities in the world. Ski resort industry is composed of companies engaged in operating skiing areas, facilities and equipment such as ski lifts and tows. Comprehensive data analysis provides in-depth understanding of the industry to help these mountain resort businesses increase their operative performance, grow revenue, maximize retention of existing customers and identify future development opportunities.

b.   The dataset used for this analysis report covers the most famous ski resorts in the world with all range of features critical for industry evaluation.

This can be found on Kaggle.com official website https://www.kaggle.com/datasets/migueldefrutos/ski-resorts-world-wide. It contains 5479 rows and the following columns:

- url

- rate

- name of resort

- stars

- km freeride

- continent

- country

- state/province

- altitude

- easy

- intermediate

- difficult

- adult

- currency

- ski resort size

- slope offering, variety of runs

- lifts and cable cars

- snow reliability

- access, on-site parking

- orientation (trail map, information boards, sign-postings)

- cleanliness and hygiene

- environmentally friendly ski operation

- mountain restaurants, ski huts, gastronomy

- apres-ski

- accommodation offering directly at the slopes and lifts

- families and children

- beginners

- snow parks

- cross-country skiing and trails

- latitude

- longitude

- total kms.

ii.   Analysis Methodology Followed

a. Power BI has been preferred to Tableau as an analytical tool in order to analyze the data for several reasons. Power BI provides more flexibility regarding choosing and working with visuals. Power BI interface is easier to navigate and use in visualization creation process. Also, dashboarding platform is more convenient to make simple yet effective dashboards.

b. ***Visualization creation process.*** I started the analysis off with *General Geographic Overview*. Then, I divided the data into three reports - *Area and Facility Analysis, Customer Service Analysis, Activity and Entertainment Analysis.*

General Geographic Overview is an introduction to the data that conveys some general background information on different ski resorts around the world. Looking at the map and "the biggest resorts" chart represents a big picture on the topic before going into details.

Area and Facility Analysis is intended to establish and evaluate relations between resort's rate and such metrics as number of lifts and cable cars, cross-country skiing, accommodation, orientation, etc. The data was narrowed down to Colorado ski resorts.

Customer Service Analysis is looking into the target audience and cleanliness measures focusing on Europe continent.

Activity and Entertainment Analysis examines such metrics as mountain restaurants, apres-ski, snow parks, etc using North America example.
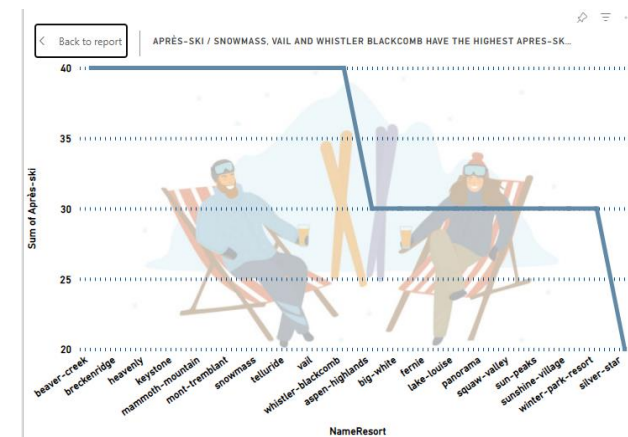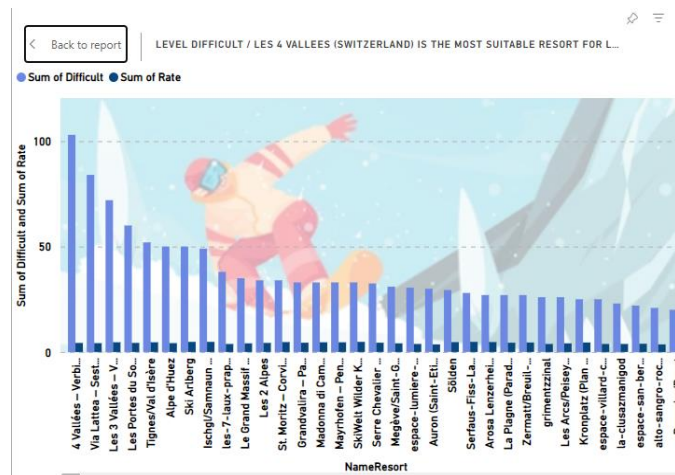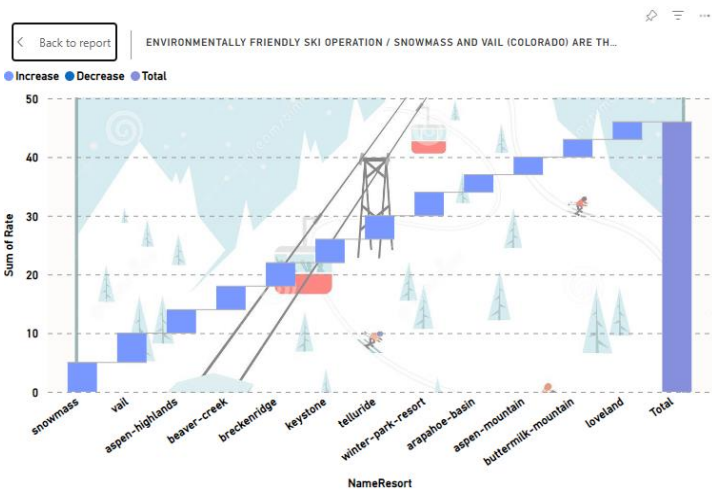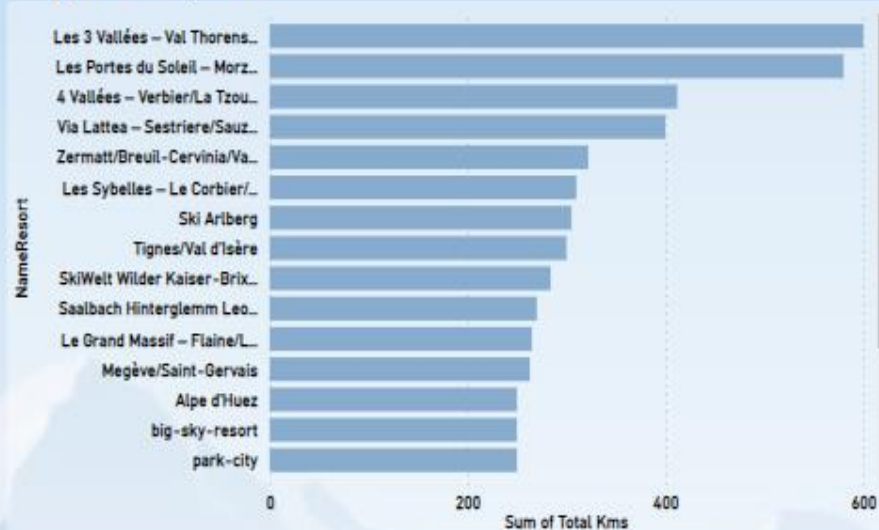
Count of Ski Resorts by Country

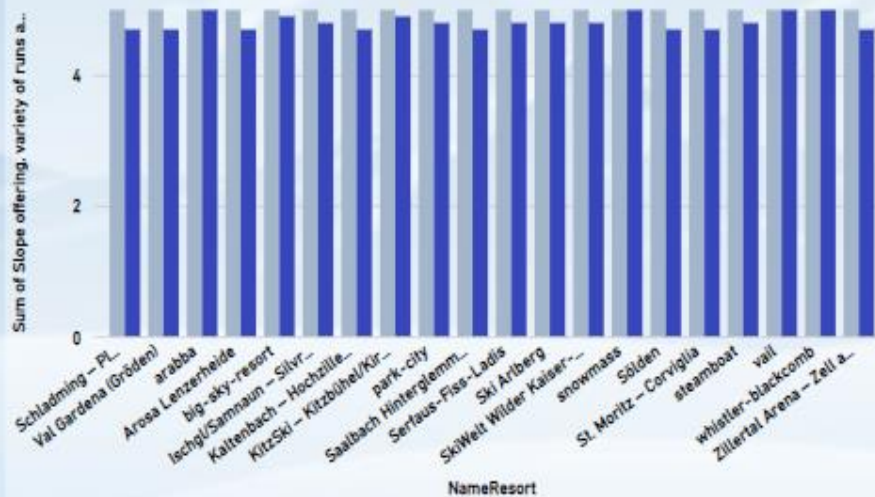Country ● ● Albania ● Algeria ● Andorra ● Argentina ● Armenia ● Australia ● Austria ● Azerbaijan ● Bahrain ▶
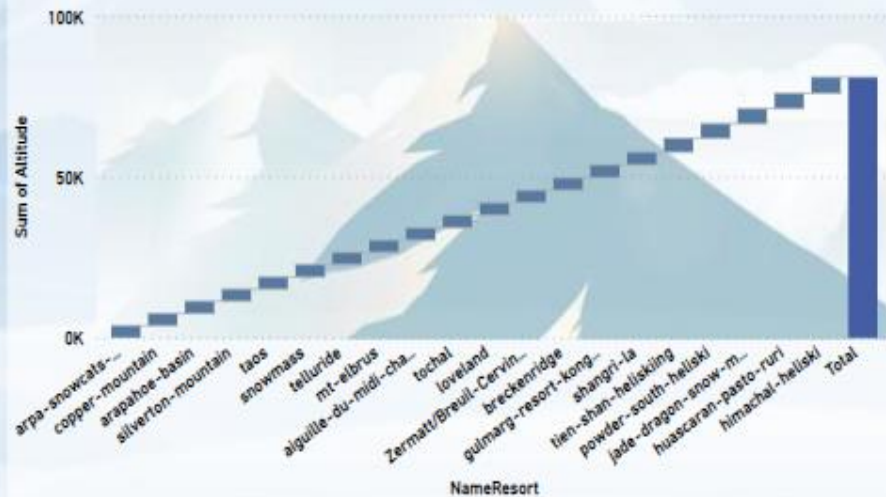

20 Biggest Resorts by Total Kms

Les 3 Vallées – Val Thorens...
Les Portes du Soleil – Morz...
4 Vallées – Verbier/La Tzou...
Via Lattea – Sestriere/Sauz...
Zermatt/Breuil-Cervinia/Va...
Les Sybelles – Le Corbier/...
Ski Arlberg
Tignes/Val d'Isère
SkiWelt Wilder Kaiser-Brix...
Saalbach Hinterglemm Leo...
Le Grand Massif – Flaine/L...
Megève/Saint-Gervais
Alpe d'Huez
big-sky-resort
park-city

NameResort

Sum of Total Kms — 0, 200, 400, 600

Top 20 Resorts by Count of Slope Offering (Variety of Runs) / Rate by Resort Name

● Sum of Slope offering, variety of runs ● Sum of Rate

Sum of Slope offering, variety of runs a...

NameResort: Schladming – PL..., Val Gardena (Gröden), arabba, Arosa Lenzerheide, big-sky-resort, Ischgl/Samnaun – Silvr..., Kaltenbach – Hochzille..., KitzSki – Kitzbühel/Kir..., park-city, Saalbach Hinterglemm..., Serfaus-Fiss-Ladis, Ski Arlberg, SkiWelt Wilder Kaiser-..., snowmass, Sölden, St. Moritz – Corviglia, steamboat, vail, whistler-blackcomb, Zillertal Arena – Zell a...

Highest Base Elevation Resorts by Altitude

● Increase ● Decrease ● Total

Sum of Altitude — 100K, 50K, 0K

NameResort: arpa-snowcats-..., copper-mountain, arapahoe-basin, silverton-mountain, taos, snowmass, telluride, mt-elbrus, aiguille-du-midi-cha..., tochal, loveland, Zermatt/Breuil-Cervin..., breckenridge, gulmarg-resort-kong..., shangri-la, tien-shan-heliskiing, powder-south-heliski, jade-dragon-snow-m..., huascaran-pasto-ruri, himachal-heliski, Total

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On-Site Parking / Loveland (Colorado) has the Highest Number of On-Site Parking and Access Spaces

Sum of Access, on-site parking   Sum of Rate

Sum of Access, on-site parking and Sum of Rate
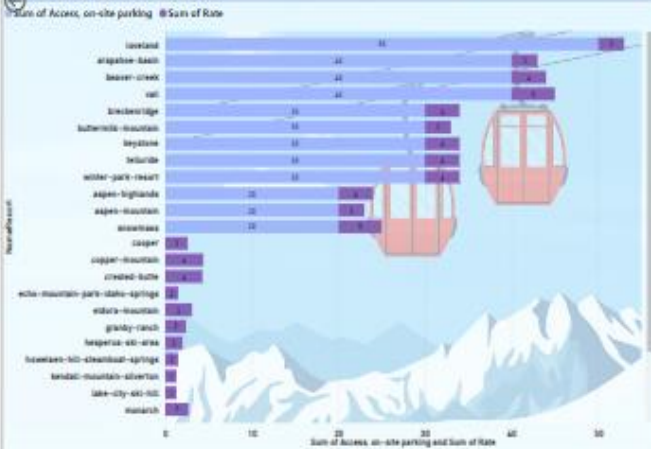
Accommodation Offering Directly at the Slopes and Lifts / Snowmass and Vail (Colorado) have the Highest Accomodation – Rate Correlation
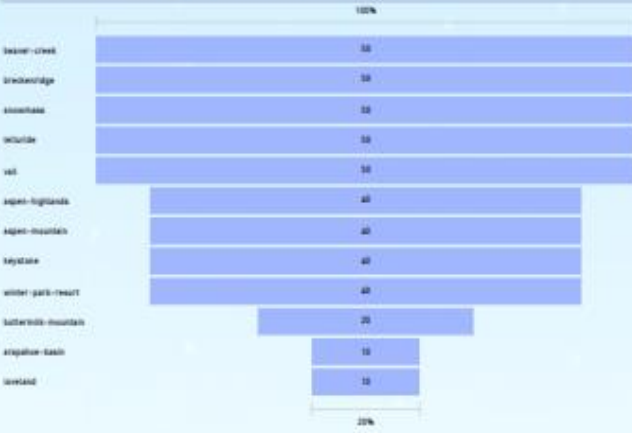
## Orientation (trail map, information boards, sign-postings) / Beaver-Creek and Breckenridge (Colorado) have the Highest Orientation-Rate Correlation

Resort Name
- beaver-creek
- breckenridge
- vail
- arapahoe-basin
- aspen-highlands
- aspen-mountain
- buttermilk-mountain
- keystone
- snowmass
- telluride
- winter-park-resort
- loveland

Number of Lifts and Cable Cars / Lake City Ski Hill (Colorado) has the Lowest Number of Lifts and Cable Cars

Sum of Lifts and cable cars   Sum of Rate

NameResort

Cross-Country Skiing and Trails / Telluride (Colorado) has the Biggest Number of Cross-Country Skiing and Trails

NameResort
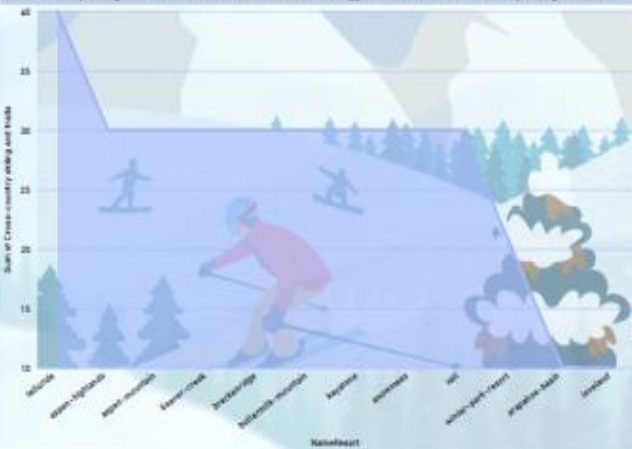
Environmentally Friendly Ski Operation / Snowmass and Vail (Colorado) are the Most Environmentally Friendly Resorts with the Highest Rate

Increase   Decrease   Total
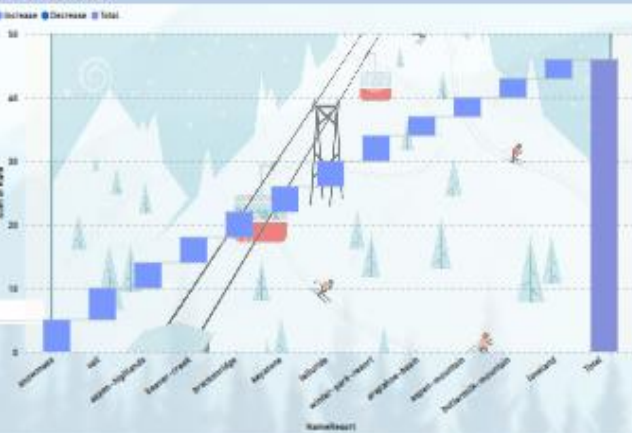
NameResort

Max Snow Reliability / Snowmass and Vail (Colorado) have the Highest Snow Reliability – Rate Correlation

NameResort	beaver-creek
Sum of Snow reliability	5
Sum of Rate	4.00

Drillthrough Page for Resort Name

NameResort	Country	Sum of Total Kms	Sum of Rate	URL
arapahoe-basin	USA	155	3.00	http://www.skiresort.info/ski-reso
aspen-highlands	USA	135	4.00	http://www.skiresort.info/ski-reso
aspen-mountain	USA	102	3.00	http://www.skiresort.info/ski-reso
beaver-creek	USA	150	4.00	http://www.skiresort.info/ski-reso
breckenridge	USA	163	4.00	http://www.skiresort.info/ski-reso
buttermilk-mountain	USA	34	3.00	http://www.skiresort.info/ski-reso
cooper	USA	26	2.60	http://www.skiresort.info/ski-reso
copper-mountain	USA	126	4.00	http://www.skiresort.info/ski-reso
crested-butte	USA	121	4.00	http://www.skiresort.info/ski-reso
echo-mountain-park-idaho-springs	USA	2	1.00	http://www.skiresort.info/ski-reso
eldora-mountain	USA	42	3.70	http://www.skiresort.info/ski-reso
granby-ranch	USA	20	2.40	http://www.skiresort.info/ski-reso
hesperus-ski-area	USA	10	2.00	http://www.skiresort.info/ski-reso
Total		**2412**	**91.00**	

State/Province

- Abruzzo
- Adjara
- Adriatic Croatia Jadranska Hrvatska
- Aegean Region Ege Bolgesi
- Akershus
- Alabama
- Alaska
- Alba
- Alberta
- Almaty
- Alytus
- Amata

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Adult / Sitzberg-Flachingen is the Most Adult Suitable Resort in Switzerland

■ Sum of Adult ● Sum of Rate

Families and Children / Austria Accounts for the Majority of Resorts for Families and Children

■ Sum of Families and children ● Sum of Rate

Beginners / Europe Accounts for the Majority of Resorts for Beginners

■ Sum of Beginners ● Sum of Rate

Level Easy / Glenshee and Cairngorm Mountain are the Most Suitable Resorts for Level Easy in the United Kingdom

■ Sum of Easy ● Sum of Rate

Level Intermediate / Les 3 Vallees (France) has the Highest Level Intermediate–Rate Correlation in Europe

■ Sum of Intermediate ● Sum of Rate

Level Difficult / Les 4 Vallees (Switzerland) is the Most Suitable Resort for Level Difficult in Europe

■ Sum of Difficult ● Sum of Rate

Cleanliness and Hygiene / Austria and Germany have Noticeably Higher Level of Cleanliness and Hygiene in Europe

NameResort   arabba
Sum of Cleanliness and hygiene   40 (10%)
Sum of Rate   5.00

Drillthrough Page for Resort Name

NameResort	Country	Sum of Total H
2.Zinnen Dolomites – Helm/Stiergarten/Rotwand/Kreuzbergpass	Italy	
Aletsch Arena – Riederalp/Bettmeralp/Fiesch Eggishorn	Switzerland	
Ankogel – Mallnitz	Austria	
Åre	Sweden	
Auron/Saint-Etienne-de-Tinee	France	
Bad Kleinkirchheim – Schlossalm/Angertal/Stubnerkogel	Austria	
Bad Wiessee/Islein	Austria	
Bansko	Bulgaria	
Baqueira/Beret	Spain	
Bellwald	Switzerland	
Belpiano-Schöneben/Malga San Valentino/Watles/etc	Italy	
Belvedere/Col Rodella/Campus/ Halbaer – Canazei/Largentiers/Alba/Pozza di Fassa	Italy	
Total		36

Continent

☐ Africa
☐ Asia
■ Europe
☐ North America
☐ Oceania
☐ South America

Mountain Restaurants, Ski Huts, Gastronomy / Colorado and British Columbia have Noticeably More Mountain Restaurants, Ski Huts, and Gastronomy in North America

Après-Ski / Snowmass, Vail and Whistler Blackcomb have the Highest Apres-Ski - Rate Correlation in North America

Snow Parks / Snowmass, Vail and Whistler Blackcomb have the Highest Number of Snow Parks - Rate Correlation in North America

Km Freeride / Austria has the Biggest Number of Km Freeride Resorts

NameResort	breckenridge
Sum of Snow parks	50
Sum of Rate	4.00

Drillthrough Page for Resort Name

NameResort	Country	Sum of Total Kms	Sum of Rate	URL
aberdeen-lake-prince-george	Canada	3		http://www.skiresort.info/ski-resort/aberdeen-
adanacs	Canada	3		http://www.skiresort.info/ski-resort/adanacs/
adanac-ski-hill	Canada	2		http://www.skiresort.info/ski-resort/adanac-ski-
alice-hill-park-penticton	Canada	1	1.00	http://www.skiresort.info/ski-resort/alice-hill-p
alpine-ski-club-collingwood	Canada	13	2.60	http://www.skiresort.info/ski-resort/alpine-ski-
amstor-mountain	Canada	11	2.18	http://www.skiresort.info/ski-resort/amstor-mo
apex-resort	Canada	47	0.00	http://www.skiresort.info/ski-resort/apex-resort
assessippi	Canada	18	2.00	http://www.skiresort.info/ski-resort/assessippi/
alta-lake-sports	Canada	3		http://www.skiresort.info/ski-resort/alta-lake-s
axis-freestyle-academy-vaughan	Canada	3		http://www.skiresort.info/ski-resort/axis-freest
baie-des-sables	Canada	1		http://www.skiresort.info/ski-resort/baie-des-s
batawa-ski-hill	Canada	1	1.00	http://www.skiresort.info/ski-resort/batawa-ski-
Total		15010	1,076.40	

Continent

- [ ] Africa
- [ ] Asia
- [ ] Europe
- [x] North America
- [ ] Oceania
- [ ] South America

iii.   Analysis Results

Dashboard 1 – Area and Facility Analysis		
Positive Insights	*Negative Insights*	*Comments*
1. Europe accounts for the majority of access and on-site parking lots AND rate. Providing convenient solutions for on-site parking makes a ski-resort area more attractive for visitors and travelers. Therefore, rate goes up. (***Access, On-site Parking***). 2. Eastern Switzerland and Lemanic Region have noticeably more accomodation offering directly at the slopes. Accomodation and lodging options are	1. Asia has the least snow reliability. There is a close relationship between the ski resort business and the level of snow in the region. Snow reliability ia the key factor to make skiing on slopes possible and to ensure added value in winter tourism. Unfortunately, Asian skiing	According to the analysis, competetive landscape, the infrastructural development and convenient ameneties attracts tourism and significantly improve skiers' experiences which is vital for developing the ski industry in general.

crucial for keeping mountain resort business going. If we look at the high rates of resorts in these two regions we can say that this could be one of the metrics that make Switzerland one of the most attractive countries for skiing. (*Accomodation Offering Directly at the Slopes and Lifts*). 3. Europe accounts for the majority of lifts and cable cars AND Rate. Lifts and cable cars are on the the most important skiing facilities. Correlation with high rate numbers demonstrates high level of equipment maintainace. (*Lifts and Cable Cars*).	industry is prone to gradual decline. (*Snow Reliability*).	

4. Europe accounts for the majority of environmentally friendly ski operation. Sustainability and eco-friendly production is an integral part of modern business environment. It is a very encouraging fact that such a big continent as Europe delivers environmently friendly outcomes along with high quality resorts standats if we look at the rates. (*Environmentally Friendly Ski Operation*).		

Dashboard 2 – Customer Service Analysis

Positive Insights	Negative Insights	Comments
1. Europe, specifically Austria, accounts for the majority of resorts for families and children. Resorts that accommodate small kids and offer enjoyable family experience are normally highly rated. That gives the industry exta economic boost. *(**Families and Children**).* 2. Asia is the most suitable continent for adults. Despite snow reliability issues, Asia is able to provide exeptional experience as far as adult ski and	1. Africa accounts for the least cleanliness and hygiene. Even though Africa has a few large ski areas and resorts failure to comply with sanitation standards mostly affect the rating. That may result in making the continent an unpopular ski destination. *(**Cleanliness and Hygiene**).*	According to the analysis, mountan resorts attract all kinds of travelers with different preferences and ski experience. Inclusivity and personalized approach influence tourists' satisfaction level. The operators should segment skiers and provide more personilized options in order to reach a larger audience and ensure best cusomer service.

snowboard lessons. That helps attract more skiers and increase resort rating. *(Adult)*.		
3. Austria and Germany have noticeably more beginners. Skiing is not "kind" to beginners and beginner-feiendly terrains as well as age-appropriate lessons are in high demand. Resorts that give beginners better opportunities earn higher rates. *(Beginners)*.		
4. 4. North America and Europe are the most suitable for level difficult skiers. Challenging ski destination and terrains attract a significant amount of experienced skiers. Highly rated resorts offer a big		

number of difficult slopes. *(Level Difficult).*		

Dashboard 3 –Entertainment and Activity Analysis		
Positive Insights	*Negative Insights*	*Comments*
1. Colorado and British Columbia have noticeably more mountain restaurants, ski huts and gastronomy for the continent North America. That means they have the	1. Africa accounts for the least of apres-ski. Since apres-ski activities play a huge role in ski resort	Fine dining, restaurant options, a broad range of after-ski activities, and large km freeride

biggest number of ski resorts that offer an outstanding customer dinning-out and cultural experience on the slopes. That greatly contributes to economic increase. *(Mountain Restaurants, Ski Huts, Gastronomy).* 2. Snowmass, Vail and Whistler have the highest apres-ski – rate correlation in North America. Apres-ski encompasses different post-ski entertaining and social avtivities. Well-developed apres-ski culture impacts a resort's income considerably. *(Apres-Ski).* 3. Region Tyrol has noaticeably more snow parks. This type of outdoor winter	industry a business is at risk of loosing a significant amount of income if this part is missing or not well presented. *(Apres-Ski).*	spaces have a great impact on the whole ski industry.

activities atracts a lot of visitors. No surprise, Tyrol's resorts have a high rate and a lot of stars. *(Snow Parks).* 4. Ski Alberg has noticeably more km freeride for the region Tyrol. Km freeride turns out to be another key attribute that consumers look for. Numerous freeride camps and slopes expand visitors' experience, therefore drastically increase business' success on the market. *(Km Freeride).*		

iv. Conclusion

According to this analysis, such attributes as ski infrastructure, cusomer-oriented service environment, gastronomy, and post-ski activities influence ski resort development and are positively related to a ski resort's demand and revenue. In the first place, ski resort businesses should concentrate on the key service quality metrics such as variety of slopes, number of lifts and cable cars, and accomodation options to achieve maximum performance. However, it is also essential that businesses understand skiers' behavior and make use of segmentation techniques in order to provide a more appropriate service to specific groups like families with kids, beginners, advanced skiers, etc. It is necessary to provide more deailed information about ski resort' facilities, skill knowledge, and a general introduction for first-time skiers. Special attention should be given to the snow condition. Skiers, especially in off seasons, do not mainly aim at skiing but pay more attention to other factors, such as eating options, apres-ski and other activities. Therefore, ski resort managers should understand skier's food preferences and offer more gastronomic options as well as non-ski activities.