

Factors Combination Affecting Borobudur Temple Visitor's Satisfaction in Indonesia during Covid-19 Pandemic and New Normal Era

Dicka Korintus Kurnianto¹

¹Undergraduate Program of Industrial Engineering Study Program, Faculty of Engineering
Universitas Sebelas Maret
Surakarta, Indonesia
dicka@student.uns.ac.id

Retno Wulan Damayanti^{2,3}

²Industrial Engineering Study Program, Faculty of Engineering
³Center of Technology Development and Industrial Collaboration, Institute for Research and
Community Service
Universitas Sebelas Maret
Surakarta, Indonesia
rwd@ft.uns.ac.id; retnowulan@staff.uns.ac.id

Eko Pujiyanto⁴

⁴Industrial Engineering Study Program, Faculty of Engineering
Universitas Sebelas Maret
Surakarta, Indonesia
ekopujiyanto@ft.uns.ac.id

Abstract

The Borobudur Temple tourism is targeted by the Indonesian government as one of the “Ten New Bali” in 2025. Currently, the service quality in Borobudur Temple is still perceived as low by tourists, which is shown in many bad reviews on social media, reflecting the lack of visitor satisfaction in Borobudur Temple, especially during the pandemic Covid-19 and the new normal era. Therefore, it is crucial to explore the factors that affect visitor's satisfaction in order to improve the tourism service quality in Borobudur Temple during the Covid-19 pandemic and the new normal era. Four pillars of tourism namely attraction, accessibility, amenity, and ancillary are analyzed using a Fuzzy Set Qualitative Comparative Analysis (fsQCA) approach to formulating the best configurations model to improve the visitor's satisfaction. This research found the configurational model that consists of two factors combinations that produces a high visitor satisfaction and three factors combinations that result in low visitor satisfaction. Further analyses are made based on those configurational models to propose service quality improvements in Borobudur Temple.

Keywords

fsQCA, Visitor's Satisfaction, Tourism Development

1. Introduction

Tourism sector in Indonesia plays a high role in contributing to the nation's gross domestic product and the nation's foreign exchange (Kemenparekraf 2021) while Bali still become the main tourism destination icon in Indonesia, proven by almost half of the number tourism arrival is to Bali (Ollivaud and Haxton 2019). This shows how popular Bali is but on the other hand also indicates the other destinations are less popular despite having many great potencies. Because of that, in 2017 the government announced the new development of the priority tourism destination as the “Ten New Balis” to boost the other destinations to be the new icon of Indonesian tourism destination. Borobudur

Temple is the one of them. This temple is located in Magelang Regency, Central Java Province, Indonesia. Borobudur Temple have grown and have attracted many tourists in the past few years, making this destination a great potential destination to be developed. The development itself as the priority tourism destination is based on attraction, accessibility, amenity, and ancillary as four pillars of tourism development (Kemenparekraf 2022). These four pillars of tourism development have been integrated in the development scheme to become a continuity plan. However, the development is hampered because of Covid-19 pandemic. Luckily, because of vaccination and new normal policy, some tourism destination including Borobudur Temple have opened by still implementing the health protocol.

However, the development and the service quality in Borobudur Temple are still considered bad in implementation by visitors, both before and during new normal era. This is shown in many bad reviews at Google Review and Tripadvisor site as the result of the preliminary that conducted by listing the bad reviews with low scores. Two hundred and thirty-two reviews before new normal era are listed from Tripadvisor with 1 until 2 review score and from Google Review with 1 review score with the range from 2018 to 2020. While 137 reviews during new normal era are listed from Google Review with 1 review score with the range from 2020 to 2022. Total review recapitulations can be seen in Figure 1.

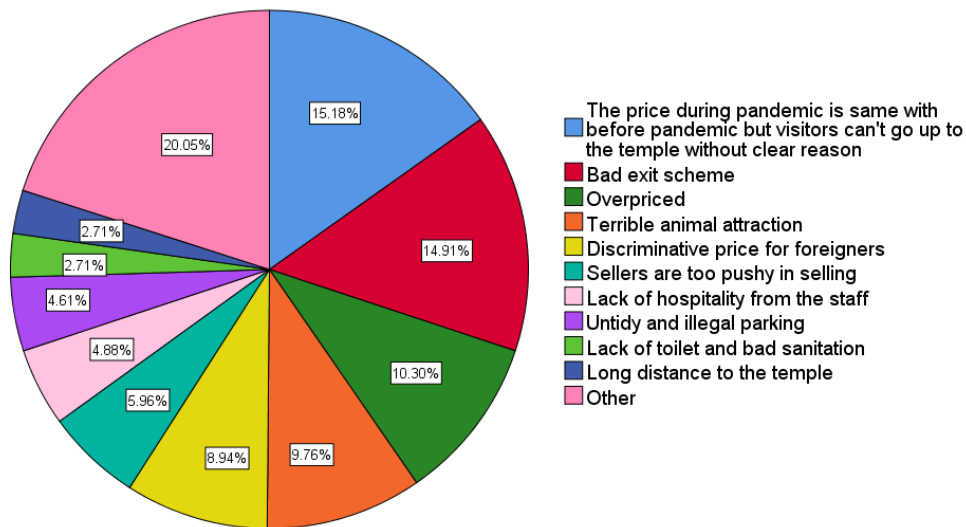


Figure 1. Bad Reviews of Borobudur

All those bad reviews indicate the lack of visitor's satisfaction in Borobudur Temple. Besides, many of the comments from the visitors contains several different critique aspects that linked to the four pillars of tourism development. This shows that Borobudur Temple's development as the priority tourism destination is have not considered satisfied yet by the visitors. All reviews also show that each visitor has their own critiques to the Borobudur Temple's development which make the visitor's preferences are complex, diverse, and unique about the development factors. Therefore, it is very important to improve these four pillars of tourism development to improve the service quality in Borobudur Temple by finding the best combination of all factors and find which factors that can be improved more. This can be solved with a method named Fuzzy Set Qualitative Comparative Analysis (fsQCA). The fsQCA method focuses on cases where it allows researcher to highlight the complexity, diversity, and uniqueness in every case where still gives a generalization pattern in its analyses (Verweij and Trelle 2019). This research aims to find the best configuration model of attraction, accessibility, amenity, and ancillary to improve the visitor's satisfaction in Borobudur Temple.

2. Literature Review

2.1 Tourism Development Pillars and Visitor's Satisfaction

The development of Borobudur Temple as the priority tourism destination is based on attraction, accessibility, amenity, and ancillary. Attraction is described as everything in the tourism object that can attract tourist to visit the destination (Kartika et al 2018). Accessibility is described as the supporting infrastructure to facilitate the tourist to visit the destination (Ismail and Rohman 2019). Those infrastructure could be roads, bridges, stations, bus stations, or airports. Amenity itself is described as the facilities to facilitate the tourism activity and provide comfort to the visitors

(Kagungan et al 2021). Lastly ancillary is described as additional service facilities that support tourist's activities in the destination. These facilities might link indirectly to the tourism activity, but these facilities are needed by some visitors (Buhalis and Amaranggana 2013). Visitor's satisfaction is described as the responds form visitors about the evaluation of the inconformity about the visitor's expectation or other performance indicator about the destination to the actual performance perceived from the destination (Ismail and Rohman 2019). Visitor's satisfaction could be seen as the quality measurement from the visitor's experience (Moore et al 2013).

The four pillars of tourism development highly impact the visitor's satisfaction. As shown by Ismail and Rohman (2019) on their research at Gili Ketapang Beach, East Java Province, Indonesia; attraction and ancillary aspects give significant positive impact to visitor's satisfaction. Accessibility aspect also have a significant positive impact towards visitor's satisfaction as explained by Ćulić et al (2021) on their research at tourism destination in Serbia. Another research by Hermawan et al (2019) at Nglanggeran ancient Volcano in Yogyakarta Province, Indonesia proves that amenity also give a significant positive impact towards visitor's satisfaction. For research in Borobudur Temple, there is research from Rahmiati and Winata (2020) that studied the effect of attraction, accessibility, and amenity towards visitor's satisfaction in Borobudur Temple and found that all three factors give positive effect to the visitor's satisfaction.

2.2 Fuzzy Set Qualitative Comparative Analysis (fsQCA)

Fuzzy Set Qualitative Comparative Analysis (fsQCA) is the newest type of Qualitative Comparative Analysis (QCA) method. QCA itself is a hybrid method that combine the benefits from qualitative analysis with its case oriented and from quantitative analysis with its variable oriented (Yong and Park 2017). QCA is aimed to identify condition variables that must appear or sufficient to appear in resulting certain outcomes (Gerrits and Pagliarin 2021). Although QCA mainly focuses on cases, QCA can still give a generalization pattern for all cases with Boolean algebra mechanism (1 or 0). There are three types of QCA namely Crisp set QCA (csQCA) using only conventional Boolean algebra, multi value QCA (mvQCA) using multi value, and fuzzy set QCA (fsQCA) using fuzzy value (Yáñez-Araque et al 2021). As the newest type of QCA, fsQCA remains superior to other two predecessor because fsQCA can analyze the condition variables with more diverse range by the fuzzy value before generalizing it into Boolean number. This is because on the actual case, there are some condition variables that cannot be determined clearly as 1 or 0.

The fsQCA method has three principles namely conjunction, equifinality, and asymmetric (Baquero et al 2019). Conjunction principle means that the outcome does not comes from per set results but from the combined condition in the configuration. Equifinality principle means that the same outcomes can be obtained from more than one configuration. While asymmetric principle means that the certain causal condition obtained to explain certain outcome cannot be concluded absolutely that the negation of this causal condition also results the negation of that outcome. Based on those principles, fsQCA can explain a "sufficient condition" (where a condition in the configuration is quite capable explaining the outcome), "necessary condition" (where a condition is a must to present in the configuration for certain outcome occurs), and "insufficient but necessary condition" (where a condition must present but not enough capable for explaining the outcome without other condition) (Pappas and Woodside 2021).

3. Methods

This research uses fsQCA to find the best configuration of attraction, accessibility, amenity, and ancillary in resulting the outcome which is in this case is visitor's satisfaction. This research is not only analyzing high visitor's satisfaction but also analyzing low visitor's satisfaction to make the results analyses deeper and more comprehensive. The research conceptual model is shown in Figure 2.

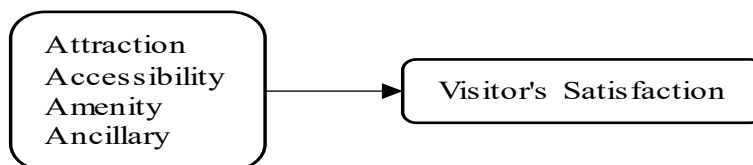


Figure 2. Conceptual Model

There are several steps in fsQCA. The first step is data aggregation and threshold determination. This step is done by finding the average of the indicators in each variable and each respondent from the collected data so there is only one

value for each variable in every case or respondent (Pappas and Woodside 2021). This averaged data is called aggregate data. Next is determining the thresholds that become an indicator for changing the aggregate data to fuzzy value. This threshold is divided to upper breakpoint, middle breakpoint, and lower breakpoint.

The second step is fuzzy calibration. Fuzzy calibration is a step to change the aggregate data to fuzzy value using the threshold that have been determined before. Those thresholds will determine the fuzzy membership function of the case where is categorized full membership (labeled as “1”), non-membership (labeled as “0”), or crossover membership (labeled as “0,5”) (Pappas and Woodside 2021).

The next step of fsQCA is constructing the truth table. Truth table is a matrix table that contains all possible causal condition combinations. The combinations are constructed by all Boolean number of each causal condition that are made from the final fuzzy calibration results. For the causal conditions, the fuzzy set membership above 0,5 will be given symbol “1”, means “presence” and is associated as “high” in terminology. While the fuzzy set membership below 0,5 will be given symbol “0” means “absence” and is associated as “low”. The determination of “presence” and “absence” for the outcomes uses the raw consistency that shows the empirical level of whether the combination can support the conceptual model (Fiss 2011). The combination with the raw consistency above 0,8 will be considered “presence” and labeled as “1” while below 0,8 is “absence” and is given “0” as the label (Fiss 2011). Furthermore, it is also conducted a configuration elimination to focus the analyses into the larger number of cases. The eliminated configurations are the configurations which have the number of cases below 2 since the data used in this research are below 150 data (Fiss 2011).

The last step in fsQCA is finding the solution configuration using the Boolean minimization process. In this step, all condition that result the presence outputs will be minimized to get the best optimal configuration solution. It is also conducted a necessary condition analysis to find what condition that must present to create certain outputs.

4. Data Collection

The respondent’s data are collected through online questionnaire with the targeted respondents are those who ever visited Borobudur Temple during Covid-19 pandemic (year 2020 to 2022). Five-point Likert scale is used in this research with “1” refers to “very disagree” while “5” refers to “very agree”. Each attribute and indicators can be seen in Table 1.

Table 1. Questionnaire Attributes and Indicators

Attribute	Code	Indicator	Reference
Attraction (ATT)	ATT1	Attraction Strength	Pinangias et al. (2021), Yusendra and Paramitasari (2018)
	ATT2	Tourism Activity on Location	
	ATT3	Supporting Attraction Diversity	
	ATT4	Environmental Cleanness	
	ATT5	Condition of Tourism Object	
	ATT6	Attractive Events	
Accessibility (ACC)	ACC1	Infrastructure Interconnection	Pinangias et al. (2021), Yusendra and Paramitasari (2018), Kemenparekraf (2022)
	ACC2	Roads Conditions to the Location	
	ACC3	Availability of Various Modes of Transportation	
	ACC4	Smooth Traffic Flows	
	ACC5	Travel Time from the Nearest Airport, Terminal, and Station	
Amenities (AMN)	AMN1	Service and hospitality	Pinangias et al. (2021), Yusendra and Paramitasari (2018), Kemenparekraf (2022)
	AMN2	Professional Tourism Workers	
	AMN3	Covid-19 health protocol service	
	AMN4	Hotels and Lodgings	
	AMN5	Hygiene and Permitted Restaurant	
	AMN6	Souvenir Shops	

Table 1. Questionnaire Attributes and Indicators (Cont.)

Attribute	Code	Indicator	Reference
Ancillary (ANC)	ANC1	Telecommunication network	Pinangias et al. (2021), Yusendra and Paramitasari (2018), Kemenparekraf (2022)
	ANC2	Waste Management	
	ANC3	Water Supply Services	
	ANC4	Accessible Tourist Information Centre	
	ANC5	Exciting Tour Packages	
Satisfaction (SAT)	SAT1	Satisfaction with the Travel Experience	Rasoolimanesh et al. (2021)
	SAT2	Feeling about the Travel Experience	
	SAT3	Pleasant Experience in the Destination	

Before distributing the questionnaire, two-way translation process is conducted by translating the original questionnaire items that are written in foreign language to avoid a shift in meaning (Lee et al. 2019). Pilot study is also conducted to evaluate the questionnaire quantitatively by asking some respondents to fill it and answer some question about the questionnaire’s quality (Hartono 2010). The minimum sample needed for this research with 4 predictors is 85 respondents based on the A-priori power analysis using G*Power software. Total 137 respondents are obtained in this research, 30 Indonesian respondents and 7 foreign respondents. Validity and reliability test are conducted with 137 data. It is found that the collected data is valid and reliable.

5. Results and Discussion

5.1 Data Aggregation and Threshold Determination

The data aggregation and threshold determination become the first step in fsQCA. This research used 80th percentile as upper breakpoint, 50th percentile as middle breakpoint, and 20th percentile as lower breakpoint for the thresholds because the collected data are skewed to the right (Pappas et al. 2017). Data aggregation is shown on Table 2 while the thresholds is on Table 3.

Table 2. Data Aggregation

Table 3. Thresholds

Respondent	ATT	ACC	AMN	ANC	SAT
Respondent 1	4,67	3,80	3,17	3,00	4,00
Respondent 2	4,17	4,00	3,50	3,00	4,00
Respondent 3	4,50	3,80	3,00	2,20	4,00
Respondent 4	3,67	3,60	3,17	3,60	3,00
Respondent 5	3,67	3,80	3,83	3,00	4,67
Respondent 6	4,00	3,40	3,67	3,40	4,00
Respondent 7	3,83	4,20	4,17	3,40	4,33
...
Respondent 136	3,50	3,80	3,33	3,20	4,00
Respondent 137	3,67	3,40	4,00	3,60	3,67

Threshold	ATT	ACC	AMN	ANC	SAT
Upper Breakpoint	4,83	4,80	4,67	4,80	5,00
Middle Breakpoint	4,33	4,20	4,17	4,00	4,67
Lower Breakpoint	3,67	3,60	3,67	3,52	4,00

5.2 Fuzzy Calibration

The next step in fsQCA is fuzzy calibration by changing the aggregate data into fuzzy value. This step is done by choosing “Variable > Compute” in fsQCA software version 3.1 and then input the desired causal condition with its thresholds. All causal conditions name also changed to differentiate the new fuzzy set with the older aggregate data. For example, “fATT” means fuzzy set for ATT. The fuzzy calibration result is shown in Table 4. All aggregate data will be changed to fuzzy value and after that to Boolean number (either 0 or 1). The intermediate set become a determination for changing the fuzzy set into Boolean number because those fuzzy set more than 0,5 will be changed to 1 while below 0,5 will be changed to 0. However, cases with the exact value on 0,5 is difficult to be analyzed. It

will be excluded from the analysis because of the same value of the intermediate set as a middle breakpoint. This case can be solved by adding 0,001 to all causal conditions that below the full membership with the value of 1 (Fiss 2011). The final fuzzy calibration result after being added with 0,001 is shown in Table 5.

Table 4. Fuzzy Calibration Result

Case	fATT	fACC	fAMN	fANC	fSAT
Res1	0,88	0,12	0	0	0,05
Res2	0,33	0,27	0,02	0	0,05
Res3	0,73	0,12	0	0	0,05
Res4	0,05	0,05	0	0,08	0
Res5	0,05	0,12	0,12	0	0,5
Res6	0,18	0,02	0,05	0,02	0,05
Res7	0,09	0,5	0,5	0,02	0,18
...
Res136	0,02	0,12	0,01	0,01	0,05
Res137	0,05	0,02	0,27	0,08	0,01

Table 5. Final Fuzzy Calibration Result

Case	fATT	fACC	fAMN	fANC	fSAT
Res1	0,881	0,121	0,001	0,001	0,051
Res2	0,331	0,271	0,021	0,001	0,051
Res3	0,731	0,121	0,001	0,001	0,051
Res4	0,051	0,051	0,001	0,081	0,001
Res5	0,051	0,121	0,121	0,001	0,501
Res6	0,181	0,021	0,051	0,021	0,051
Res7	0,091	0,501	0,501	0,021	0,181
...
Res136	0,021	0,121	0,011	0,011	0,051
Res137	0,051	0,021	0,271	0,081	0,011

5.3 Truth Table Construction

In the fsQCA software, this action can be done by choosing “Analyze > Truth Table Algorithm” and then selecting the desired outcomes and causal conditions. In this research, the outcomes that will be analyzed are high satisfaction that labeled as “fSAT” and low satisfaction as “~fSAT”. These steps are done in fsQCA software by choosing “Edit > Delete and Code” on the “Edit Truth Table” dialog box. The truth table for high satisfaction is shown on Table 6 while for low satisfaction is on Table 7.

Table 6. Truth Table for High Satisfaction (fSAT)

fATT	fACC	fAMN	fANC	Case	fSAT	Raw Consist.
1	1	1	1	44	1	0,882973
1	1	1	0	3	1	0,836868
1	0	1	1	9	1	0,835084
1	1	0	1	3	0	0,790026
0	1	1	1	8	0	0,77858
0	0	1	1	2	0	0,770412
0	1	1	0	3	0	0,740661
1	0	0	1	5	0	0,707953
1	1	0	0	4	0	0,701789
0	0	1	0	2	0	0,687867
0	1	0	1	2	0	0,680039
1	0	0	0	2	0	0,598571
0	0	0	1	7	0	0,565716
0	1	0	0	5	0	0,536644
0	0	0	0	37	0	0,283362

Table 7. Truth Table for Low Satisfaction (~fSAT)

fATT	fACC	fAMN	fANC	Case	~fSAT	Raw Consist.
0	0	0	0	37	1	0,875361
1	0	0	0	2	1	0,85055
0	0	0	1	7	1	0,839655
0	1	0	0	5	1	0,812364
1	0	0	1	5	0	0,795996
0	0	1	0	2	0	0,756066
0	1	1	0	3	0	0,737806
0	1	0	1	2	0	0,732762
1	1	0	0	4	0	0,69998
0	0	1	1	2	0	0,681442
1	1	1	0	3	0	0,630021
1	1	0	1	3	0	0,609457
0	1	1	1	8	0	0,605358
1	0	1	1	9	0	0,59657
1	1	1	1	44	0	0,276521

5.4 Solution Configuration

Solution configurations are the best configuration that can produce certain outcomes. In fsQCA 3.1, solution configuration can be calculated by selecting “Standard Analyses” in the “Edit Truth Table” dialog box. For high satisfaction, this research finds two solution configurations. The solution configuration results for high satisfaction can be seen in Table 8.

Table 8. Solution Configurations for High Satisfaction

Configurations	Raw Coverage	Unique Coverage	Consistency
fATT*fACC*fAMN	0,579386	0,0413672	0,880819
fATT*fAMN*fANC	0,622778	0,0847593	0,87413

Solution Coverage: 0,664145

Solution Consistency: 0,872831

The first solution configuration for high satisfaction is fATT*fACC*fAMN that can be interpreted as the visitors could have high level of satisfaction due to high level of attraction, accessibility, and amenity. This is in accordance with the research from Rahmiati and Winata (2020) which found attraction, accessibility, and amenity have a positive influence on the occurrence of visitor's satisfaction.

The second solution configuration for high satisfaction is fATT*fAMN*fANC that can be interpreted as high level of attraction, amenity, and ancillary are contributing to the occurrence on high satisfaction. In this configuration, both high attraction and high ancillary show positive impact on high satisfaction, in line with the previous research by Ismail and Rohman (2019) who found attraction and ancillary significantly influence visitor's satisfaction. This configuration also being strengthen with the presence of high amenity that also contributing to high visitor's satisfaction. This is in accordance with the research from Hermawan et al (2019), found that amenity corelate positively with the level of visitor's satisfaction. Next is the solution configuration results for low satisfaction that can be seen in Table 9.

Table 9. Solution Configurations for Low Satisfaction

Configurations	Raw Coverage	Unique Coverage	Consistency
~fACC*~fAMN*~fANC	0,642967	0,0499536	0,869304
~fATT*~fAMN*~fANC	0,641336	0,0483326	0,86694
~fATT*~fACC*~fAMN	0,627632	0,0346287	0,867068

Solution Coverage: 0,725918

Solution Consistency: 0,855661

The first solution configuration for low satisfaction is ~fACC*~fAMN*~fANC that can be interpreted as low accessibility, low amenity, and low ancillary simultaneously accommodate low visitor's satisfaction. Accessibility plays a great role in the configuration. As mentioned by Ćulić et al (2021), accessibility gives a positive impact to visitor's satisfaction, implied that if it is on the low level, the visitor's will also on the low level. This configuration also mentioned low amenity that resulted on low visitor's satisfaction. This is opposed to Ćulić et al (2021) who mentioned that amenity didn't have a significance effect to satisfaction where this research found that amenity is one of the important conditions to produce satisfaction. However, this research is in accordance with Ismail and Rohman (2019) who found ancillary significantly affects visitor's satisfaction.

The second solution configuration for low satisfaction is ~fATT*~fAMN*~fANC that can be interpreted as the low visitor's satisfaction can occur because of the combination of low attraction, low amenity, and low ancillary. Constantin et al (2022) explain that attraction and amenity have a significant impact to visitor's satisfaction. Low attraction and accessibility factors will cause low visitor's satisfaction. However, this research is not in line with Watanabe et al (2018) that explains ancillary has a negative impact to visitor's satisfaction, means high level of ancillary will results in low level of visitor's satisfaction and vice versa. Meanwhile this research find that ancillary has a positive impact to visitor's satisfaction, low ancillary contributing to low visitor's satisfaction

The third solution configuration for low satisfaction is ~fATT*~fACC*~fAMN that can be interpreted as the visitors could feel a low satisfaction because of the low attraction, low accessibility, and low amenity of the destination. Once

again this is aligned with the research from Rahmiati and Winata (2020) which explains all those three factors have positive influence on satisfaction. This means that low attraction, accessibility, and amenity will also contributing on low visitor’s satisfaction.

5.5 Necessary Condition Analysis

A causal condition is categorized as necessary condition if its consistency value is above 0,90 (Dul 2016). In fsQCA 3.1, this action is done by click “Analyze > Necessary Condition” and select the desired outcomes and all causal conditions. Necessary condition for high satisfaction is shown in Table 10 while for low satisfaction is on the Table 11. Based on the necessary condition analysis, there are no necessary condition in both high and low satisfaction because there are no conditions with the consistency more than 0,90.

Table 10. Necessary Condition Analysis for High Satisfaction

Causal Condition	Consistency	Coverage
fATT	0,774361	0,767699
~fATT	0,338097	0,347516
fACC	0,743540	0,766945
~fACC	0,368616	0,363744
fAMN	0,775808	0,806608
~fAMN	0,330952	0,324539
fANC	0,773493	0,792875
~fANC	0,355193	0,353069

Table 11. Necessary Condition Analysis for Low Satisfaction

Causal Condition	Consistency	Coverage
fATT	0,353285	0,343791
~fATT	0,761284	0,768075
fACC	0,343118	0,347964
~fACC	0,770126	0,745943
fAMN	0,298263	0,304389
~fAMN	0,810500	0,780151
fANC	0,336958	0,339037
~fANC	0,794144	0,774848

5.6 Best Solution Configuration

Based on the calculation before, this research can tabulate the best solution configuration for both high and low visitor’s satisfaction. The tabulation is shown in Table 12. Black circles indicates that the condition is presence (high), the cross sign (×) indicates that the condition is absence (low), and the blank space indicates the don’t care condition.

Table 12. Best Solution Configuration

Condition	Solution Configuration				
	High Satisfaction		Low Satisfaction		
	1	2	1	2	3
Attraction	●	●		×	×
Accessibility	●		×		×
Amenity	●	●	×	×	×
Ancillary		●	×	×	

The solution configurations show the conjunction principle, means that certain outcome is occurred because of the combination of the conditions. But as can be seen in Table 12, it is not necessarily needing all high or all low of the four conditions in resulting certain outcomes. There are some configurations with blank space (don’t care), showing whether that condition is high or low, the outcome is still the same. However, this do not negate the conjunction principle since the outcomes are presence due to the combination of four conditions whether those conditions are high, low, or don’t care. This research obtained two configurations for high satisfaction and three configurations for low satisfaction. These configurations prove the equifinality principle that certain outcomes, high and low satisfaction in this case, can be obtained from more than one configuration.

This research also proves the asymmetric principle in QCA that can be seen in the truth table. For example, the first configuration in the truth table of high satisfaction, fATT*fACC*fAMN*fANC or high attraction, high accessibility, high amenity, and high ancillary. It cannot be concluded absolutely that if certain condition for example high ancillary

(fANC) is low, the outcome will show low satisfaction (the negation of high satisfaction). This is proven by $fATT*fACC*fAMN*\sim fANC$ or high attraction, high accessibility, high amenity, and high ancillary as the second configuration in the truth table of high satisfaction. The second configuration shows that even the ancillary is low ($\sim fANC$), the configuration still produces high satisfaction.

On the practical advice, of course the Borobudur Temple's management must enhance all four pillars of tourism development. However, the management can pay more attention to enhance the amenity aspects because amenity is presence on all solution configurations both high and low level of satisfaction, indicating that this aspect is very important to presence. Although it is not a necessary condition, amenity has the highest coverage and consistency based on the necessary condition analysis. For high satisfaction, the condition is high amenity (fAMN) with 0,775808 in consistency and 0,806608 in coverage while for low satisfaction, the condition is low amenity ($\sim fAMN$) with 0,810500 in consistency and 0,780151 in coverage.

To achieve the high level of visitor's satisfaction, the management also can focus on enhancing other aspects based on the high satisfaction solution configuration especially first solution configuration ($fATT*fACC*fAMN$) because this configuration has higher consistency with value of 0,880819 than the second solution configuration ($fATT*fAMN*fANC$) with 0,86694 in consistency. Furthermore, to avoid the occurrence of low visitor's satisfaction, the management must highly maintain all four pillars of tourism in the implementation and ensure that no aspects in those four pillars can construct even one of the three solution configurations of low satisfaction.

6. Conclusion

This research aims to find the best configuration to improve the visitor's satisfaction and found two configurations that produces high visitor's satisfaction and three configuration that produces low visitor's satisfaction. Amenity become the aspect that could be given more consideration due to its presence on all solution configuration and the high value of consistency and coverage. This research also finds some configuration that must be avoided so the low level of visitor's satisfaction doesn't occur. However, in the future this research must be compared to other research which conducted when the pandemic era is over to see how far the relevance of this research when the condition is back to normal.

References

- Baquero, A., Delgado, B., Escortell, R., and Sapena, J., Authentic leadership and job satisfaction: A fuzzy-set qualitative comparative analysis (fsQCA), *Sustainability (Switzerland)*, 11(8), 2019.
- Buhalis, D., and Amaranggana, A., Smart Tourism Destinations. *Information and Communication Technologies in Tourism 2014*, 553–564, 2013.
- Ćulić, M., Vujičić, M. D., Kalinić, Č., Dunjić, M., Stankov, U., Kovačić, S., Vasiljević, Đ. A., and Anđelković, Ž., Rookie tourism destinations—the effects of attractiveness factors on destination image and revisit intention with the satisfaction mediation effect, *Sustainability (Switzerland)*, 13(11), 2021.
- Constantin, C. P., Ispas, A., and Candrea, A. N., Examining the Relationships between Visitors Profile, Satisfaction and Revisit Intentions: Evidence from Romanian Ecotourism Destinations, *Land*, 11(2), 2022.
- Dul, J., Identifying single necessary conditions with NCA and fsQCA, *Journal of Business Research*, 69(4), 1516–1523, 2016.
- Fiss, P. C., Building better causal theories: A fuzzy set approach to typologies in organization research, *Academy of management journal*, 54(2), 393-420, 2011.
- Gerrits, L., and Pagliarin, S., Social and causal complexity in Qualitative Comparative Analysis (QCA): strategies to account for emergence, *International Journal of Social Research Methodology*, 24(4), 501–514, 2021
- Hartono, B., Investigating Risky Decisions of Construction Contractors in Competitive Bid Mark-Ups, [Thesis, National University of Singapore], 2010.
- Hermawan, H., Wijayanti, A., and Nugroho, D. S., Loyalty on Ecotourism analysed using the factors of tourist attraction, safety, and amenities, with satisfaction as an intervening variable, *African Journal of Hospitality, Tourism and Leisure*, Vol. 8, Issue 5, 2019.
- Ismail, T., and Rohman, F., The Role of Attraction, Accessibility, Amenities, and Ancillary on Visitor Satisfaction and Visitor Loyalty of Gili Ketapang Beach, *Jurnal Manajemen Teori Dan Terapan*, 2(12), 149–165, 2019.
- Kagungan, D., Karomani, Yulianti, D., Meutia, I. F., Neta, Y., and Zainal, A. G., Prospective study of the tourism industry strategy in the new normal era, *International Journal of Entrepreneurship*, 25(2), 2021.

- Kartika, T., Ruskana, R., and Fauzi, M. I., Strategi Pengembangan Daya Tarik Dago Tea House Sebagai Alternatif Wisata Budaya di Jawa Barat, *Tourism and Hospitality Essentials Journal*, 8(2), 121–138, 2018.
- Kemenparekraf, Rencana Strategis 2020-2024 Kementerian Pariwisata dan Ekonomi Kreatif Republik Indonesia. Available: https://www.kemenparekraf.go.id/asset_admin/assets/uploads/media/pdf/media_1598887965_Rencana_strategis_2020-2024.pdf, November 21, 2021.
- Kemenparekraf, Siaran Pers : Keutuhan dan Kelestarian Candi Borobudur Jadi Fokus Pengembangan DSP Borobudur. Available: <https://kemenparekraf.go.id/hasil-pencarian/siaran-pers-keutuhan-dan-kelestarian-candi-borobudur-jadi-fokus-pengembangan-dsp-borobudur>, February 15, 2022.
- Lee, W. L., Chinna, K., Lim Abdullah, K., and Zainal Abidin, I., The forward-backward and dual-panel translation methods are comparable in producing semantic equivalent versions of a heart quality of life questionnaire, *International Journal of Nursing Practice*, 25(1), 2019.
- Moore, S. A., Rodger, K., and Taplin, R., Moving beyond visitor satisfaction to loyalty in nature-based tourism: A review and research agenda, *Current Issues in Tourism*, 18(7), 667-683, 2015.
- Ollivaud, P., and Haxton, P., Making the most of tourism in Indonesia to promote sustainable regional development, *OECD Economics Department Working Papers*, 2019.
- Pappas, I., Mikalef, P., Giannakos, M., and Pavlou, P., Value co-creation and trust in social commerce: An fsQCA approach, *The 25th European Conference on Information Systems (ECIS)*, Association for Information Systems, Guimarães, Portugal, 2017.
- Pappas, I. O., and Woodside, A. G., Fuzzy-set Qualitative Comparative Analysis (fsQCA): Guidelines for research practice in Information Systems and marketing, *International Journal of Information Management*, 58, 2021.
- Pinanigas, A. J., Fatimah, E., and Ramadhani, A., Linkages between Solo-Selo-Borobudur as the Jawa Tengah Provincial tourism strategic area, *IOP Conference Series: Earth and Environmental Science*, 737(1), 2021
- Rahmiati, F., and Winata, A., Destination Marketing to Improve Domestic Tourists' Return Intention, *International Journal of Applied Sciences in Tourism and Events*, Vol. 4, Issue 2, 2020.
- Rasoolimanesh, S.M., Seyfi, S., Rather, R.A. and Hall, C.M., Investigating the mediating role of visitor satisfaction in the relationship between memorable tourism experiences and behavioral intentions in heritage tourism context, *Tourism Review*, Vol. 77 No. 2, pp. 687-709, 2022
- Verweij, S., and Trelle, E. M., Qualitative Comparative Analysis (QCA) in Spatial Planning Research and Related Disciplines: A Systematic Literature Review of Applications, *Journal of Planning Literature*, 34(3), 300–317, 2019.
- Watanabe, W. C., Patitad, P., and Suto, H., Tourists' Satisfaction: Benefits of Inconvenience Aspect, *Proceedings of The Fourth International Conference on Electronics and Software Science (ICESS 2018)*, 134–143, 2018.
- Yáñez-Araque, B., Gómez-Cantarino, S., Gutiérrez-Broncano, S., and López-Ruiz, V. R., Examining the determinants of healthcare workers' performance: a configurational analysis during covid-19 times, *International Journal of Environmental Research and Public Health*, 18(11), 2021
- Yong, T., and Park, C., A qualitative comparative analysis on factors affecting the deployment of electric vehicles, *Energy Procedia*, 128, 497–503, 2017.
- Yusendra, M. A. E., and Paramitasari, N., Identifying factors affecting domestic tourist satisfaction on tourist destinations in indonesia, *DeReMa Jurnal Manajemen*, 13(2), 157-174, 2018.

Biographies

Dicka Korintus Kurnianto is currently an undergraduate student in Industrial Engineering at the Faculty of Engineering, Universitas Sebelas Maret. He is also working as the Assistant of Quality System and Engineering Laboratory.

Retno Wulan Damayanti is an associate professor of industrial engineering, Engineering Faculty, Universitas Sebelas Maret, Surakarta, Indonesia. She received a Doctoral degree from Industrial Engineering, Universitas Gadjah Mada, Indonesia, in 2021. Since 2005, she joined as a lecturer at Industrial Engineering and a researcher at Quality System Laboratory, Faculty of Engineering, Universitas Sebelas Maret Surakarta. Currently, she is the head of the Center of Technology Development and Industrial Collaboration, Institute for Research and Community Service of Universitas Sebelas Maret Surakarta. Her research interests are Quality System, Project and Megaproject Management, Leadership, Complexity Management, and Qualitative Comparative Analysis.

Eko Pujiyanto is an associate professor and teaching staff at the Department of Industrial Engineering, Faculty of Engineering, Universitas Sebelas Maret. He obtained his Bachelor of Science degree in Mathematics from Institut Teknologi Bandung in 1993. In 1998, he completed his master's study from Institut Teknologi Bandung in the field of science: Industrial Engineering. Then, in 2012, he obtained his Doctoral degree from Gadjah Mada University in the field of science: Mechanical Engineering (Biomaterials).